CPAT Report No. 1552

Pentre Ffwrndan Roman Settlement, Flintshire

Community Excavation and Outreach 2017-18

Llywodraeth Cymru
Welsh Government

Cadw

YMDDIRIEDOLAETH ARCHAEOLEGOL CLWYD-POWYS

CLWYD-POWYS ARCHAEOLOGICAL TRUST

Client name:	Cadw
CPAT Project No:	2201
Project Name:	Pentre Ffwrndan
Grid Reference:	N/A
County/LPA:	Flintshire
CPAT Report No:	1552
Event PRN:	140226
Report status:	FINAL
Confidential:	No

Prepared by:	**Checked by:**	**Approved by:**
Ian Grant Senior Archaeologist		
Alex Sperr Community Archaeologist	Paul Belford Director	Paul Belford Director
21 March 2018	29 March 2018	29 March 2018

Bibliographic reference:

Grant, I. and Sperr, A., 2017. *Pentre Ffwrndan Roman Settlement, Flintshire: Community Excavation and Outreach 2017-18*. CPAT Report No 1552.

Cover photo: Volunteer excavation team, Pentre Ffrwndan 2017. Photo CPAT 4410-0068

YMDDIRIEDOLAETH ARCHAEOLEGOL CLWYD-POWYS
CLWYD-POWYS ARCHAEOLOGICAL TRUST

41 Broad Street, Welshpool, Powys, SY21 7RR, United Kingdom
+44 (0) 1938 553 670
trust@cpat.org.uk
www.cpat.org.uk

The Clwyd-Powys Archaeological Trust is a Registered Organisation with the Chartered Institute for Archaeologists

CONTENTS

SUMMARY II

1 INTRODUCTION 1

2 BACKGROUND 1

3 COMMUNITY EXCAVATION 7

4 COMMUNITY OUTREACH 14

5 CONCLUSIONS 21

6 ACKNOWLEDGEMENTS 21

7 SOURCES 21

8 ARCHIVE DEPOSITION STATEMENT 22

APPENDIX 1: ARCHIVE SUMMARY 23

APPENDIX 2: METAL DETECTOR SURVEY AND EXCAVATION FIGURES 24

APPENDIX 3: PUBLIC ENGAGEMENT 26

Summary

In 2016-17 the Clwyd-Powys Archaeological Trust (CPAT) conducted a review of existing data for Roman activity along the Deeside coastal strip, with funding from Cadw. This confirmed a main focus of activity in the Pentre Ffwrndan area.

A community-based project was then developed in 2017-18, again with Cadw funding, aiming to engage local residents, schools and youth organisations through their direct participation in a weekend of Roman themed activities, displays and field investigation, promoting a 'Big Dig' to be undertaken by the local community with coordination and professional guidance by CPAT staff. Consequently the project generated considerable public visitor interest and in addition engaged with over 200 adults and children from numerous schools and organisations.

The investigative elements of the project, undertaken over a three day period 7 – 9th October 2017, also included volunteer participation with geophysical survey and small-scale excavation on a section of a presumed Roman road north of Chester Road, which was first identified in 1993. The excavation provided an ideal opportunity for volunteers to get involved with archaeology, and an excellent training opportunity for the local students that came along. The success of this was demonstrated by the positive feedback and by the numbers that have since volunteered for other CPAT outreach projects.

The excavation revealed a 3.1m wide section of road surface, comparable with the road recorded in 1993 although the upper surfaces differed in construction and the road recorded in 2017 was flanked by at least one drainage ditch. The combination of geophysical survey and trial excavation has probably confirmed the alignment of a Roman side road thought to be leading east to a quayside along the Dee Estuary. Sadly, its projected line suggests that the location of the quay may have been largely lost beneath the railway line.

1 Introduction

1.1. The Deeside coastal strip in Flintshire includes what is now a well-attested Roman industrial ribbon settlement centred on Pentre Ffwrndan, which was set out along the coastal road between the legionary fortresses at Chester (*Deva*) and Caernarfon (*Segontium*), including the scheduled sites at Pentre Bridge (SAM Fl 131) and Leadbrook Drive (SAM Fl 213).

1.2. In 2016-17 the Clwyd-Powys Archaeological Trust (CPAT) conducted a review of existing data for Roman activity along the Deeside coastal strip, with funding from Cadw. This confirmed a main focus of activity in the Pentre Ffwrndan area, much of which has come to light as a result of recent developer-funded work. While the recent review has enhanced our overall understanding of Roman settlement and industry in this area, and in particular has provided important baseline data to assist with development control, the extent of occupation remains uncertain.

1.3. It was notable that during Cadw-funded rescue excavations in 2013, which revealed the well-preserved remains of the Roman road and roadside settlement, there was considerable interest from the local community. Following on from this a community-based project was developed in 2017-18, again with Cadw funding, which aimed to engage local residents through their direct participation in a programme of investigation. It is evident that while much has already been lost through development significant archaeological remains are likely to survive within allotments, gardens and pasture fields to the north of Chester Road and the project therefore promoted a 'Big Dig' to be undertaken by the local community with coordination and professional guidance by CPAT staff.

2 Background

2.1. Until recently the Roman road (RR67a) linking *Deva* (Chester) with the unlocated fort at *Varis* which appeared in the Antonine Itinerary on *Iter XI,* was assumed to have been largely adopted by the present A548 Chester Road. However, in 2007 an evaluation and subsequent excavation associated with a new sewage pipeline uncovered a short section of Roman road with a width of around 12m further to the north (Dodd 2007). Six years later further archaeological investigations on the site of a new housing development to the south of Chester Road identified a well-preserved Roman road extending in a slight curve for around 130m, to either side of which were a series of buildings forming a ribbon settlement associated with the lead industry.

2.2. The projected course of the Roman road extended into an adjacent development plot to the east, which was subsequently investigated by geophysics in 2014. This confirmed the presence of a Roman road within the plot, along with intensive roadside activity, as well as a small roadside cremation cemetery (Wardell Armstrong 2014). Pottery evidence indicates activity here from the late 1st century to the 3rd century AD. The significance of this discovery led to the site subsequently being scheduled (SAM Fl 213).

2.3. While the *Deva* to *Varis* Roman road would have been constructed by and for the military during the early years of Roman occupation it evidently also became a focus for industrial and civilian activity at a later date. There is now a growing body of

evidence for a Roman ribbon settlement at Pentre Ffwrndan which was associated with the lead industry. The settlement is known to extend for at least 800m between Pentre Farm and Leadbrook Drive and dates from the late 1st to early 4th centuries.

2.4. Until recently the only substantial excavations in the area were those conducted by CPAT near Pentre Farm between 1976 and 1981 (O'Leary *et al*. 1989) which identified eight phases of building.

Fig. 1 Excavations at Pentre Farm. Photo CPAT

2.5. The complex is thought to represent an official residence associated with lead mining in the district. While it may not be entirely military, the combination of plan-form, size, method of construction, type of bath-house and the presence of stamped military tiles certain suggests a strong military connection.

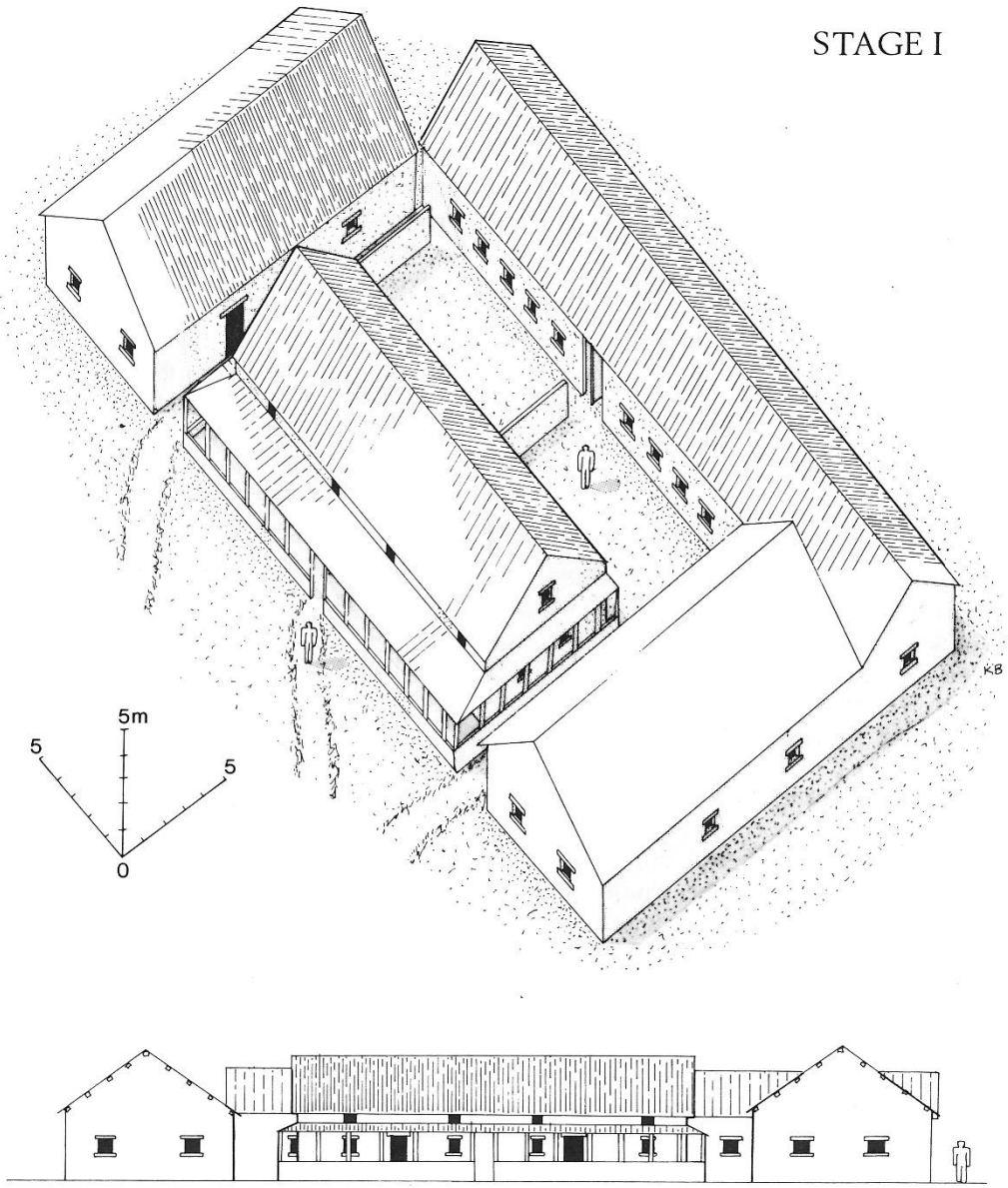


Fig. 2 Tentative reconstruction of the Phase 1 building at Pentre Farm (after O'Leary *et al*. 1989, fig. 7)

2.6. In the mid-19th century the remains of buildings, a number of burials and various artefacts were reported in Ship Field, in Pentre Ffwrndan, on the north-east side of Chester Road (Wynne-Ffoulkes 1856). The finds were not well located, although it is perhaps likely that they were related to further discoveries made during excavations in 1923-4, which revealed evidence for two buildings associated with 2nd-century pottery, as well as at least seven lead-smelting furnaces (Atkinson and Taylor 1924; Petch and Taylor 1925). The presence of smelting furnaces at Pentre Ffwrndan, on either side of Chester Road, had been known since 1840 (Davies 1949, 130).

2.7. Further excavations were undertaken in 1933-4 on the opposite side of Chester Road, recovering the partial plan of another stone building which extended beneath the modern road. Pottery indicated that occupation may date from the late 1st century to the end of the 2nd century AD (Petch 1936).

2.8. What now appears to be the main focus of the Roman settlement was revealed in 2013 during a housing development on the southern side of Chester Road. This identified the Roman road from Chester to Caernarfon, which was flanked by timber-framed buildings associated with industrial activity, laid out in narrow plots typically set at right angles to the road frontage. The discoveries included stone-based washing tanks, small hearths and lead waste and slag, together with fragments of *galena*, the unprocessed lead ore. Other features included a stone-lined well and a timber-lined cistern, both containing waterlogged deposits; these micro-environments resulted in the preservation of artefacts made from leather and wood, as well as the preservation of important palaeoenvironmental evidence (Dodd 2016). The settlement appears to have been in use from the late 1st to the late 3rd centuries AD, with a possibility of some 4th-century or later activity at the upper levels which has been partly damaged by later ploughing. The archaeology was well preserved in general with multiple phases and a large assemblage of artefacts was recovered.

Fig. 3 Rescue excavations alongside Chester Road, funded by Cadw in 2013. Photo Fiona Grant

2.9. The industrial settlement at Pentre Ffwrndan was strategically situated close to important lead deposits on Halkyn Mountain and along the shore of the Dee estuary, taking advantage of the waterway to transport the processed lead. Lead from the Flintshire orefields contains a relatively high proportion of silver which would have added considerably to its value, perhaps explaining the possible presence of the high-ranking Roman official at Pentre Farm. Lead and silver would have had a ready market in Chester, and from there would have been traded further afield. Lead ingots of up to 70kg were cast in moulds; such bars marked DECEANGL (an abbreviation of the Iron Age tribal name in the phrase *Deceanglicum plumbum* ('Deceanglian lead')) have been found not only in Chester but also as far as the village of Hints in south Staffordshire, over 100 miles away.

2.10. To the north of Chester Road a section of a different road, assumed to be of Roman date, was revealed in 1993. The exploratory trench (2m x 5m), excavated across the line of a stone spread visible within a plough furrow, was located on the southern edge of the field at SJ25847191, adjacent to the north wall of No. 369 Chester Road (See Fig 05 and 14). The road, 2.9m wide, had a cambered surface constrained by edging stones (Fig. 04 and 25), and its alignment, approximately east to west, suggested that it was heading towards the estuary and perhaps therefore servicing a quay.

2.11. The surface of the road survived much better on the northern half and less better to the south, where significant gaps were noted and which, even where surviving, formed a noticeably less coherent surface. Immediately above the stone surface, and again mostly confined to the northern side was an intermittently occurring hard yellow clay with small rounded stones (Fig. 25, (011)) representing possibly the remains of metalling or an attempt to repair what had become a fragmentary original surface.

Fig. 4 A section of the possible Roman side road at Oakenholt, viewed from the east, excavated in 1993

2.12. Since there was no actual threat to the survival of the remains, the surface was not lifted to allow excavation of deposits beneath it, however, careful observation of recently created holes caused by the ploughing which discovered it, revealed a sequence of layers below the road surface. The road surface appeared to have been laid directly onto a layer of fine pale yellow sand (009) about 0.14m deep. Below this a deposit of mid buff clayey soil (017) was noted which in turn overlay a layer of greyish gravely soil (016). Both 016 and 017 were noted extending to the south of the road surface where they were cut by a drain construction trench (014) of 19th-century origin. (Fig. 25 Section C – D).

2.13. No side ditches were noted associated with the road remains, despite the extension of the excavation to the north of the road by an additional 2m. The line of the road surface was traced to the east across the field by means of a hand auger. The road was noted continuing the same east west alignment for approximately 100m where

it appeared to turn to the south to run on a south easterly alignment passing under the eastern boundary of the field at SJ25967190.

Fig. 5 The 1993 excavation, viewed from the West. The line of white pegs marking the auguring points can be seen in the background.

2.14. The report of the 1993 excavations (Grenter n.d., 2) concluded:

'No evidence as to the date of the road was derived from the excavations. Of roman roads excavated in the past, this example would appear to be quite narrow at 2.9m, although not uniquely so. The relatively complicated construction technique utilised, which may have been necessitated by the nature of the ground, so close to the tidal zone of the Estuary, would perhaps inevitably result in a narrower width. The recently ploughed field was walked to examine the potential for associated roman remains, and although a little roman pottery and tile was found, there was no more than could be expected so close to a known settlement.

The road's surface appeared to pre-date the slab drain … which is likely to have been constructed in the 19th century. An examination of available cartographic sources also failed to provide any evidence supporting a possibly relatively recent origin for the remains. On balance, therefore, although the actual date for construction cannot be definitively deduced, a date sometime during the roman period cannot be ruled out and is perhaps the likeliest interpretation of the available evidence.'

Fig. 6 Steven Grenter, director of the 1993 Excavations, giving a site tour to the public on the 2017 'Big Dig' open day. Photo CPAT 4410-0041

3 Community Excavation

3.1. The investigative elements of the project were undertaken over a three day period between 7 and 9 October 2017. These focused on the presumed Roman road north of Chester Road first identified in 1993, and was accompanied by small-scale excavations by members of the local community in gardens flanking the projected line of the Roman road from *Deva* to *Varis*.

Geophysical Survey

3.2. A magnetometer and resistance survey was undertaken by Archaeological Survey West (ASW) covering the field within which the presumed Roman road had been discovered. The aim was to determine further the course and extent of the road, investigate the possibility of a roadside settlement and assist in locating a suitable position for trial excavation. The results of the survey are detailed in full in the ASW report (Matthews 2017), a copy of which has been supplied separately to Cadw and will be lodged in the CPAT HER.

3.3. The survey area was plotted with a temporary grid of 20m x 20m mapped out with an R8 Trimble GPS using coordinates set out in QGIS. The equipment used for the survey was a dual sensor Bartington Instruments Grad 601-2 fluxgate gradiometer and a Geoscan RM15 Resistance meter. Data collected in the field was downloaded and processed using Terra Surveyor software version 3.0.32.4.

3.4. While the survey (Fig. 7) was able to confirm the alignment of the road the results for the field as a whole were rather disappointing owing to the presence in the plough-soil of a substance known locally as 'Dee Ink', a by-product of the local paper mill

which had been spread across the field in the early 1990s and unfortunately has magnetic properties which cause interference in the magnetometer survey data.

3.5. Although the initial magnetic survey results were unsuccessful in identifying the road, the first two grids of resistance survey (eastern extent of total survey area) identified possible archaeological features, none of which were initially interpreted as a possible Roman road. Despite this and due to time constraints, the excavation trench was located over these possible features. The excavation did not provide further understanding of the geophysical survey results. Nevertheless, the trench had revealed a section of the Roman Road running at a slightly different orientation to the known section to the west.

3.6. Further resistance surveys were then conducted in order to investigate the surrounding area. The additional anomalies, recorded as a spread of high resistance readings that may represent demolition rubble, included a linear feature orientated north-west to south-east that resembled a second road (Fig. 7).

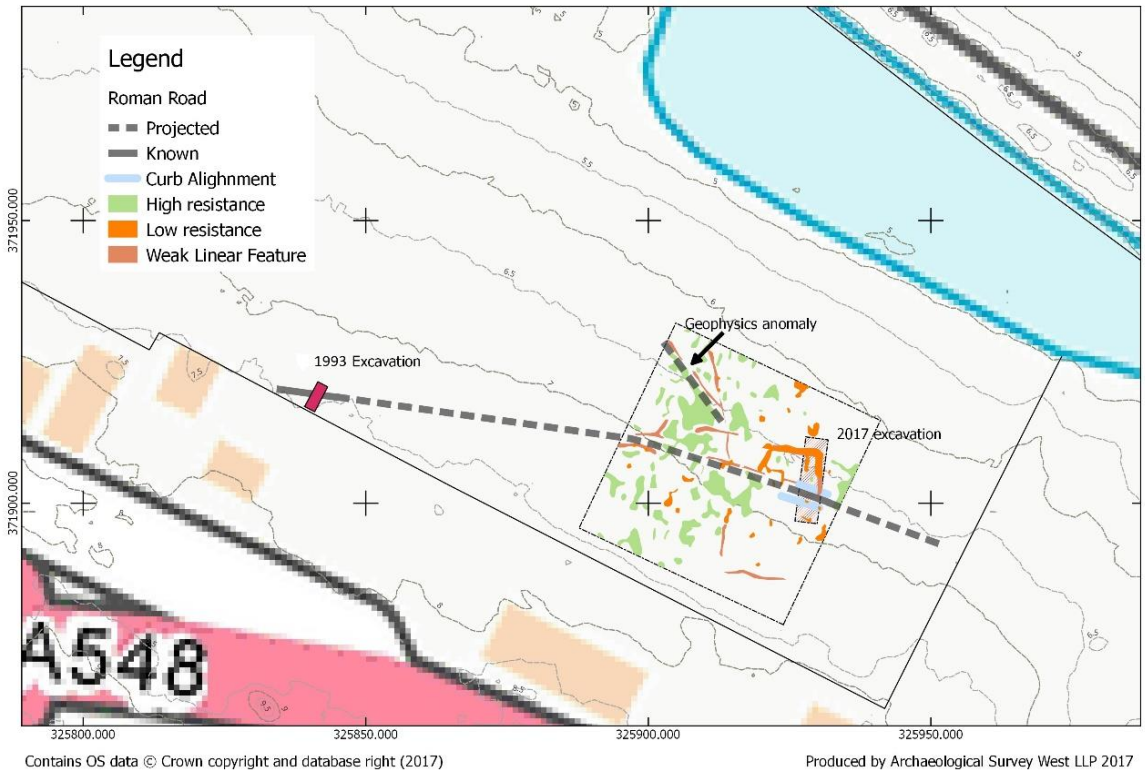


Fig. 7 Interpretation plan of the Resistance Survey.

Metal Detector Survey

3.7. A small number of local metal detector users were engaged as part of the project to survey the field in order to identify areas of potential Roman activity or occupation. The detectorists were supervised by Chris Matthews of Archaeology Survey West, who laid out a traverse grid across the field and recorded the location, material and

type of finds using GPS. The finds were later analysed and additional information including descriptions and interpretations were added. A table of the key finds from the survey is presented in Appendix 2 together with distribution maps using a variety of categorised displays including date, material, and broad classification (Figs. 22, 23 and 24).

3.8. A total of 92 finds were recovered during the metal detector survey, which were divided into 19 classifications of type and 6 classifications of chronology. Finds included a possible Roman lead spindle whorl, an unidentified bronze object, and a ceramic tile with a clear lead glaze that may be associated with lead production rather than ceramic glazing.

3.9. The survey also revealed a collection of lead objects totalling 18 finds that included worked sheet lead, as well as cast-off globules of lead that possibly indicate the processing and working of lead nearby. Without scientific analysis, it is impossible to date these objects, however, given the known Roman lead processing in Oakenholt, it is possible that some of these objects could be from this period.

Trial Excavation

3.10. Having identified, through geophysical survey, a suitable area for locating the 2017 excavation, a single trench was initially machine excavated with the assistance of the landowner. This measured 15m by 4m in plan and was orientated north-north-east to south-south-west. Once archaeological deposits had been encountered, excavation continued by hand. This was undertaken by volunteers under the close supervision of CPAT staff (Fig. 26). The excavations were conducted according to the Chartered Institute for Archaeologists' (CIfA) *Standard and Guidance for Archaeological Field Evaluation* (2014).

3.11. The upper deposits, comprising a 0.22m-thick layer of modern plough-soil (01); a 0.22m-thick deposit of bluish-grey silty clay (02 – see earlier note on 'Dee Ink') and an underlying 0.20m-thick relic plough-soil (05), were removed carefully by machine under close archaeological supervision. This revealed the upper cambered surface of a road (20), constructed of small rounded pebbles set into a firm pale grey deposit of silty clay (18). The road, 3.1m wide and aligned approximately north-west-west by south-east-east, was constrained by edging stones (16 and 17) set upright forming a flanking kerb (Figs. 8 and 9). A number of the kerb stones were missing owing to later ploughing activity and the construction of a stone-filled drain [04] orientated north-east to south-west, probably in the 19th century. .

3.12. The road surface (18) was also truncated by the outline of at least three wheel ruts (19). The wheel ruts, were evidently associated with the use of the road and broadly followed its alignment. Their creation had worn through the surface and exposed an underlying construction material of buff silty clay. Numerous small abraded sherds of 18th and 19th-century pottery and glass were recovered from the remnants of the later deposits overlying the road, together with corroded iron objects, slag, a single sherd of olive-glazed medieval pottery, and three abraded sherds of an orange sandy ware of probable Roman origin.

Fig. 8 Roman road (20), after initial clean, viewed from the south. Photo CPAT 4410-0067

Fig. 9 Roman road (20) with flanking kerb stones (16 & 17), viewed from the west. Photo CPAT 4410-0095

3.13. Removal of up to 0.2m of a broad 3m-wide band of yellow/brown silty clay (06), to the northern side of the road (20) revealed a flanking drainage ditch [13]. The ditch, containing at least two fills (11 and 12), was only partially excavated to a depth of

0.4m and a width of 2.1m , revealing an outer edge cut in to the natural undisturbed subsoil, a firm pink-reddish clay (15) (Fig. 10). A slumped re-deposited road surface (14), located along the northern edge of the road, partially infilled the ditch. The compacted nature of this deposit meant that it was not possible to record the full depth and width of the ditch in the time available. An unidentified piece of corroded iron was recovered from the ditch fill (11), together with a single sherd of abraded orange sandy ware from the underlying fill (12). The pottery was of Roman origin.

Fig. 10 North flanking roadside ditch [13], viewed from the west. Photo CPAT 4410-0096

3.14. Along the southern side of the road, up to 0.3m of iron pan-mottled colluvium (08 and 09) was removed by hand revealing deposits of dark stained and re-deposited pink clay flanking the road. The deposits, which remained unexcavated due to time constraints, could have been the upper fills of another roadside drainage ditch.

3.15. At the northern extent of the trench the faint outline of a sub-linear feature was noted. The feature, which also remained unexcavated, corresponded in position with a similar anomaly recorded in the results of the geophysical survey. It was oriented west-south-west to east-north-east, at an angle approximately 45˚ from the road.

3.16. In addition to the use of photogrammetry to record the excavation in detail, the opportunity was also taken to employ drone photography of the general area. This was undertaken by Mark Walters of Skywest Surveys, a PFCO Drone Operator. Some of the results are illustrated below (see Figs 11 -13).

3.17. The field in which the excavations were conducted contains an obvious natural terrace, running north-west to south-east. This may indicate the former coastline, prior to post medieval reclamation and the construction of the railway, indicating that the high water mark would have been further inland during the Roman period.

Fig. 11 The line of the road viewed from the east. Photo Mark Walters (Skywest Surveys).

Fig. 12 The line of the road, showing the location of the excavation, viewed from the west. Photo Mark Walters (Skywest Surveys).

Fig. 13 The line of the Roman road, showing the location of the excavation, viewed from the east. Photo Mark Walters (Skywest Surveys).

3.18. The road surfaces revealed in 1993 and 2017 were comparable in construction. Their dimensions were similar, the former being 2.9m wide and the latter 3.1m wide. In addition, both road surfaces were constrained by flanking kerb stones set on edge. However, the road section recorded in 2017 had at least one flanking ditch, along the northern side – the southern edge remained unexcavated. No flanking ditches were identified in the 1993 excavation, although it is quite possible that the northern side remained undiscovered under deep alluvial deposits and a southern ditch may well have been removed by a post-medieval culverted drain noted by the excavator.

3.19. Although the 2017 excavation revealed an *in situ* road surface, the small pebbled metalled surface was not comparable with the well-preserved block paved material recorded in 1993. It has been suggested that the preservation of the block-paved road section is possibly due to its sheltered location on the southern boundary of the field, whereas the other road section has suffered due to extensive plough erosion out in the open field. However this does not explain the excellent preservation of wheel rut erosion recorded in the upper road surface recorded in 2017.

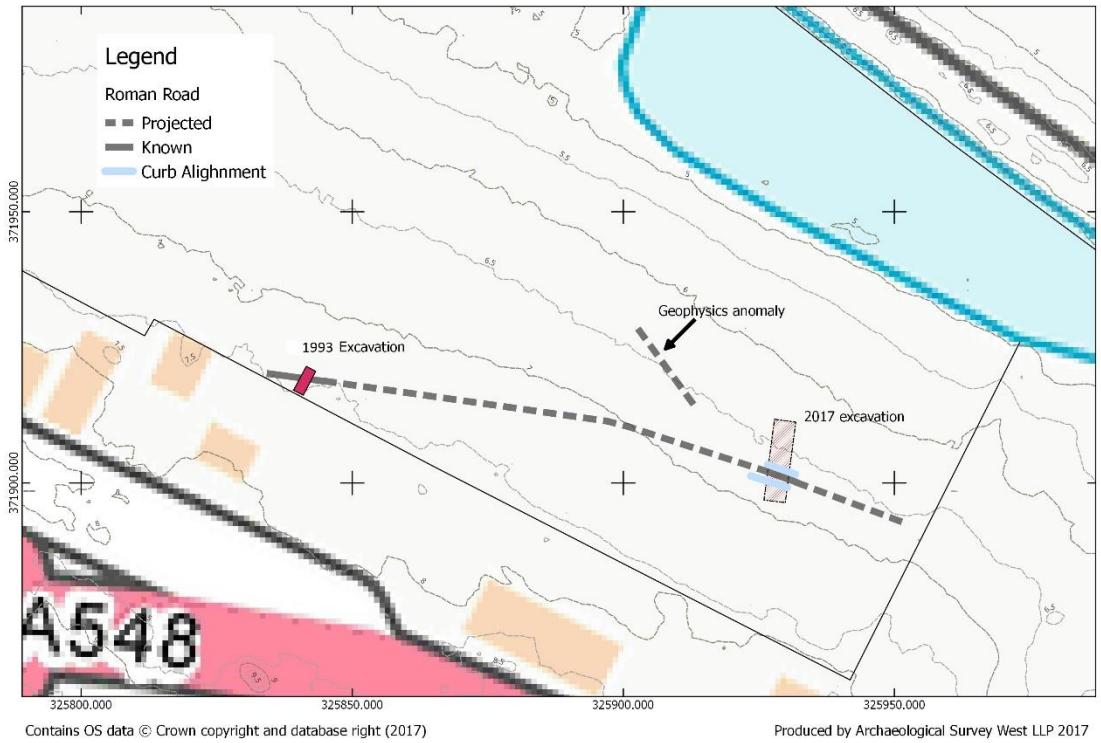


Fig. 14 Plan showing the alignment of the Roman road combining the results of the 1993 and 2017 excavations.

4 Community Outreach

4.1. The community outreach event was conducted over a four-day period from 7 to 10 October 2017. Outreach activities took place at the Oakenholt Bowling Club on Saturday and Sunday (7-8), and at the excavation site on Monday and Tuesday (9-10).

4.2. The aims of the community archaeology activities were:

- To offer local residents an opportunity to get involved with the excavations of the Roman road and experience archaeological field work.
- To invite members of the public to come see what was found during excavations in the area dating back to the 1970s, with a display of excavation photographs and Roman artefacts.
- To invite residents in the local area to join in the Big Dig by excavating small test pits in their garden to see if they could uncover previously unknown Roman remains.
- To encourage local residents to bring along anything they had found for identification by archaeologists and Roman expert, and to have their discoveries added to the HER record.
- To provide educational activities based on the Roman remains found in the area, and an opportunity for local schools to visit the excavation site

Interaction with local residents

4.3. Through initial discussions with local residents in Oakenholt and Flint, it was apparent that a great many were aware of the previous excavations in the area, and in the Roman occupation. A few had also mentioned that they had come across objects in their gardens that could have been of Roman origin. Based on this, residents living around the excavation site were targeted residents with leaflets inviting them to participate in the Big Dig. Premises along Chester Road, Leadbrook Drive, Pentre Bridge, Gardners Row, Bennetts Row, Croes Atti Lane, Caesar Avenue and Julius Close formed a particular focus.

4.4. Information packs giving guidance on excavating test trenches were offered by post prior to the event, and also at the bowling club during the activities. Prior to the event, eight people registered to participate (and received information packs), and three people took information packs on the weekend. Despite the initial interest, there were no test pits excavated by local residents as part of the Big Dig. Feedback collected from visitors to the events regarding the reasons why people chose not to participate identified 3 main factors:

- The poor weather conditions
- The reluctance to disturb lawn or established plants
- The concern that if they did find anything they may a) inadvertently damage the archaeology or b) that anything found may lead on to archaeologists swarming in to excavate the rest of the garden.

Figs 15 and 16. Roman helmet and 'lead pig' pendant group sessions.

Community engagement at the Oakenholt Bowling Club

4.5. CPAT staff, along with a pupil on work experience from Llanfylin High School, organised a weekend of Roman themed activities and displays for members of the public and special sessions for Marches Young Archaeologists Club (YAC), and for the 1st Flintshire Cubs and Scouts.

4.6. The Scouts and YAC made cardboard Roman helmets and Plaster-of-Paris pendants as a way of demonstrating the manufacture of lead pigs in the area during the Roman period. They then undertook further activities at the main excavation site.

4.7. Activities available to all participants included Roman mosaic colouring in sheets, cardboard helmet making, an 'identify the mystery Roman object' quiz, Roman costume dressing up, and a Roman pot reconstruction activity featuring a near complete amphorae that could be reconstructed.

4.8. A photographic display of previous excavations in the Oakenholt and Flint area, and Roman objects found during the Croes Atti excavations on Oakenholt, were put on display at the Bowling Club over the weekend. This was very popular as many visitors recalled seeing previous excavations. Local residents were also pleased to be able to see and also handle the finds from Croes Atti, particularly as many had commented that there had been little or no publicity about the results of the previous excavations.

4.9. Sophie Fish (Flintshire County Council) and Sarah Peverly (Greenfield Valley Heritage Park) were invited to bring activities on Saturday 7 October at the Bowling Club. Activities included a sandpit with archaeological finds for children to excavate, and full Roman costumes – including a helmet – for dressing up. They also brought a selection of artefacts from CPAT's excavations at Pentre Farm in the 1970s.

4.10. Leigh Dodd from Earthworks Archaeology attended the event to discuss recent work at the Croes Atti excavations, and also to identify any finds that were brought in by the local community on Saturday 7 and Sunday 8 October. Despite no volunteers coming forward to excavate their gardens during that particular weekend, several members of the public brought items previously discovered in their gardens. Many of these assemblages contained pieces of Roman pottery, including one tray with pieces of very early Roman pottery. The geographical location of the items identified as being of Roman or of historical or archaeological significance were recorded on the Historic Environment Record (HER) by CPAT's HER Officer.

Fig. 17. Leigh Dodd, Earthworks Archaeology and Ian Grant, CPAT inspect a collection of finds brought in by a local resident

Fig 18. A selection of finds including pieces of Roman pottery, discovered in the garden of a local resident

Community engagement at the excavation site

4.11. Volunteer opportunities were advertised via social media, through the Friends of CPAT network, on the posters and leaflets that were distributed around the area, and on a BBC Radio Wales interview with Ian Grant as the excavations began.

4.12. During the four days of excavations, 18 volunteers participated in excavations, including two students from Flint High School, one from CADVAS, one from U3A, one student from Liverpool University, one from Chester University, three metal detectorists who volunteered to participate in surveying the site, six members of the Marches YAC, and eight members of the public.

4.13. YAC and the 1st Flintshire Scouts visited the excavation site and participated in geophysical survey, excavation (YAC) and finds washing. They were also given a demonstration of metal detecting and as the site was photographed and filmed using a drone.

Fig. 19. Volunteers and members of Marches YAC excavate the Roman road. Photo CPAT 4410-0044

Fig. 20 Chris Matthews of Archaeological Survey West demonstrates geophysical survey to children from the 1st Flintshire Scouts and Cubs. Photo CPAT 4410-0039

4.14. Local schools were contacted prior to the events and invited to visit the site for archaeological activities. On Monday 9 October 46 children and 5 members of staff from Ysgol Merllyn Primary school in Bagilt attended a morning session, and 86 pupils and 9 members of staff from St. Marys Primary school in Oakenholt attended an afternoon session at the excavation site. Pupils were split into groups and participated in the following activities: site visit and discussion of the Roman road, small finds washing, cardboard helmet making, 'guess the Roman object' quiz, drone demonstration, and the construction of a Roman road mural made up of small stones and clay tiles that the pupils were able to personalize. These mosaics were created as collaborative pieces that were presented to each school after the event as a memento.

Fig 21. Drone photograph courtesy of Skywest Surveys, showing pupils being lined up ready to swap activities at the school sessions

Press coverage and social media

4.15. BBC Radio Wales asked for an interview with Ian Grant on the first day of excavations, and BBC Online contacted the community archaeologist for details of the site to include in their 'what's on' guide.

4.16. The Shropshire Star, North Wales Daily Post, and North Wales Newspapers printed information provided in CPAT press releases, and the North Wales Daily Post and UK Bulletin sent photographers and reporters to film footage and interviews for online videos.

4.17. The event was advertised and shared on Facebook, Twitter and Instagram.

4.18. Two members of the public visited the site after apparently seeing the event advertised on Ceefax.

Outreach conclusions

4.19. The positive feedback received from visitors to the family activity weekend and to the excavation site and volunteers demonstrated that they valued the opportunities they were given. It was also clear that this had re-awakened an appreciation of the value of their local heritage in those who took part. The level of interest generated, and the positive comments that followed on-site and in the schools visits, will no doubt encourage community and educational initiatives in future years.

4.20. The excavation provided an ideal opportunity for volunteers to get involved with archaeology, as well as an excellent training opportunity for the local students that

came along. The success of this was demonstrated by the positive feedback and by the numbers that have since volunteered for other CPAT outreach projects.

4.21. Feedback from the schools visits were positive overall. The only negative comment was that the group size in the afternoon activity may have been slightly too large, so that the activities over-ran a little as a result.

5 Conclusions

5.1. The combination of geophysical survey and trial excavation has probably confirmed the alignment of a Roman side road thought to be leading to a quayside along the Dee Estuary. Sadly, its projected line suggests that the location of the quay may have been largely lost beneath the railway line.

5.2. The auguring exercise undertaken in 1993 clearly recorded a road surface heading east in the direction of the road recorded in 2017. Although there are comparable dimensions (2.9m – 3.1m wide), the two upper road surfaces differ slightly in construction, and the latter was flanked by at least one drainage ditch. The geophysical survey also suggested the existence of other minor roads in the vicinity. Therefore it remains to be seen whether they are one of the same or form part of a network of minor roads associated with the Roman occupation at Pentre Ffwrndan.

5.3. The community-based project generated considerable interest with the local community, engaging with over 200 adults and children from numerous schools and organisations, in addition to the number of public visitors over a four-day period, successfully raising public awareness of the important Roman industrial settlement at Pentre Ffwrndan.

6 Acknowledgements

6.1. The authors would like to thank the following for their assistance with the project: Ian Davies, CPAT; Mr Andy Ratcliffe, for facilitating access for the excavation, as well as undertaking the machining; Sarah Peverly and Sophie Fish, Greenfield Valley Heritage Park; Steve Grenter, Wrexham Museum Services; Lee Dodd, Earthworks Archaeology; Mark Walters, Skywest Surveys, for the drone survey; Chris Matthews, Archaeological Survey West, for geophysical survey; Matt Thomas, for the photogrammetry survey of the excavation; Wendi and Jeff Spencer, Marches Young Archaeologists Club; Llion Wright Evans, work experience student from Llanfyllin High School and all of the volunteer excavators.

7 Sources

Atkinson, D. and Taylor, M. V., 1924. Flint Excavation Report. *Flintshire Historical Society publications* 10 part 1, 5-23.

Burnham, C. and Davies, J. L. (eds), 2010. *Roman Frontiers in Wales and the Marches*. Aberystwyth: RCAHMW.

Dodd, L. J., 2007. *Surface Water Pipeline and Outfall on a Proposed Development at Croes Atti, Oakenholt, Flint*. Earthworks Archaeology E871.

Dodd, L. J., 2013. *Residential Development at Croes Atti, Oakenholt, Flint*. Earthworks Archaeology E1240.

Dodd, L. J., 2016. *Residential Development at Croes Atti, Oakenholt, Flint: an archaeological strip, map and map excavation*. Earthworks Archaeology E1242.

Grenter, S., nd. *The Excavation of a possible Roman Road at Oakenholt, Flintshire.* Unpublished note. Wrexham Archaeology Service.

Matthews, C. M., 2017 *Geophysical Investigations at Oakenholt, 'The Big Dig' 2017.* Archaeology Survey West.

Moore, B., 2015. *Quarry Farm, Oakenholt, Flint: Archaeological Evaluation Report.* Wardell Armstrong.

O'Leary, T. J., Blockley, K. and Musson, C., 1989. *Pentre Farm, Flint. 1976-81: An official building in the Roman lead mining district*. BAR British Series 207. Oxford.

Pennant, T., 1796. *The history of the Parishes of Whiteford and Holywell*, (Reprinted by Gale/Ecco). Michigan.

Pennant, T., 1991. *A Tour in Wales*. Wrexham: Bridge Books.

Petch, J. A., 1936. Excavations at Pentre Ffwrndan, near Flint in 1932, 1933 and 1934. *Archaeologia Cambrensis* 91, Part 1, 74-92.

Petch, J. A. and Taylor, M. V., 1925. Report on the Excavations carried out at Pentre, Flint during September, 1924. *Flintshire Historical Society publications* 10 part 2, 5-29.

Taylor, M. V., 1922. Roman Flintshire. *Flintshire Historical Society Publications* 9, 58-96.

Wynne-Ffoulkes, W., 1856. Roman Remains and Ancient Lead Works. *Archaeologia Cambrensis* 2, 304-11.

8 Archive deposition Statement

8.1. The project archive has been prepared according to the CPAT Archive Policy and in line with the CIfA *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives guidance* (2014). The digital archive only will be deposited with the Historic Environment Record, Clwyd-Powys Archaeological Trust and the paper/drawn/digital archive with the National Monuments Record (RCAHMW). The artefacts will be deposited with Flintshire Museum Services, Greenfield Valley Park, in due course.

Appendix 1: Archive Summary

Geophysical Survey: Event PRN 140227

Trial Excavation: Event PRN 140226

96 digital photographs, CPAT film 4410

1 x Context Register

1 x Finds Register

20 context record forms

1 x Drawings register

1 x A2 site plan

Digital survey data:

Digital site drawings (Adobe Illustrator and JPEG

Appendix 2: Metal Detector Survey and Excavation figures

Finds Number	Material	Broad Classification	Broad Period	Description
5	Copper	Domestic	Unknown post medieval	Hollow decorated copper tube with a line and circle pattern. Possible fitting or decorative item i.e clothing / jewellery
9	lead	Unknown	Unknown	sheet lead
14	Lead	Domestic / Industrial	Roman?	Sub circular lead loom weight 24mm diameter, central hole measuring 8mm
20	lead	industrial	Unknown	lead off-cast
22	Copper Alloy	Unknown	Unknown / Roman?	62mm long leaded copper alloy bar rounded at one end, flat and square profile at the other. Possible tool
24	Lead	Unknown /domestic	Unknown	decorative objects, small plate with hole pattern
25	Copper	Domestic / Coin	Post Medieval	large copper disk 37mm diameter 2mm thick. Corroded pattern visible. Possible medallion, too large to be a coin, pattern does not match a cartwheel penny.
35	lead	Unknown	Unknown	sheet lead
50	Iron	Unknown	Unknown	Iron rod/shafts 110mm long 10mm wide square profile
52	Copper Alloy	Unknown	Post Medieval	Copper Alloy canvas eyelet
53	lead	industrial	Unknown	lead off-cast
57	Copper Alloy	Unknown	Unknown	small fragment of cast copper, possible decorative or fastening
58	Lead	Unknown	Unknown	sheet lead
59	Lead	Unknown	Unknown	sheet lead
60	Lead	Unknown	Unknown	sheet lead
74	lead	industrial	Unknown	lead off-cast
75	Copper Alloy	Unknown	Unknown	Circular copper plate approximately 70mm diameter
77	iron	Nail	Unknown / post medieval	corroded die press iron nail 3mm diameter

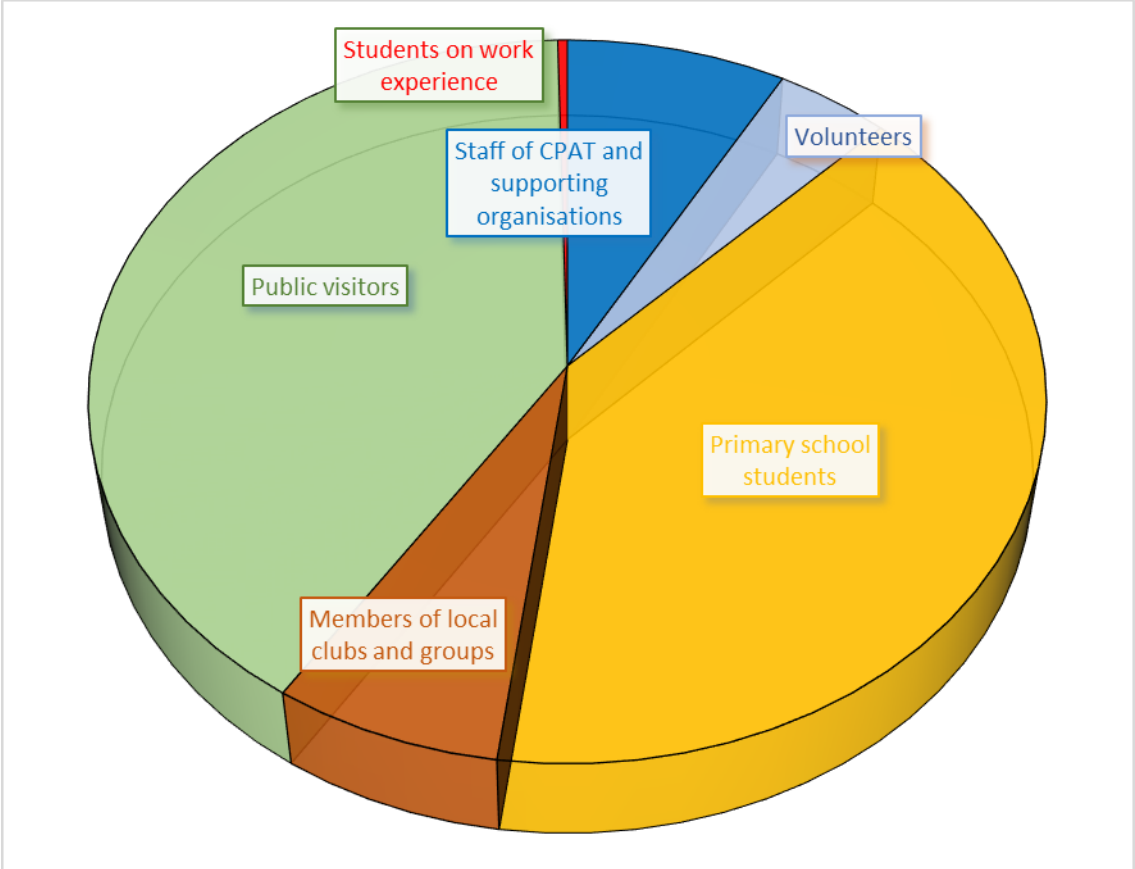
83	Copper Alloy Silver plated	Domestic	Post Medieval	Copper alloy spoon, silver / nickel plated. Bowl 60mm / 45mm
89	iron	Unknown	Unknown	long iron spike
90	Iron	Unknown	Unknown	cylindrical iron bar 36mm long 12mm diameter
92	lead	industrial	Unknown	lead off-cast
15	lead	industrial	Unknown	lead off-cast
16	Copper	Domestic	Post Medieval	small 18mm copper button with 4 eyelets (worn writing on top side and under side)
23	lead	Unknown	Unknown	worked lead
43	ceramic pb glaze	industrial	Unknown / Roman?	high fired ceramic with lead glazing
51	Copper Alloy	Unknown	Unknown	copper pin head
81	lead	industrial	Unknown	lead off-cast
82	lead	industrial	Unknown	lead off-cast

Appendix 3: Public engagement

During the time CPAT staff spent in Oakenholt, over 300 people joined in with activities and events that were offered to facilitate local participation; these included fieldwork, educational workshops, site visits and an interactive display of the Roman artefacts discovered in previous excavations. A breakdown of the participants is shown in the following table.

Staff of CPAT	6
Staff from Earthworks Archaeology	1
Staff from Flintshire Museums	2
Students on Work Experience	1
Volunteers	12
Teachers and school staff	14
Primary school students	112
Members of local clubs (1st Flintshire Cubs, Young Archaeologists Club)	20
Members of the public visiting the excavation site and/or the bowling club exhibition and display	114
Total	**282**
Total excluding staff of CPAT and supporting organisations	**259**

This information is shown graphically in the chart below.



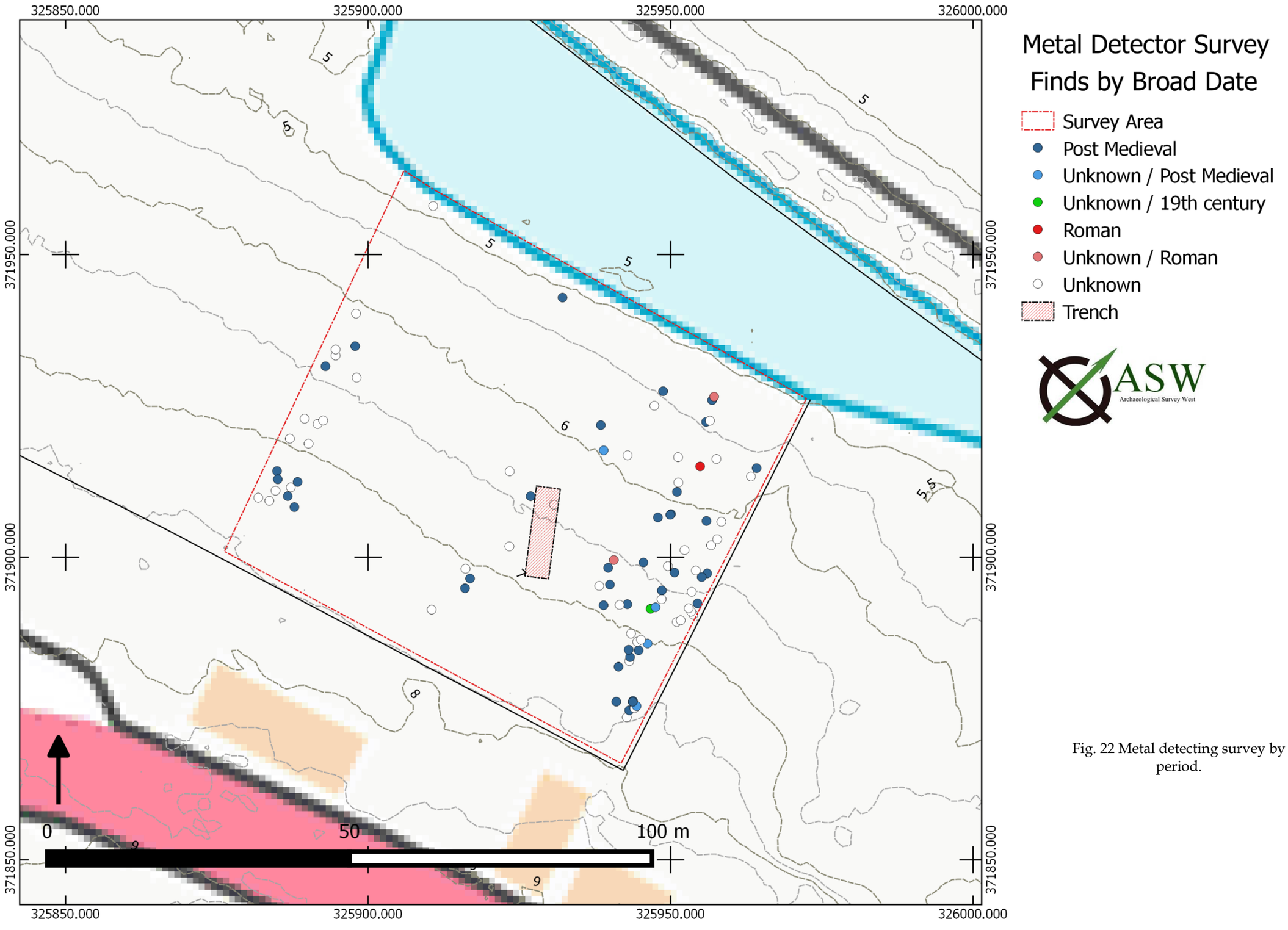


Fig. 22 Metal detecting survey by period.

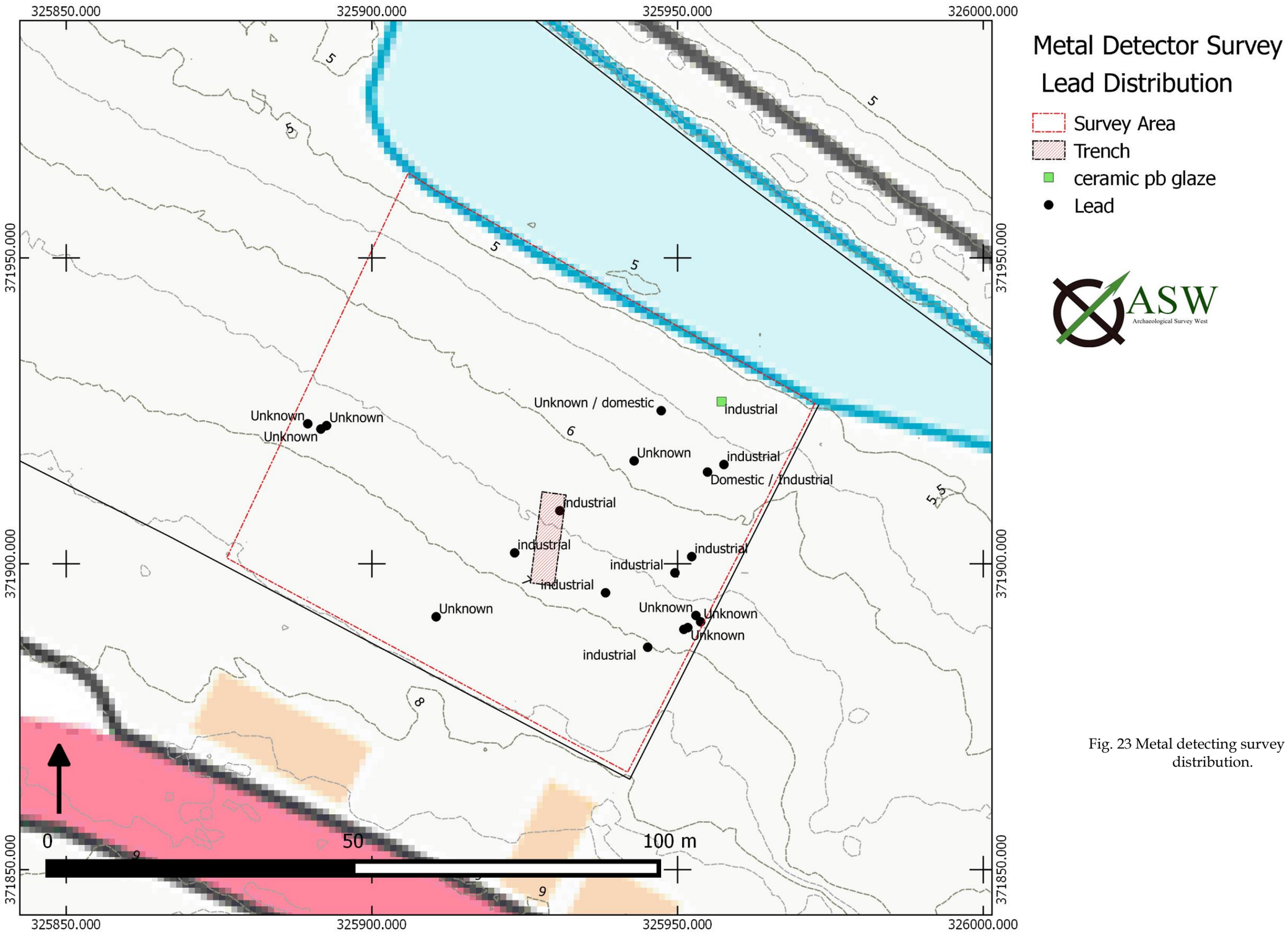


Fig. 23 Metal detecting survey by lead distribution.

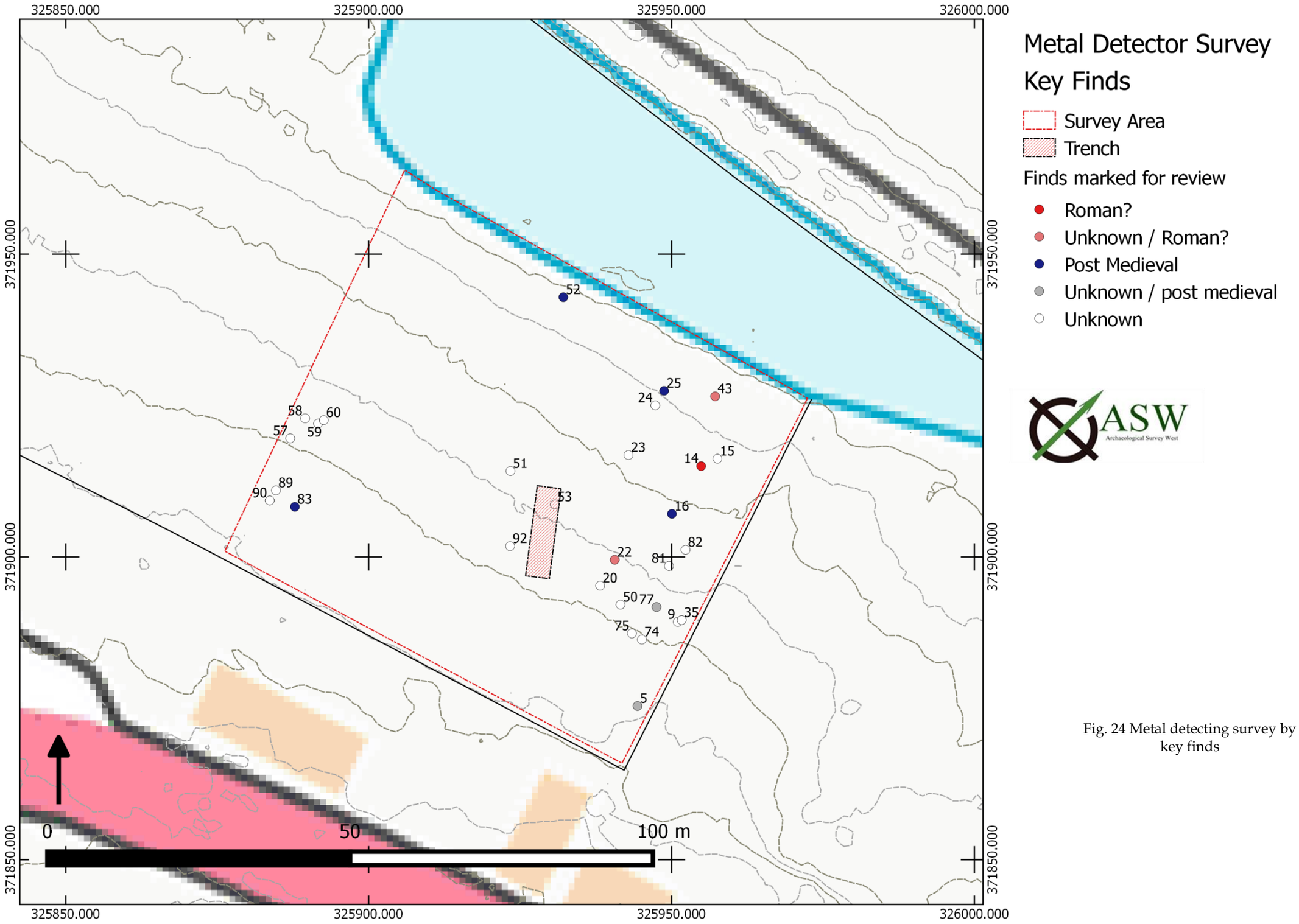


Fig. 24 Metal detecting survey by key finds

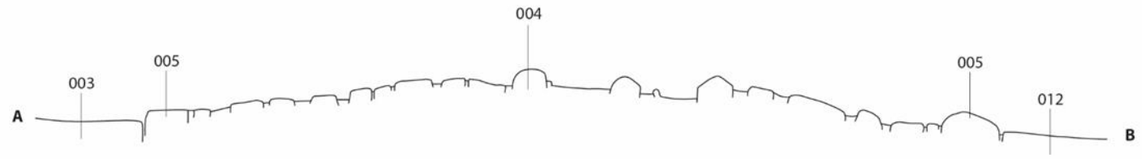
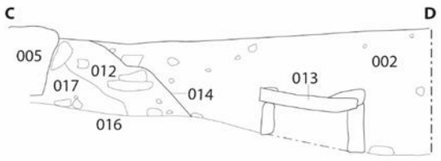
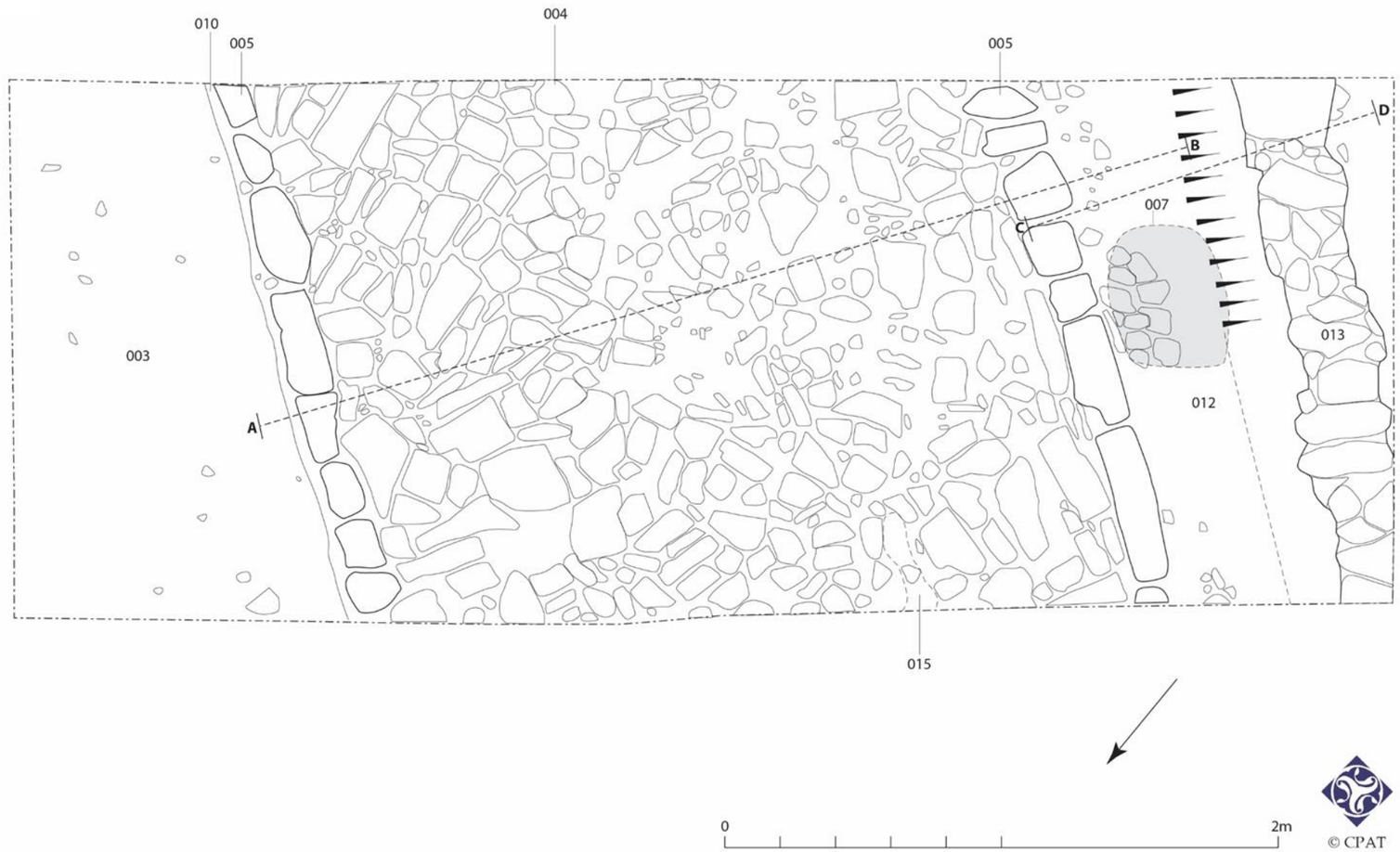


Fig 25 Grenter's 1993 excavation. West facing sections across the possible Roman road and plan.





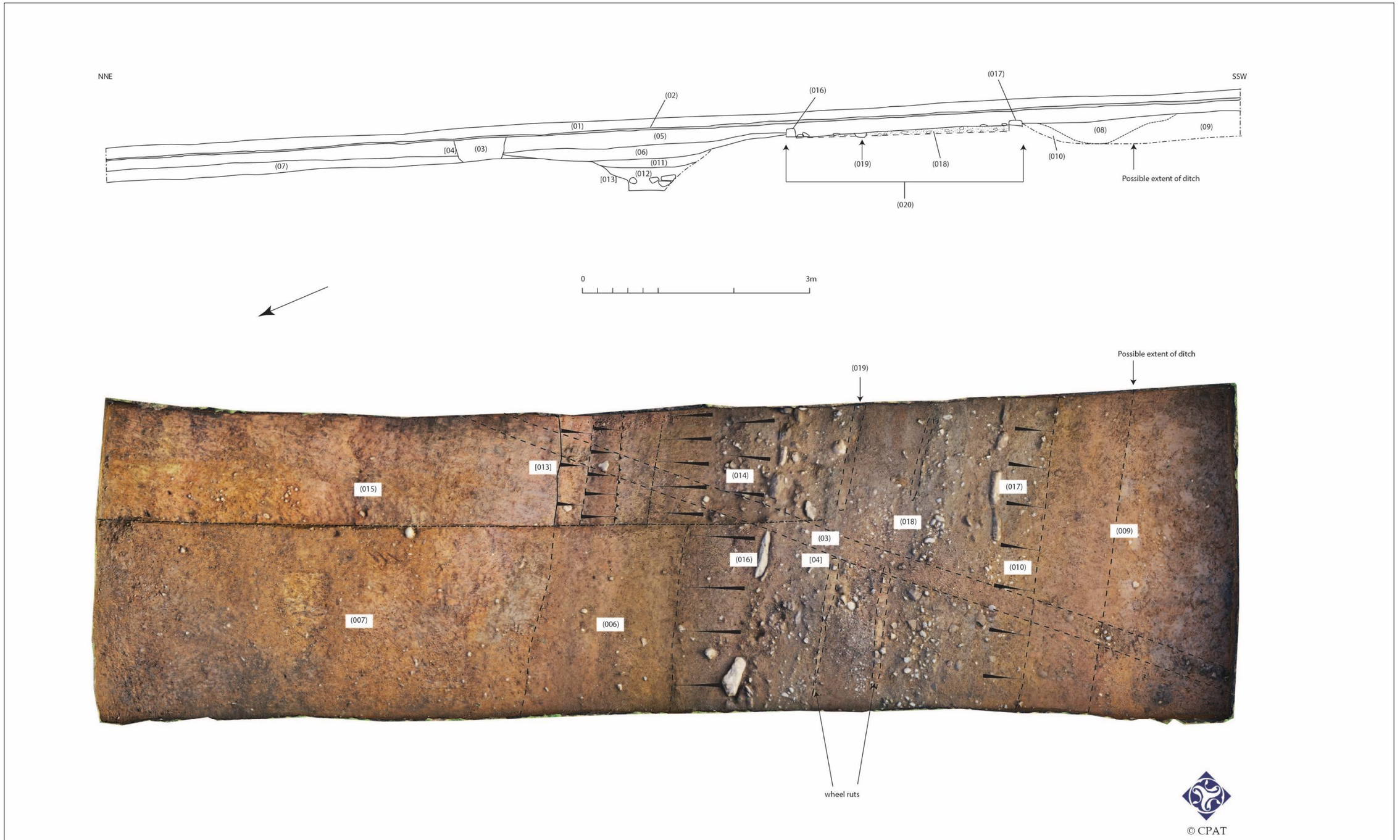


Fig. 26 North-West-West-Facing section and photogrammetry plan of Roman road, 2017 excavation.