cambridgeshire archaeology
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CAM ARC Report Number 909

Roman Settlement at Grendon Underwood, The Hardwick to Marsh Gibbon Gas Pipeline, Buckinghamshire

Archaeological Evaluation

Chris Thatcher

December 2006

Cambridgeshire County Council
Environment & Community Services

Commissioned by Southern Gas Networks (SGN)

Cover Images

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Archaeological Evaluation

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Site Code: XOX MUL 06
Date of works: 4th September – 11th October 2006
Grid Ref: SP 797 195 to SP 626 238

Editor: Elizabeth Shepherd Popescu BA PhD MIFA
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Non-technical Summary

An Archaeological evaluation was undertaken along the proposed route of the gas pipeline between Hardwick and Marsh Gibbon (SP 797 195 to SP 626 238) between 04/08/06 and 11/10/06.

The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990).

The Archaeological Evaluation recorded archaeological remains in Area F that attested to probable Roman settlement in the vicinity. This included possible structures and domestic settlement enclosures and also, further to the west, the site of industrial activity, namely iron smelting, dated to the same period.

Towards the east of the area evidence for structural remains in the form of a line of postholes/postpads, sealed by a possible demolition layer, which contained significant quantities of pottery and CBM were recorded. A mettled surface recorded adjacent to these structural remains may have formed part of a courtyard/external surface associated with the building.

A number of other features synonymous with occupation and settlement were also in evidence. In the form of banked ditches and a number of possible rubbish pits that may have been associated with the structural remains to the west.

Large quantities of iron slag, typical of the bloomery iron smelting process, were also recovered from features recorded in Area F. The concentration of slag was indicative of the presence of metal working in the vicinity and it is plausible that the features from which it was derived demarcated enclosures where such activities took place.

The close proximity of Roman Akeman Street to the south may well have facilitated this activity, for which a readily available supply of iron ore would have been required.

The remaining areas cited for disturbance by the pipe route had a much lower incidence of archaeological features typical of low density rural settlement.

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1 Introduction

An Archaeological evaluation was undertaken along the proposed route of the gas pipeline between Hardwick and Marsh Gibbon (SP 797 195 to SP 626 238) between 04/08/06 and 11/10/06. The pipeline passed from Buckinghamshire into Oxfordshire with Trench 53 lying in Oxfordshire. Cambridgeshire County Council Archaeological Field Unit (CAM ARC) undertook the work on behalf of the client, Southern Gas Networks (SGN).

This archaeological evaluation was undertaken in accordance with a Brief issued by David Radford of the Buckinghamshire County Archaeology Service (2006), supplemented by a Specification prepared by Cambridgeshire County Council Archaeological Field Unit (CAM ARC).

The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990). The results will enable decisions to be made by Buckinghamshire County Archaeology Service, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found and SGN to mitigate the effects of the proposed pipeline on the archaeological remains.

The site archive is currently held by CAM ARC and will be deposited with the appropriate county stores in due course.

2 Geology and Topography

The site overlay Mudstone of the Ampthill Clay and West Walton and Oxford Clay formations interspersed with areas of clay alluvium that in turn overlay gravels.

3 Archaeological and Historical Background

The archaeological and historical background of the proposed pipeline route was documented in an Archaeological Desk Based Assessment (DBA) conducted by Cotswold Archaeology (2006) this was in accordance with the requirements laid out in the Southern Gas Networks *Generic Archaeological Brief* and the *Archaeological Project Brief for Desk-Based* Assessment prepared by Buckinghamshire County Archaeological Service. It was guided by *Standard and Guidance for Desk-Based Assessments* issued by the Institute of Field Archaeologists (IFA 1999), and *Environmental Impact Assessment: A Guide to Procedures* (DETR/National Assembly for Wales 2000).

The archaeological and historical background outlined below is drawn from the Desk Based Assessment (Cotswold Archaeology 2006).

3.1 Prehistoric

No Palaeolithic material or geological deposits, such as river terrace gravels, thought likely to yield finds of this date were identified along the route corridor.

The evidence for Mesolithic or Neolithic activity along the route corridor amounted to a number of isolated finds recovered during archaeological observations of the construction of a gas pipeline west from Hardwick in 1976/77 (Feeder No. 7). These comprised a single re-touched flint blade, of either Mesolithic or Neolithic date, recovered from the site of a later Roman settlement, a scatter of flints and a scraper recorded close to the AGI at Hardwick which were dated to the Neolithic or Bronze Age.

3.2 Iron Age

The afore-mentioned archaeological observations also recorded Early Iron Age pottery at two probable Roman settlement sites within the route corridor; these were located to the north and west of the proposed route, around 800 m to the south-east of Pitchcott and also north of Blackgrove Farm. Within the cut of the pipe trench southeast of Pitchcott a pit was recorded that contained pottery dated to the early Iron Age and Roman period. The Roman settlement site north of Blackgrove Farm also yielded a small amount of early Iron Age pottery.

The presence of Iron Age pottery does suggest that settlement in the area predated the Roman occupation, however there is insufficient evidence to conclude whether or not the occupation of these sites, from one period to another, was continuous.

Beyond the limit of the pipeline route, approximately 1km north of Westcott, Middle Iron Age pottery and animal bone was recorded in a humic deposit sealed by a metre of alluvial clay. Pollen analysis showed that the surrounding claylands were farmed extensively at the time the deposit was formed, with a radiocarbon date of 330 ± 80 BC.

Furthermore, fieldwalking along the pipe route southwest of Quainton recovered Iron Age pottery in association with flint flakes, fired clay fragments and slag. A number of ditches and enclosures of possible Late Prehistoric provenance were also identified by geophysical survey to the southeast of Grendon Underwood.

3.3 Roman

The route corridor intersected briefly with the east-west course of Roman Akeman Street, which connected Alchester, to the west, with

Verulamium (St Albans) to the east, approximately half way along its length at Kingswood.

Two Roman roads passed through the route corridor, the easternmost of these, the Viatores Route, ran north from Dorchester-On-Thames, crossed Akeman Street at Fleet Marston and continued north-east to Watling Street. Its projected course followed two field boundaries within the route corridor. Although no associated earthworks were visible in the AFRS or aerial photographic survey the second road was recorded during the pipe trench excavations of 1976/77 which lay to the north of the proposed pipeline route; this comprised compacted stones and flint gravel and linked Fleet Marston to Stonehill.

Within the pipe route corridor the area around the Roman roads produced a large number of Roman finds, most of which comprised pottery. The construction of the No.7 Feeder revealed cut features of Roman date. A number of other potential settlement sites were also identified, for instance, a pit and ditch with Iron Age and Roman pottery recorded 360m north of the proposed route were thought to represent a possible settlement site whilst 500m south of the proposed route, high quantities of ceramic building material were recorded that were thought to indicate the site of a putative Roman villa.

A potential Roman roadside settlement was identified at Pitchcott 90m north of the proposed route during work on the No.7 Feeder which included a substantial pottery scatter, at least three ditches and a pit on either side of the Roman road. Evidence for metalwork along with pottery and ceramic building material recovered from two ditches 70m south of the proposed route were also thought to represent a settlement site.

To the southwest of Quainton a fieldwalking survey identified a small concentration of Roman pottery, it is possible that ditches and enclosures identified in the vicinity by the geophysical survey dated to this period.

The Desk Based Assessment provided evidence of Roman rural settlement bordering and in close proximity to the known courses of Roman roads. Furthermore, the archaeological material recorded during the construction of the No.7 Feeder pipe indicated a buried landscape of Roman fields, interspersed with small settlements.

3.4 Medieval

Hardwick, Pitchcott, Quainton, Grendon Underwood and Marsh Gibbon were all referenced in the Domesday Book of 1086 (although Pitchcott is not named directly). These settlements and their associated manors evolved through the early medieval period with each eventually forming a separate parish. The outskirts of both Grendon Underwood and Marsh Gibbon fell within the boundary of the route corridor.

Several further areas of medieval settlement were also in evidence within the route corridor. To the west of Hardwick village, adjacent to a tributary of the River Thame and 300m northeast of the proposed route, was the possible location of a medieval water mill whilst documentary sources suggest that southeast of Blackgrove Farm was the location of Blackgrove Manor; there was certainly earthwork evidence for former settlement in the vicinity in the form of house platforms. Two possible moated enclosures also lay within 500m of the pipe route; Homestead Moat, located to the south of Doddershall House, with a second, more tentative moated site situated nearby. Finally, to the south of Grendon Underwood a number of medieval house platforms were recorded that lay within 350m north of the proposed route.

Other sites of potential medieval origin included roads and trackways, and scatters of medieval pottery found during fieldwalking for the No.7 Feeder, much of this material was likely to have been derived from medieval manuring practices, which included the use of domestic refuse.

3.5 Post-Medieval

Up to 43 Post-medieval and modern sites were recorded within the Route Corridor, of these the majority were existing and former buildings, earthworks, railway lines and finds scatters. It was deemed that there was a high potential for encountering further as yet unrecorded remains from these periods within the Route Corridor.

4 Survey Procedures

The objective of the archaeological evaluation was to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area.

The Brief required that a total of 53 trenches be excavated. Of these 51 were 30m in length x 2m in width and 2 were 15m in length x 2m in width. The trench locations were determined by the DBA and results of the Geophysical Survey. A total of 12 distinct areas (Areas A-L) were targeted between Hardwick and Marsh Gibbon. Area A was the furthest east at Hardwick, with Area L at the westernmost point near Marsh Gibbon.

As a result of archaeological features recorded in a number of the trenches, predominantly in Area F, a total of 9 contingency trenches were excavated. These were all 30m in length x 2m in width with the exception of trench 54 which was excavated in Area A and measured 15m in length x 2m wide and Trench 57 which was 'T' shaped and measured 30m x 2m and 20m x 2m.

The trenches were located by a surveyor from Mouchel Parkman using co-ordinates provided by Southern Gas Networks. Subsequently the depths of deposits were recorded at either end of each trench and using the spot heights obtained from the surveyor these were converted into metres above Ordnance Datum (mOD). The contingency trenches were located in consultation with the Archaeological Officer for Buckinghamshire County Archaeological Service.

Machine excavation was carried out under constant archaeological supervision with a wheeled 360° excavator using a toothless ditching bucket.

Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those that were obviously modern.

All archaeological features and deposits were recorded using CAM ARC's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.

A total of 11 environmental samples were taken from archaeological features in Areas C, D and F in order to provide an indication of the level of survival of charred grain and other ecofacts.

The weather conditions on site during the course of the evaluation were mainly bright and dry although there were periods of fairly heavy and sustained rainfall during the excavation and recording of the contingency trenches in Area F in the latter stages of the fieldwork.

The methodologies described above enabled the project to be completed satisfactorily.

5 Results

5.1 Area A

A total of ten targeted trenches and 1 contingency trench were excavated in Area A which was situated approximately 1km to the west of Hardwick (Fig. 2). Fieldwalking in this area recovered possible Neolithic and Bronze Age flints and the geophysical survey recorded a number of anomalies suggestive of a possible Iron Age/Romano-British settlement. The trenches were located accordingly to establish the validity of these results and locate any settlement features. The area encompassed a hilltop and its west facing slope towards its eastern limit and traversed a tributary of the River Thame towards the west. Trenches 1-10 were excavated east to west starting at the crest of the hill with 1-9 situated on arable land and 10 located on pasture.
A layer of ploughsoil (100, 200, 301, 400, 501 600, 700, 801, 900 & 1000) that was dark black brown in colour and composed of clay silt sealed the area. Immediately underlying this deposit was a subsoil layer (101, 201, 301, 401, 502/3/4, 601, 701, 802, 901/2/3 & 1001) composed of orange brown silt clay. The natural deposits recorded in this area were grey brown clay with occasional sand and gravel lenses throughout.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
1	100	0.30m east 0.34m west	101	0.25m east 0.20m west	0.55m east 0.54m west
2	200	0.28m east 0.36m west	201	0.30m east 0.20m west	0.58m east 0.56m west
3	301	0.22m east 0.22m west	302	0.24m east 0.27m west	0.46m east 0.49m west
4	400	0.10m east 0.15m west	401	0.50m east 0.70m west	0.60m east 0.85m west
5	501	0.20m east 0.20m west	502/3/4	0.45m east 0.27m west	0.65m east 0.47m west
6	600	0.19m east 0.20m west	601	0.15m east 0.19m west	0.34m east 0.39m west
7	700	0.19m east 0.10m west	701	0.35m east 0.65m west	0.54m east 0.75m west
8	801	0.26m east 0.30m west	802	0.27m east 0.60m west	0.53m east 0.90m west
9	900	0.21m south 0.31m north	901/2/3	0.70m south 0.73m north	0.91m south 1.04m north
10	1000	0.42m east 0.27m west	1001	0.43m east 0.52m west	0.85m east 0.79m west
54	5400	0.25m east 0.35m west	5401	0.22m east 0.25m west	0.47m east 0.60m west

Table 1: Depths of deposits across Area A

5.1.1 *Trench 1*

Trench 1 was orientated east to west and was 30m long, 2m wide and up to 0.55m deep. A shallow feature (**104**) was recorded protruding into the trench from its southern edge, 9m from its eastern limit. The feature was cut from the top of the subsoil and in plan appeared to be sub circular (Fig. 3). No finds were recovered from the single fill of the feature (103). The feature was not exposed in its entirety so its function was impossible to discern with any certainty but the fact that it was cut from high up in the subsoil and contained no finds suggested that it was comparatively recent and possibly a tree throw.

5.1.1 *Trench 2*

Trench 2 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.58m deep. A shallow linear feature (**203**) aligned northeast to southwest was recorded 13m from the trenches eastern limit (Fig. 3). The ditch was 0.65m wide x 0.35m deep and was filled by a single grey brown silt clay deposit (202) that contained sherds of Roman pottery and animal bone. A modern land drain was recorded 1m to the east of the ditch on a similar alignment.

5.1.2 *Trench 3*

Trench 3 was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.49m deep. No archaeological features were present.

5.1.3 *Trench 4*

Trench 4 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.85m deep. A modern field drain was recorded on a northeast to southwest alignment in the northern half of the trench. No archaeological features were present.

5.1.5 *Trench 5*

Trench 5 was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.65m deep. Three furrows were recorded on a northeast to southwest alignment along with a modern field drain aligned northwest to southeast. No archaeological features were present.

5.1.6 *Trench 6*

Trench 6 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.39m deep. No archaeological features were present.

5.1.7 Trench 7

Trench 7 was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.75m deep. A modern field drain was recorded on a north to south alignment 12m from the trenches western limit. No archaeological features were present.

5.1.8 Trench 8

Trench 8 was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.90m deep. No archaeological features were present.

5.1.9 Trench 9

Trench 9 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.91m deep. A modern field drain was recorded on a northwest to southeast alignment towards the north of the trench. No archaeological features were present.

5.1.10 Trench 10

Trench 3 was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.85m deep. Two modern field drains were recorded in the northern part of the trench aligned north to south and northwest to southeast. No archaeological features were present.

5.2 Contingency Trench

5.2.1 Trench 54

Trench 54 was excavated to the west of Trench 2 in order to define the limit of any archaeological features associated with the shallow ditch recorded in that trench, it was orientated east northeast to west southwest and was 15m long, 2m wide and up to 0.60m deep. No archaeological features were present.

5.3 Area B

Two targeted trenches were excavated in Area B. These were situated either side of a modern field boundary approximately 1km north of Upper Blackgrove Farm. The trenches were located in order to establish whether or not the north to south aligned hedge and ditch followed the route of a putative Roman road.

A layer of topsoil (1100, 1200,) that was dark black brown in colour and composed of clay silt sealed the area. Immediately underlying this deposit was a subsoil layer (1101/2, 1201,) composed of orange grey silt clay. The natural deposit recorded in this area was a light grey brown clay.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
11	1100	0.32m east 0.23m west	1101/2	0.48m east 0.40m west	0.80m east 0.63m west
12	1200	0.40m east 0.40m west	1201	0.20m east 0.23m west	0.60m east 0.63m west

Table 2: Depths of deposits across Area B

5.3.1 Trench 11

Trench 11 lay immediately to the east of the field boundary, it was orientated east to west and was 15m long, 2m wide and up to 0.80m deep. No archaeological features were present.

5.3.2 Trench 12

Trench 12, which was orientated east to west and lay immediately to the west of the field boundary, was 15m long, 2m wide and up to 0.63m deep. No archaeological features were present.

5.4 Area C

A total of six targeted trenches and 1 contingency trench were excavated in Area C, a parcel of land at the base of Pitchcott Hill whose western edge encroached on the possible course of the Stonehill to Fleet Marston Roman road. The Geophysical survey revealed a series of anomalies in this area whose layout were typical of Iron Age/Romano-British enclosure systems. The pipe route was adjusted accordingly in order to avoid this concentration of features and the trenches (13-18) located so as to establish whether the new route disturbed any archaeology beyond the limit of the original line. Trenches 13-18 all lay on pasture and were excavated east to west, Trench 13 was separated from the remaining trenches by a brook that demarcated a field boundary.

A layer of topsoil (1300, 1400, 1500, 1600, 1700, 1800 & 5500) composed of dark brown clay silt sealed the area. Immediately underlying this deposit was a subsoil layer (1301, 1401, 1501, 1601, 1701, 1801 & 5501) that was mid brown silt clay in composition. The natural deposit recorded in this area was grey brown clay with chalk inclusions throughout.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
13	1300	0.25m north 0.24m south	1301	0.23m north 0.24m south	0.48m north 0.48m south
14	1400	0.30m east 0.25m west	1401	0.30m east 0.35m west	0.60m east 0.60m west
15	1500	0.22m east 0.22m west	1501	0.24m east 0.27m west	0.46m east 0.49m west
16	1600	0.29m east 0.25m west	1601	0.10m east 0.20m west	0.39m east 0.45m west
17	1700	0.37m east 0.25m west	1701	0.31m east 0.15m west	0.68m east 0.40m west
18	1800	0.25m east 0.22m west	1801	0.31m east 0.25m west	0.56m east 0.47m west
55	5500	0.20m east 0.16m west	5501	0.35m east 0.18m west	0.55m east 0.34m west

Table 3: Depths of deposits across Area C

5.4.1 Trench 13

Trench 13 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.48m deep. No archaeological features were present.

5.4.2 Trench 14

Trench 14 lay towards the east of Area C, it was orientated northeast to southwest and was 30m long, 2m wide and up to 0.60m deep. Two archaeological features were recorded within the trench (Fig. 6).

Approximately 8m from the western limit of the trench a shallow gully (**1403**) was excavated. This feature (Fig. 6) was aligned northeast to southwest and was no more than 0.06m deep, its single dark grey brown fill (402) contained no finds and it was subsequently recorded as a possible furrow.

A further 6m to the east was a second linear feature 3.22m wide and aligned northwest to southeast. Upon excavation this was revealed to be 0.96m deep and contained 4 fills (1404, 1406, 1407 & 1408) (Fig. 6). No finds were recovered from the fills, which appeared to be waterborne deposits probably lain down as a result of natural weathering and deposition rather than deliberate backfilling.

5.4.3 Trench 15

Trench 15 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.49m deep. No archaeological features were present.

5.4.4 Trench 16

Trench 16 was orientated southeast to northwest and was 30m long, 2m wide and up to 0.45m deep. No archaeological features were present.

5.4.5 Trench 17

Trench 17 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.68m deep. No archaeological features were present.

5.4.6 Trench 18

Trench 18 lay immediately to the east of the field boundary, it was orientated east to southwest and was 30m long, 2m wide and up to 0.56m deep. A modern intrusion, which appeared to be a dump deposit, was recorded in the western end of the trench that contained plastic, brick and metal waste. No Archaeological features were present.

5.5 Contingency Trench

5.5.1 Trench 55

Trench 55 was excavated to the west of Trench 17, it was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.55m deep.

A very shallow linear feature (**5503**), 0.80m wide x 0.15m deep, was recorded on a northeast to southwest alignment within the trench. No

finds were recovered from the single dark grey brown fill of the feature (5502).

5.6 Area D

Three targeted trenches were excavated in Area D which was situated approximately 1km southwest of Quainton and lay at the crest of a hill on paddocks associated with a stud farm (Fig.7).

A layer of topsoil (1900, 2000, & 2100) composed of dark brown clay silt sealed the area. Immediately underlying this deposit was a subsoil layer (1901, 2001 & 2101) that was mid brown silt clay in composition. The natural deposit recorded in this area was grey brown clay with chalk inclusions throughout.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
19	1900	0.17m east 0.27m west	1901	0.08m east 0.33m west	0.25m east 0.60m west
20	2000	0.14m east 0.19m west	2001	0.10m east 0.11m west	0.24m east 0.30m west
21	2100	0.15m east 0.20m west	2101	0.10m east 0.30m west	0.25m east 0.50m west
22	2200	0.17m east 0.13m west	2201	0.11m east 0.09m west	0.28m east 0.22m west
23	2300	0.19m east 0.19m west	2301	0.14m east 0.12m west	0.33m east 0.31m west

Table 4: Depths of deposits across Area D

5.6.1 Trench 19

Trench 19 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.60m deep. A single archaeological feature was recorded approximately 5m from the eastern edge of the trench (Fig. 8). Ditch **1904** was aligned north to south, 0.70m wide and upto 0.50m deep. Two distinct deposits filled the feature: the tertiary deposit, 1902, comprised a black grey clay from which a number of sherds of pottery and bone were recovered. Underlying 1902 was the primary deposit a compact silt clay of grey brown colouration (1903) from which fragments of animal bone and early Romano-British pottery were collected. The homogeneous nature of both fills implied that they were derived from natural silting and weathering processes.

5.6.2 Trench 20

Trench 20 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.30m deep. No archaeological features were present.

5.6.3 *Trench 21*

Trench 15 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.50m deep. No archaeological features were present.

5.6.3 *Trench 22*

Trench 22 was aligned east southeast to west northwest and was 30m long, 2m wide and up to 0.28m deep. No archaeological features were present.

5.6.4 *Trench 23*

Trench 22 was aligned east southeast to west northwest and was 30m long, 2m wide and up to 0.33m deep. No archaeological features were present.

5.7 Area E

Area E was situated approximately 1.5km southwest of Quainton, five targeted trenches were excavated in the area as a result of geophysical anomalies and fieldwalking finds which suggested the presence of Iron Age/Romano-British settlement enclosures within the vicinity. The trenches were located accordingly to establish the validity of these results and locate any settlement features. Trenches 24-28 were excavated east to west and situated in an arable field just below the top of a gentle south facing slope (Fig. 9).

A layer of ploughsoil (2400, 2500, 2600, 2700 & 2801) that was dark grey brown in colour and composed of silt clay sealed the area. Immediately underlying this deposit was a subsoil layer (2401, 2501, 2601, 2701 & 2802) composed of orange brown silt clay. The natural deposits recorded in this area were grey brown clay punctuated throughout by gravel and silt sand patches.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
24	2400	0.21m north 0.40m south	2401	0.25m north 0.36m south	0.46m north 0.76m south
25	2500	0.20m north 0.17m south	2501	0.22m north 0.21m south	0.42m north 0.38m south
26	2600	0.16m east 0.28m west	2601	0.21m east 0.26m west	0.39m east 0.54m west
27	2700	0.25m north 0.25m south	2701	0.41m north 0.23m south	0.66m north 0.48m south
28	2801	0.19m north 0.24m south	2802	0.30m north 0.19m south	0.49m north 0.43m south

Table 5: Depths of deposits across Area E

5.7.1 Trench 24

Trench 24 was orientated north northwest to south southeast and was 30m long, 2m wide and up to 0.76m deep. Two archaeological features were recorded within the trench.

At the southernmost limit of the trench an apparently linear feature was excavated (**2405**). The full width of the ditch was not exposed but its projected alignment was northwest to southeast. The feature was fairly shallow with a gently sloped profile up to 0.27m deep. A single mid grey brown sandy clay fill (2404) was recorded that contained animal bone and sherds of Roman pottery.

The terminus of a second ditch was recorded 7m from the northwestern end of the trench (Fig. 10). The feature was 1.16m in width and protruded 0.90m into the trench from its western edge before terminating. Fragments of animal bone were recovered from the dark grey brown silt clay deposit that filed the ditch (2403).

5.7.2 Trench 25

Trench 25 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.42m deep. No archaeological features were present.

5.7.3 Trench 26

Trench 26 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.54m deep. No archaeological features were present.

5.7.4 Trench 27

Trench 27 was orientated southwest to northeast and was 30m long, 2m wide and up to 0.66m deep. A ditch (**2703**, **2705**), 0.90m wide x 0.27m deep, was recorded on a northeast to southwest alignment, slightly divergent from the line of the trench (Fig. 10). This feature appeared 4m from the trenches southeast corner and continued to within 9m of its northwest edge, where it terminated. Two sections were excavated along the ditches length, one at its terminus. These revealed a single mid grey brown silt clay fill (2702, 2704) from which no finds were recovered.

5.7.5 Trench 28

Trench 28 was orientated north to south and was 30m long, 2m wide and up to 0.49m deep. Two shallow ditches were recorded within the trench (Fig. 10).

Ditch **2805**, 1.03m wide x 0.24m deep, was aligned east to west just to the north of the centre of the trench. A single fill (2804) was recorded in the ditch which comprised mid grey brown silt clay and contained no finds. The ditch was intersected to the west by (**2808**) a ditch of similar proportions aligned northeast to southwest (Fig.10). The fill recorded for this feature (2807) also yielded no finds and was very similar in composition and colouration to 2804, this made it impossible to determine the stratigraphic relationship between the two ditches; it is equally possible that they represented one feature, for instance the corner of an enclosure.

5.8 Area F

A total of seven targeted trenches and a further seven contingency trenches were excavated in Area F, which stretched across five pastured fields approximately 0.5km to the southeast of Grendon Underwood.

The geophysical survey identified a significant concentration of probable archaeological remains along the original pipe route as it traversed Area F that included settlement enclosures provisionally dated to the Iron Age/Romano-British period. As a result of this an alternative route that would skirt around to the south of these features was posited and the trenches in this area were located in order to investigate further anomalies recorded in its projected path. The trenches were situated within a gently undulating landscape with Trenches 29 and 30 occupying higher ground to the east of the area (Fig. 11).

A layer of topsoil (2900, 3000, 3100, 3200, 3300, 3400, 3500, 5600, 5700, 5800, 5900, 6000, 6100 & 6200) that was dark black brown in colour and composed of clay silt sealed the area. Immediately underlying this deposit was a subsoil layer (2901, 3001, 3101, 3201, 3301, 3401, 3501, 5601, 5701, 5801, 5901, 6001, 6101 & 6201) composed of orange brown silt clay. The natural deposits recorded in this area were grey brown clay with occasional sand and gravel lenses throughout.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
29	2900	0.33m east 0.30m west	2901	0.04m north 0.10m south	0.37m north 0.40m south
30	3000	0.28m east 0.30m west	3001/2	0.30m east 0.30m west	0.58m east 0.66m west
31	3100	0.36m east 0.30m west	3101	0.15m east 0.31m west	0.51m east 0.61m west
32	3200	0.30m east 0.26m west	3201	0.10m east 0.05m west	0.40m east 0.31m west
33	3300	0.30m east 0.36m west	3301	0.11m east 0.13m west	0.41m east 0.49m west
34	3400	0.18m east 0.22m west	3401	0.22m east 0.20m west	0.40m east 0.42m west
35	3500	0.22m east 0.15m west	3503	0.12m east 0.13m west	0.34m east 0.28m west
56	5600	0.26m east 0.29m west	5601	0.12m east 0.11m west	0.38m east 0.40m west
57	5700	0.14m east 0.15m west	5701	0.21m east 0.23m west	0.35m east 0.38m west
58	5800	0.16m east 0.25m west	5801	0.30m north 0.26m south	0.46m north 0.51m south
59	5900	0.20m east 0.17m west	5901	0.21m east 0.30m west	0.41m east 0.47m west
60	6000	0.30m south 0.25m north	6001	0.13m south 0.16m north	0.43m south 0.41m north

61	610 0	0.33m east 0.30m west	6101	0.04m east 0.03m west	0.37m east 0.33m west
62	620 0	0.22m east 0.23m west	6201	0.04m east 0.05m west	0.26m east 0.28m west

Table 6: Depths of deposits across Area F

5.8.1 *Trench 29*

Trench 1 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.40m deep. A ditch with a pronounced V shaped profile (**2905**) and the remnants of a bank on its southern side was recorded approximately 8m from the trenches southern limit (Fig. 12).

Three fills were recorded in the ditch, which was 1.75m in width x 0.80m deep (2902, 2903 & 2904). The tertiary fill (2902) was mid grey brown silt clay from which numerous sherds of pottery and fragments of animal bone were recovered. This overlay 2903 which contained a smaller quantity of pottery and animal bone than 2902 and was dark grey brown in colour and silt clay in composition. The primary fill of the ditch (2904) was mid yellow brown clay silt and contained comparatively few sherds of pot and animal bone fragments when compared with the later deposits. A fossilised marine crocodile tooth was recovered from this fill. It is possible that this was a residual find but also that it formed part of a personal adornment (Sedgwick Museum of Earth Sciences). An environmental sample was retrieved from 2904 in order to test for any charred plant remains, upon processing it was found to contain charcoal flecking but no plant remains.
It seems likely that ditch **2905** was filled gradually after it fell into disuse as a result of natural silting and weathering processes for the fills were without exception homogenous in colour and composition.

Along the southern edge of the ditch the remnants of a bank up to 2.20m in width at base were recorded (2906). A number of sherds of pottery were recovered from this deposit, which was probably derived from material extracted during the excavation of the ditch itself.

5.8.2 *Trench 30*

Trench 30 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.66m deep. Immediately underlying the topsoil at the northern end of the trench was a dark black brown spread composed of a clay silt up to 0.15m thick (3001) through which three 2m x 1m slots were excavated (Fig. 13 & 14).

Spread throughout this layer was a significant quantity of pottery spot dated to the Late Romano-British period, Ceramic Building Material (CBM) and bone, including a fragment of human cranium. A number of nails and large blocks of sandstone were also recovered from this layer, which extended approximately 18m along the length of the

trench. The slots exposed a layer of mid green brown fine silt clay (3002) underlying 3001 that contained a similar finds assemblage to the overlying layer and was deposited immediately atop the natural (Fig. 14). The spot dates for 3002 suggested an early Roman provenance (Slowikowski, Appendix 6)

The animal bone assemblage from 3001 consisted primarily of fragments of adult cattle lower limb bones and other post-cranial elements of which 50% showed evidence of butchery. A smaller number of butchered horse, pig and sheep/goat remains were also recovered (Faine 2006).

Two coins of Late Roman date were recovered from 3001. One was dated to the House of Valentinian, AD 364-378, whilst the second was either slightly earlier in date AD 353/4-357 or from the same period.

At the eastern most extremity of Trench 30 a mettled surface (3011) was exposed beneath 3001. This was constructed of cobbles that appeared to have been pressed into the surface of the natural clay and abutted the limit of layer 3002 approximately 4m from the trenches eastern end (Fig. 13).

Protruding into the trench at this end was a shallow feature 0.80m in width x 0.18m deep (**3010**). It was hemispherical in plan with an irregular U shaped profile and might either have been a pit or the terminus of a shallow ditch; since the full extent of the feature was not exposed it was impossible to determine its overall form or function (Fig. 14). The fill (3009) was very similar in colour and composition to layer 3001 but no finds were recovered from it. There were however two large stones in the centre of the fill which might indicate that the feature was in fact a posthole with the stones representing the remnants of packing material. The similarity between 3009 and 3001 may also indicate that the feature falling into disuse was contemporaneous with the deposition of layer 3001.

Several post holes or post pads, which appeared to form a line extending across the centre of the trench in a northeast to southwest direction, were also recorded. The distance between each putative feature was very regular being approximately 3m. The westernmost of these (**3008**) lay close to the limit of layer 3001, close to the trenches northern edge. Upon investigation it was found to be 0.53m in width x 0.17m deep with a sub-circular shape in plan and regular u shaped profile. No post pipe or packing were in evidence within the fill of the posthole, a mid grey brown silt clay (3007), nor were any finds recovered (Fig. 14).

The remaining postholes/postpads were identified by concentrations of stone and possible packing material lying atop 3001 and in one case a circular anomaly that was slightly lighter and more silty in compostion than the surrounding layer (3001).

Lying approximately 3m to the west of layer 3001 was a shallow flat based pit (**3006**) 1m wide x 0.12m deep. The full extent of the feature was not exposed within the trench but it appeared to be sub-circular in shape (Fig. 13). The profile of the cut was not overly pronounced and its fill (3005) was very similar in colour and composition to 3001, which implied that it fell into disuse around the time of the deposition of the afore-mentioned layer (Fig. 14).

The final feature recorded in Trench 30 was a ditch aligned northwest to southeast that was recorded towards its westernmost end (**3004**). It had a relatively step sided u shaped profile and was 0.92m wide x 0.30m deep (Fig. 14). Fragments of pottery and animal bone were recovered from its single fill (3003), a homogeneous mid brown silt clay that was attributed to silting and weathering processes as a result of disuse rather than deliberate backfill.

5.8.3 Trench 31

Trench 31 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.61m deep. A modern field drain was recorded on an east to west alignment towards the northern end of the trench. No archaeological features were present.

5.8.4 Trench 32

Trench 32 was orientated east to west and was 30m long, 2m wide and up to 0.40m deep. No archaeological features were present.

5.8.5 Trench 33

Trench 33 was orientated east northeast to west southwest and was 30m long, 2m wide and up to 0.49m deep (Fig. 15). A large quantity of slag was recovered from the features excavated within the trench. A curvilinear ditch (**3312**) was recorded approximately 6m from its western end aligned so that the features recorded to its west (**3310**, **3307** & **3305**) would be encompassed within its boundary. In profile **3312** was V shaped and up to 0.67m wide x 0.37m deep (Fig. 16). Two fills were recorded within the ditch. 3315, the dark black brown silt clay tertiary fill, was found to contain large quantities of slag whilst 3313, the primary deposit was a mid grey yellow clay silt from which a single sherd of pottery and fragments of animal bone were gleaned.

The corner of a feature (**3310**) was excavated further to the east (Fig. 15 & 16). Its full extent was not visible within the confines of the trench and the cut was irregular in profile, it did however contain significant quantities of slag within its fill; charcoal was also in evidence throughout this mottled orange brown deposit (3311), which was sampled. Lying approximately 1m to the northwest of **3310** was a shallow pit, circular (0.80m diameter) in plan and with a wide flat base (**3307**). As with the previously discussed features from this trench a

disproportionately large amount of slag was recovered from the pits single dark brown grey silt clay fill (3308). Two further features were excavated and recorded within the trench, neither of which was exposed in its entirety (**3303** & **3305**). Both were irregular shaped in plan and very shallow, no more than 0.10m deep and it is possible that these represented plough scars rather than more significant archaeological features (Fig.14).

5.8.6 Trench 34

Trench 34 was orientated east to west and was 30m long, 2m wide and up to 0.42m deep. A number of furrows aligned north to south were recorded along the length of the trench. No archaeological features were present.

5.8.7 Trench 35

Trench 35 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.34m deep. A modern intrusion that was revealed to contain modern glass and domestic detritus was recorded at the westernmost limit of the trench. No archaeological features were present.

5.9 Contingency Trenches

5.9.1 Trench 56

Trench 56 was excavated to the east of Trench 29 as a result of the boundary ditch located there (**2905**). It was orientated northeast to southwest and was 30m long, 2m wide and up to 0.40m deep (Fig. 12).

A ditch and its associated bank remnants were recorded on a northwest to southeast alignment approximately 8m from the southernmost end of the trench (**5603**). This feature was 1.70m wide and up to 0.56m deep, its profile differed from that of **2905** in that it was U shaped, with a fairly gently sloped northeast facing slope and comparatively wide flat base, rather than the pronounced V shape of ditch **2905**. A single light orange brown clay silt fill was recorded that contained sherds of pottery and animal bone fragments (5602).

The remnants of a bank, 1.40m wide at base, were recorded on the southern side of the ditch.

At the opposite end of the trench, approximately 9m from its eastern limit a large pit was excavated and recorded (**5604**). The upper fill of the pit (5606) was especially dark and charcoal rich and extended 0.60m below ground level, fragments of pottery and animal bone were recovered from this deposit which immediately overlay the primary fill (5605), a dark grey silt clay from which a large number of fragments of

pig bone were retrieved. The cut itself was very steep sided, 0.85m deep and 1.50m in diameter at the top, tapering to 0.35m in diameter at its base (Fig. 12).

5.9.2 Trench 57

Trench 57 was T shaped with a section 30m long x 2m wide aligned northwest to southeast that crossed perpendicular to the pipeline. The second section, 20m long x 2m wide, was centred on the pipe route and orientated northeast to southwest with its western end adjoining the first section at its centre point (Fig. 13).

This trench was located to the west of Trench 30 in order to establish the limit of the archaeological remains recorded there. A dark spread of material (5716) which extended 10.50m westwards from the eastern end of the trench was recorded that bore a close similarity to the layer recorded at the east end of Trench 30 (3001). 5716 was 0.10m thick and found to contain numerous pottery sherds, dated to the Romano-British period and animal bone fragments along with CBM and slag and sealed an apparently curvilinear ditch (**5712**) which contained three fills (Fig. 14). The uppermost of these was 5715, a dark orange grey silt clay no more than 0.13m thick that appeared to represent the final silting up of the depression left by the settlement of the earlier fills. Immediately underlying this was 5714, a far more extensive deposit up to 0.30m thick and which spanned the entire width of the cut. 5714 was composed of dark grey brown silt clay that contained fragments of pottery. The primary fill of the ditch (5713), a mid orange brown silt clay, was thought to have been derived from natural weathering and silting, probably during the use phase of the ditch, whilst the latter fills probably accumulated once the feature had fallen into disuse.

Protruding into the trench approximately 1m from the limit of layer 5716 was a steep sided pit (**5705**) 1.50m in diameter x 0.58m deep (Fig. 13 & 14). Three deposits were recorded filling the pit. The tertiary fill (5702) was a dark brown silt clay from which bone, Early Romano-British pottery and shell fragments were recovered. 5703 underlay 5702 and was found to be sterile and composed of mid yellow brown silt clay. It was suggested that this might represent a capping layer sealing the primary fill (5704), a dark brown grey silt clay found to contain Early Romano-British pottery and with charcoal flecking throughout.

A poorly defined linear feature was recorded at the centre point of the trench that may have been a ditch (**5707**). A single fill (5706) containing pottery, bone and slag fragments was recorded (Fig. 14).

Towards the north of Trench 57 a shallow north to south aligned ditch was recorded (**5709**). A homogeneous dark orange brown clay silt fill (5708) was recorded, this contained Late Iron Age pot sherds and animal bone and appeared to have accumulated via natural weathering

and silting processes (Fig. 14). Adjacent to the east but aligned northwest to southeast was a very shallow, ephemeral gully (**5711**) no more than 0.20m wide x 0.06m deep, no finds were recovered from its fill (5710), a mid grey brown clay silt.

5.9.3 Trench 58

Trench 55 was excavated to the east of Trench 33 it was orientated northwest southeast and was 30m long, 2m wide and up to 0.51m deep (Fig. 15).

A ditch crossed the northern end of the trench (**5805**) at an obtuse angle to its western edge, which precluded the excavation of its full width (Fig. 15). The excavated section exposed a steep, straight sided cut down to a depth of 1m which contained six fills (5806, 5807, 5808, 5809, 5810 & 5811). The tertiary fill was composed of mid grey silt clay (5811), 0.44m thick, which was sampled and found to contain pottery and bone. This overlay a dark black grey fill, up to 0.27m thick, that was flecked with charcoal but contained no finds (5810). A thin layer of blackened silt clay was recorded immediately beneath 5810 that was only 0.04m thick (5809). This sealed a dark yellow grey clay silt deposit (5808) from which sherds of Early Romano-British pottery and animal bone fragments were retrieved, which appeared to have been deposited over an extended period of time as a result of natural silting and weathering processes. A second layer of blackened, charcoal rich silt clay (5807) was investigated underlying 5808. The earliest recorded deposit in the ditch was 5806 a mid yellow grey silt clay which was probably derived from collapsed natural clay and waterborne deposition, no finds were recorded (Fig. 16).

An isolated pit/posthole was recorded approximately 4m to the south of **5805** that was 0.40m in diameter x 0.22m deep (**5803**) (Fig. 16). No evidence of packing or a post pipe was present in the fill of the feature (5802), a homogenous mid yellow grey silt clay deposit.

5.9.4 Trench 59

Trench 59 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.47m deep. No archaeological features were present.

5.9.5 Trench 60

Trench 60 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.43m deep. A series of furrows were recorded within the trench on a northwest to southeast alignment. This confirmed the results of the geophysical survey, which suggested the presence of such features. No archaeological features were present.

5.9.6 *Trench 61*

Trench 61 was excavated to the east of Trench 58, it was orientated east to west and was 30m long, 2m wide and up to 0.37m deep.

A shallow ditch (**6102**), 3.60m wide x 0.36m deep, was recorded on a northeast to southwest alignment within Trench 61. A dark grey brown deposit composed of silt clay (6103) filled the ditch, and was found to contain slag, Early Romano-British pottery sherds and fragments of animal bone.

5.9.7 *Trench 62*

Trench 62 was orientated north to south and was 30m long, 2m wide and up to 0.28m deep. No archaeological features were present.

5.10 Area G

A total of six trenches were excavated in Area G, which was located approximately 0.5km to the west of Grendon Underwood across two arable fields (Fig. 17). The trenches in this area lay in close proximity to the River Ray, a tributary of which flowed less than a kilometre away to the west, they were located evenly along the pipe route where it crossed the flood plain to investigate below any riverine alluvial deposits.

A layer of topsoil (3900, 4000 & 4100) composed of dark brown clay silt sealed the area. Immediately underlying this deposit was a waterborne subsoil layer (3901, 4001 & 4101) that was dark yellow brown clay silt in composition. The natural deposit recorded in this area was grey brown clay.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
36	3600	0.15m east 0.15m west	3601	0.10m east 0.09m south	0.25m east 0.24m west
37	3700	0.15m north 0.15m south	3701	0.05m north 0.05m south	0.20m north 0.20m south
38	3800	0.13m north 0.13m south	3801	0.04m north 0.03m south	0.17m north 0.16m south
39	3900	0.23m north 0.20m south	3901	0.30m north 0.14m south	0.53m north 0.34m south
40	4000	0.28m east 0.20m west	4001	0.34m east 0.30m west	0.62m east 0.50m west
41	4100	0.15m north 0.17m south	4101	0.44m east 0.46m west	0.59m north 0.63m south

Table 7: Depths of deposits across Area G

5.10.1 Trench 36

Trench 36 was aligned east to west and was 30m long, 2m wide and up to 0.25m deep. A single shallow ditch, 0.77m wide x 0.27m deep, was recorded 12m from the trenches western limit (**3604**). No finds were recovered from the two fills recorded in this feature (3602, 3603) and it was interpreted as a disused field boundary.

5.10.2 Trench 37

Trench 37 was aligned north to south and was 26m long, 2m wide and up to 0.20m deep. An east to west aligned ditch was recorded 6m from the northern limit of the trench (**3703**). This feature was 0.95m in width x 0.20m deep and was filled by a yellow brown silty clay deposit that contained no finds (3702).

5.10.3 Trench 38

Trench 38 was aligned northwest to southeast and was 31.5m long, 2m wide and up to 0.17m deep. No archaeological features were present.

5.10.4 Trench 39

Trench 39 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.53m deep. No archaeological features were present.

5.10.5 Trench 40

Trench 40 was orientated east to west and was 30m long, 2m wide and up to 0.62m deep. A northeast to southwest aligned ditch (**4003**), 0.50m wide x 0.30m deep, was recorded towards the eastern end of the trench (Fig. 17), it had a dark grey brown fill (4002) from which no finds were recovered.

5.10.6 Trench 41

Trench 41 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.63m deep. No archaeological features were present.

5.11 Area H & I

Area H & I was situated equidistant between Grendon Underwood and Marsh Gibbon. Four targeted trenches were excavated in the area as a result of geophysical anomalies which suggested the presence of possible settlement features within the vicinity. The trenches were located accordingly to establish the validity of these results and investigate beneath any alluvial deposits lain down by the River Ray and its tributaries which flowed close by to the south (Fig. 18). The

trenches were excavated east to west and situated on both arable land (42 & 43) and pasture (44 & 45).

A layer of ploughsoil (4200, 4300, 4400 & 4500) that was dark grey brown in colour and composed of silt clay sealed the area. Immediately underlying this deposit was a subsoil layer (4201, 4301, 4401 & 4501) composed of orange brown silt clay. The natural deposits recorded in this area were grey brown clay punctuated by occasional gravel patches.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
42	4200	0.40m north 0.40m south	4201	0.30m north 0.39m south	0.70m north 0.79m south
43	4300	0.30m east 0.39m west	4301	0.36m east 0.44m west	0.66m east 0.83m west
44	4400	0.20m east 0.20m west	4401	0.10m east 0.24m west	0.30m east 0.44m west
45	4500	0.23m east 0.20m west	4501	0.27m east 0.41m west	0.50m east 0.61m west

Table 8: Depths of deposits across Area H&I

5.11.1 Trench 42

Trench 42 was orientated north northwest to south southeast and was 30m long, 2m wide and up to 0.79m deep. No archaeological features were present.

5.11.2 Trench 43

Trench 43 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.83m deep. No archaeological features were present.

5.11.3 Trench 44

Trench 44 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.44m deep. No archaeological features were present.

5.11.4 Trench 45

Trench 45 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.61m deep. Three intercutting archaeological features were recorded within the trench (**4503, 4505** &, **4508**).

Ditch **4505**, 0.82m wide x 0.36m deep, crossed the trench on a north to south alignment approximately 8.5m from its westernmost end. No finds were recovered from its two fills (4506 & 4507) The tertiary fill, 4507 comprised a dark brown clay and overlay the primary fill, 4506, a dark yellow brown sandy clay, both fills were homogenous in

composition and colour and probably derived from natural silting and weathering.

On a perpendicular alignment was **4508,** which was truncated by **4505**. The cut was comparable in width to the successive feature but only 0.17m deep and was filled by a single deposit, 4509, a dark yellow brown clay devoid of finds and in all likelihood the result of natural weathering processes rather than deliberate backfill.

The sections excavated through these features were extended in an attempt to recover some dating evidence but none was recovered (Fig. 19).

A further 2m to the south and on a gently convergent alignment to **4505** was a third linear feature (**4503**). This shallow gully was only 0.30m wide and 0.12m deep and contained no finds in its mid grey brown silt clay fill (4504).

5.12 Area J & K

Three targeted trenches were excavated in Area K & J, which was situated approximately 1km south of Marsh Gibbon, as a result of a possible curvilinear geophysical anomaly and also in order to investigate beneath any alluvial deposits (Fig. 20).

A layer of topsoil (4600, 4700, & 4800) composed of mid grey brown clay silt sealed the area. Immediately underlying this deposit was a subsoil layer (4601, 4701 & 4801) that was mid yellow brown silt clay in composition. The natural deposit recorded in this area was grey brown clay with chalk inclusions throughout.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
46	4600	0.30m north 0.36m south	4601	0.30m north 0.29m south	0.60m north 0.65m south
47	4700	0.25m east 0.26m west	4701	0.10m east 0.20m west	0.35m east 0.46m west
48	4800	0.25m east 0.23m west	4801	0.40m east 0.43m west	0.65m east 0.66m west

Table 8: Depths of deposits across Area J & K

5.12.1 Trench 46

Trench 46 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.65m deep. No archaeological features were present.

5.12.2 Trench 47

Trench 47 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.46m deep. Two field drains were recorded at

either end of the trench on a northeast to southwest alignment. No archaeological features were present.

5.12.3 Trench 48

Trench 48 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.65m deep. Three modern hedgelines were recorded on a northwest to southeast alignment but no archaeological features were present.

5.13 Area L

Area L was situated approximately 0.5km west of Marsh Gibbon, five trenches were excavated in the area in order to investigate beneath any alluvial deposits in the locality. Trenches 49-53 were excavated east to west and situated on pasture (Fig. 21).

A layer of ploughsoil (4900, 5000, 5100, 5200 & 5300) that was mid brown in colour and composed of silt clay sealed the area. Immediately underlying this deposit was a subsoil layer (4901, 5001, 5101, 5201 & 5301) composed of mid yellow brown silt clay. The natural deposits recorded in this area were grey brown clay with chalk flecking throughout.

Trench	No.	Topsoil	No.	Subsoil	Total trench depth
49	4900	0.26m north 0.30m south	4901	0.26m north 0.34m south	0.52m north 0.64m south
50	5000	0.20m north 0.24m south	5001	0.37m north 0.25m south	0.57m north 0.49m south
51	5100	0.49m east 0.42m west	5101	0.23m east 0.24m west	0.72m east 0.66m west
52	5200	0.20m east 0.25m west	5201	0.30m east 0.28m west	0.50m east 0.53m west
53	5300	0.32m north 0.30m south	5301	0.26m north 0.37m south	0.58m north 0.67m south

Table 9: Depths of deposits across Area L

5.13.1 Trench 49

Trench 49 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.64m deep. A linear archaeological feature was recorded crossing the trench approximately 4m from the southernmost end of the trench (**4902**). The ditch was aligned northwest to southeast and was only 0,53m wide x 0.18m deep. A single fill was recorded within the gully which contained no finds and was composed of a mid grey brown silt clay (4903).

5.13.2 Trench 50

Trench 50 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.57m deep. No Archaeological features were present. A field drain was recorded at the southern end of the trench on a northeast to southwest alignment

5.13.3 Trench 51

Trench 51 was orientated west southwest to east northeast and was 30m long, 2m wide and up to 0.72m deep. No Archaeological features were present. A single field drain was recorded at the easternmost end of the trench on a northwest to southeast alignment

5.13.4 Trench 52

Trench 52 was orientated northwest to southeast and was 30m long, 2m wide and up to 0.67m deep. No Archaeological features were present. A field drain was recorded at the eastern limit of the trench on a northeast to southwest alignment.

5.13.5 Trench 53

Trench 53 was orientated northeast to southwest and was 30m long, 2m wide and up to 0.67m deep. No Archaeological features were present.

6 Discussion

6.1 Settlement Evidence

The Archaeological Evaluation along the proposed route of the Hardwick to Marsh Gibbon pipeline recorded archaeological remains in Area F that attest to probable Roman settlement in the vicinity.

Towards the east of the area Trench 30 was found to contain evidence for structural remains in the form of a line of postholes/postpads These features were sealed by a possible demolition layer (3001), which contained significant quantities of pottery and CBM that supported the inference that the remains of a structure lay in the vicinity. The full extent of the structure and subsequent demoliton deposit was not exposed within the trench, furthermore the relatively shallow depth of the excavated posthole (**3008**), 0.17m, suggested that the post alignment recorded in the trench might not have been load bearing elements and instead represented part of the internal structure of a building, for instance uprights forming the inner section of an aisle. It therefore seems likely that the building encompassed an area significantly larger than Trench 30. It is also possible that the mettling (3011) recorded to the east of these structural remains formed part of a courtyard/external surface associated with the building.

The finds support the inference that some form of settlement was in evidence in Trench 30. The animal bone from 3001 was comprised overwhelmingly of cattle lower limb bones, though pig, sheep/goat and horse remains were also identified. Despite its highly fragmented nature it was possible to ascertain, from the prevalence of lower limb elements and butchery marks, that much of the assemblage represented secondary butchery waste (Faine 2006).

No structural remains were recorded in Trench 57, which was excavated immediately to the west of Trench 30, however a layer (5716) similar in colour and composition to 3001 was observed at the eastern end of the trench which may have been a by product of the demolition of a nearby building; a number of features synonymous with occupation and settlement were also in evidence. These included ditches **5712**, **5708** and **5710** and pit **5705** whose fill sequence, which included a possible capping layer (5703), contained fairly large quantities of debris characteristic of a rubbish pit, for instance butchered cattle remains (Faine 2006). 5703 might have been placed deliberately in order to seal the underlying deposit; for instance to keep away scavengers.

Trench 59 was excavated in order to define the western limit of the settlement features in this area and as no archaeological remains were recorded there it seems likely that the settlement was concentrated towards the east, closer to the crest of the hill.

The evidence from Trenches 29 and 56 supported this conclusion. No structural features were recorded in either trench but both were found to contain evidence for some form of settlement in the locality. Extensive banked ditches (**2905** & **5603**) and a large pit (**5604**), recorded in Trench 56, contained similar assemblages of finds to the features recorded in Trenches 30, 57 and 29. Fill 5606 contained both sheep/goat and cattle metacarpals and a butchered portion of cattle mandible along with almost the entire upper dentition of an adult horse (Faine 2006).

Although ditches **2905** and **5603** were dissimilar in profile, making it impossible to concluded with any certainty that they were part of the same enclosure or boundary system, their close proximity to Trenches 30 and 57 make it entirely plausible that these boundary features were associated with the structural remains to the west.

The environmental samples were found to be devoid of charred seeds but wood charcoal was in evidence, which indicated that there was in fact the potential for seed preservation. This suggested that any settlement was not domestic in nature. However, the evidence for the burning of wood/charcoal, in conjunction with the substantial quantities of slag recovered from the site, were indicative of the area being devoted to industrial activity.

6.2 Iron Smelting

Large quantities of slag were recovered from Trenches 33, 58 and 61. Some of this material came from the fills of ditches (**3312**, **5805** & **6102**) and although none of this material was *in situ*, the concentration of slag was indicative of the presence of metal working in the vicinity and it is plausible that the ditches demarcated enclosures where such activities took place.

Furthermore, the iron slag recovered was typical of the bloomery iron smelting process. This is unusual as smithing slag is far more commonly recorded on archaeological sites but in this case it was entirely absent from the metalwork assemblage (Eley 2006). The environmental samples corroborated this conclusion as no hammerscale, a by-product of smithing activity, was recovered from them (Fosberry 2006).

The presence of evidence for smelting suggests that iron ore was readily available and it is possible that Roman Akeman Street, which passed less than a kilometre to the south, was the conduit by which such material was supplied.

It was also possible to tentatively estimate the approximate size and shape of the furnaces from which the slag derived. Slagged lining recovered from 3314 was identified as a segment of furnace top rim.

From this fragment it was possible deduce that the top aperture of the furnace was approximately 0.17m in diameter. The diameter of the furnace bottoms retrieved from 3313 corroborated this and in conjunction, these two elements suggested narrow furnaces with almost vertical walls (Eley 2006).

7 Conclusions

In conclusion, it is clear that Area F contained significant archaeological remains dated to the Roman period including possible structures and settlement enclosures and also, further to the west, evidence for industrial activity, namely iron smelting, dated to the same period.

Whilst the contingency trenches (56–62) excavated around those targeted by the brief (29-33) successfully determined the apparent limit of these remains, it is possible that further works in Area F would expose more outlying features within the landscape.

The remaining areas cited for disturbance by the pipe route had a much lower incidence of archaeological features typical of low density rural settlement similar to that identified by the Desk Based Assessment (Cotswold Archaeology 2006).

8 Mitigation Proposals

The following recommendations for any further works are made at the request of the client. It should be noted that the final decision with regards any future work based upon this report will be made by the County Archaeology Office.

8.1 Area A

A low density of archaeological features was recorded in Trenches 1 and 2. It seems unlikely that further work in this area would reveal high concentrations of archaeological remains and the implementation of a watching brief during the stripping of the route corridor would be sufficient mitigation.

8.2 Area B

No archaeological features were recorded in this area. However it is recommended that a watching brief be implemented during the stripping of the route corridor in this area in order to confirm that the original trial trenches did not miss the putative Roman Road highlighted by the Desk Based Assessment (Cotswold Archaeology 2006).

8.3 Area C

A low density of archaeological features was recorded in Trenches 14 and 55 and it seems unlikely that further excavation in this area would reveal high concentrations of archaeological remains. However, this

area was cited as possibly encompassing a section of the course of the Stonehill to Fleet Marston Roman road and whilst this was not recorded in the evaluation trenches, including contingency Trench 54, it is recommended that a watching brief during the stripping of the pipe route corridor be implemented in order to provide sufficient mitigation.

8.4 Area D

A single archaeological feature was recorded in Trench 19. It is recommended that a watching brief to monitor the stripping of the route corridor would be required to mitigate the impact of the pipeline in this area.

8.5 Area E

A low density of archaeological features was recorded in Trenches 24, 27 and 28. This consisted of shallow ditches and gullies indicative of low density rural settlement. It is recommended that a watching brief to monitor the stripping of the route corridor would be sufficient mitigation for this area.

8.6 Area F

Two concentrations of archaeological features were recorded in Area F. These incorporated Trenches 29, 30, 56 and 57 and further to the west, 33, 58 and 61. It is recommended that a programme of full excavation within this area would be required in order to successfully define and understand the archaeological remains recorded during the archaeological evaluation with a watching brief to monitor the stripping of the remainder of this area.

8.7 Area G

A single shallow ditch was recorded in Trench 40. It is recommended that no further work is required in this area.

8.8 Area H & I

Two intercutting ditches and a shallow gully were recorded in Trench 45, which may indicate the presence of low density rural settlement. It is recommended that a watching brief would provide sufficient mitigation in this area.

8.9 Area J & K

No archaeological remains were recorded in this area and it is recommended that no further work is required.

8.10 Area L

A single shallow ditch/gully containing no archaeological finds was recorded in Trench 49. It is recommended that no further work is required in this area.

Acknowledgements

The author would like to thank Southern Gas Networks who commissioned and funded the archaeological work. The project was managed by James Drummond-Murray. Chris Thatcher directed the fieldwork. The excavators were Ben Brogan, Tom Lyons, Chris Montague, Lucy Offord and Dan Wheeler. Survey was undertaken by Ben Barnard of Mouchel Parkman. Thanks also to Noel Brandley, Lee and Brendon of Laing O'Rourke, the groundwork contractors who provided the welfare facilities and logistical support, John Davie of Southern Gas Networks, the Project Supervisor, and Jim Bonnor of A.B.Rhead & Associates Ltd, the Archaeological Consultant.

The illustrations were produced by Crane Begg and Severine Bezie. The fossilised crocodile tooth was identified by the staff of Sedgwick Museum of Earth Sciences.

The brief for archaeological works was written by David Radford, Archaeological Officer for Buckinghamshire County Archaeological Service, who visited the site and monitored the evaluation.

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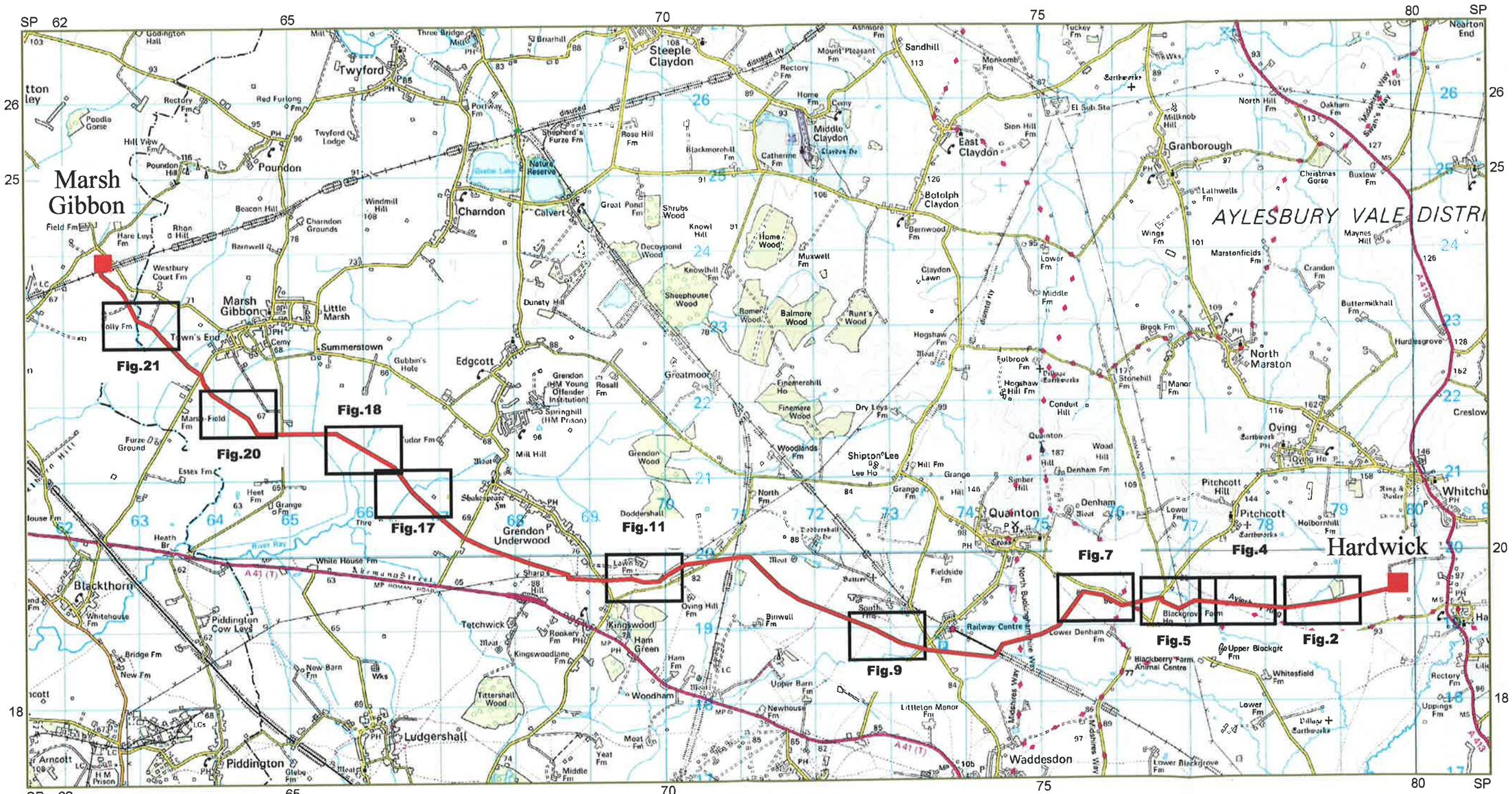

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Figure 1: Site location

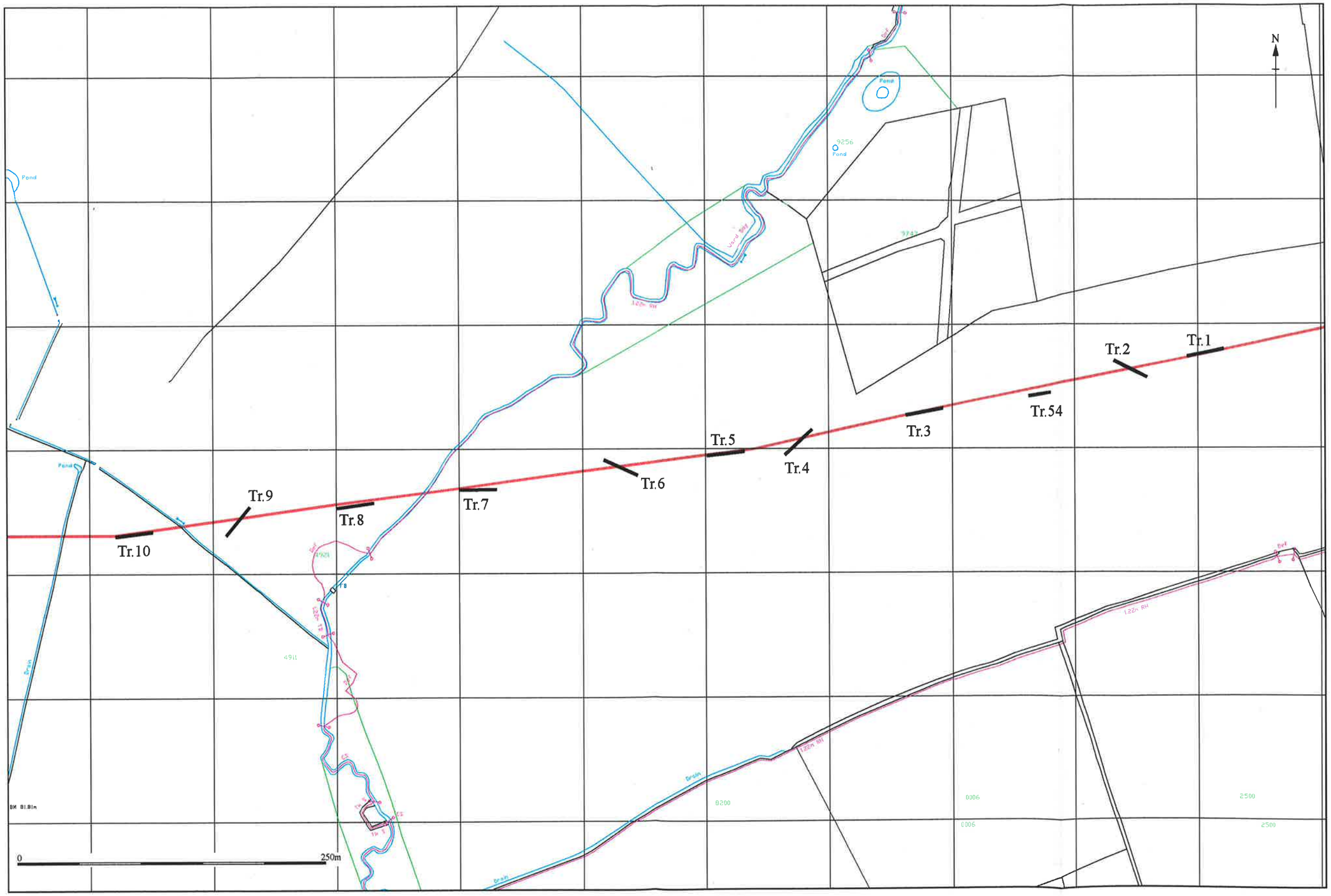

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Figure 2: Area A trench locations

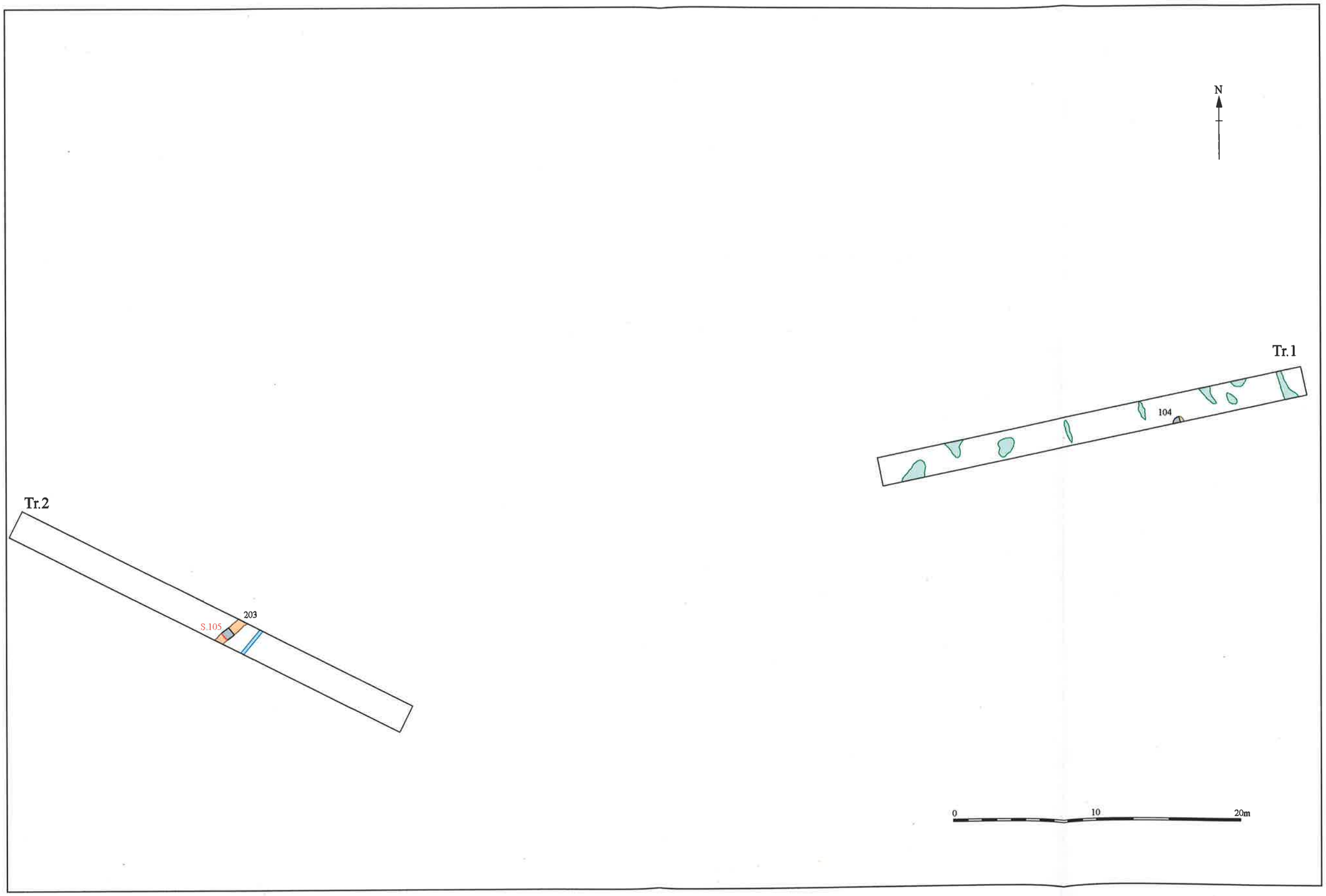

Figure 3: Detailed plan showing all features Trenches 1 and 2

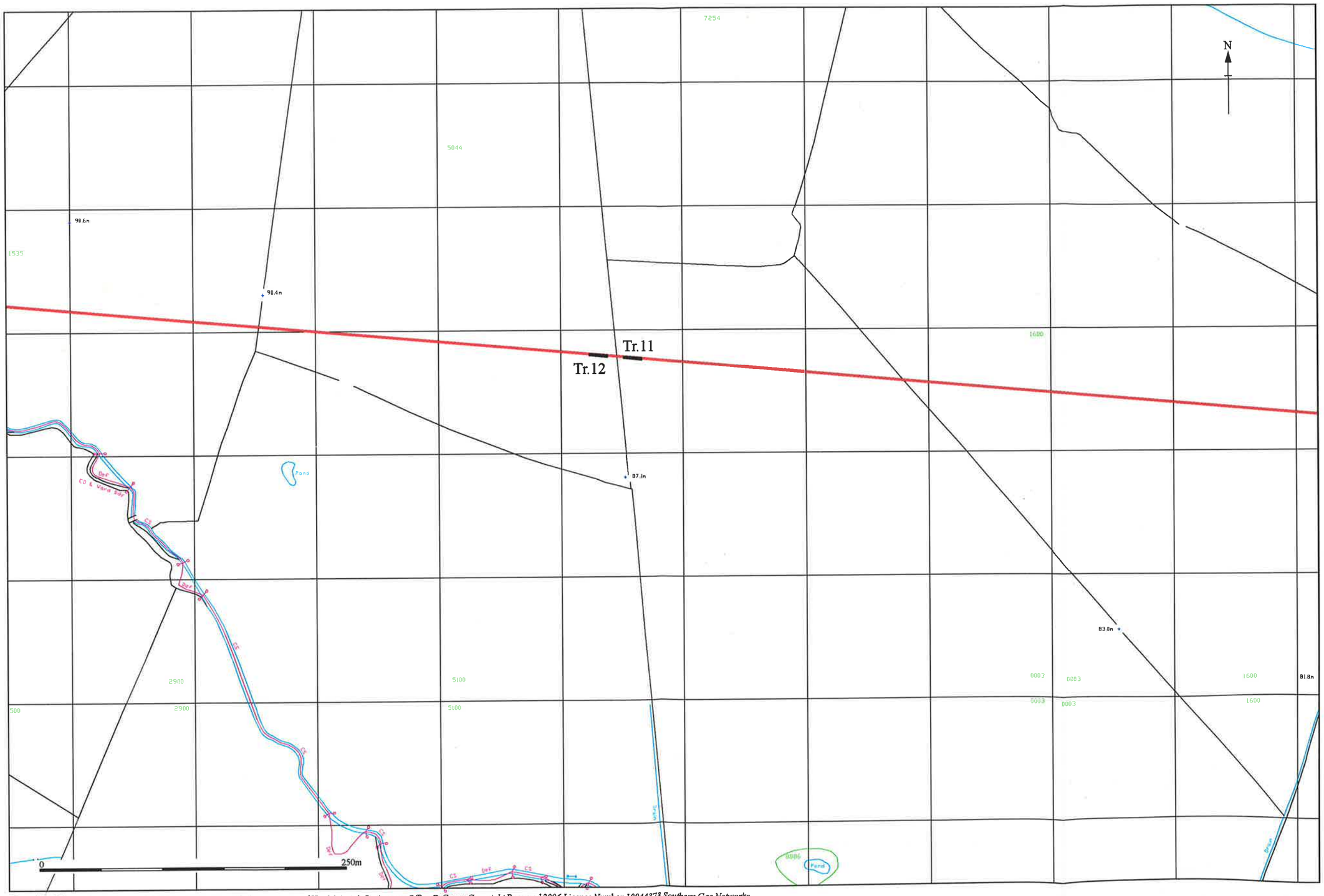

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Figure 4: Area B trench locations

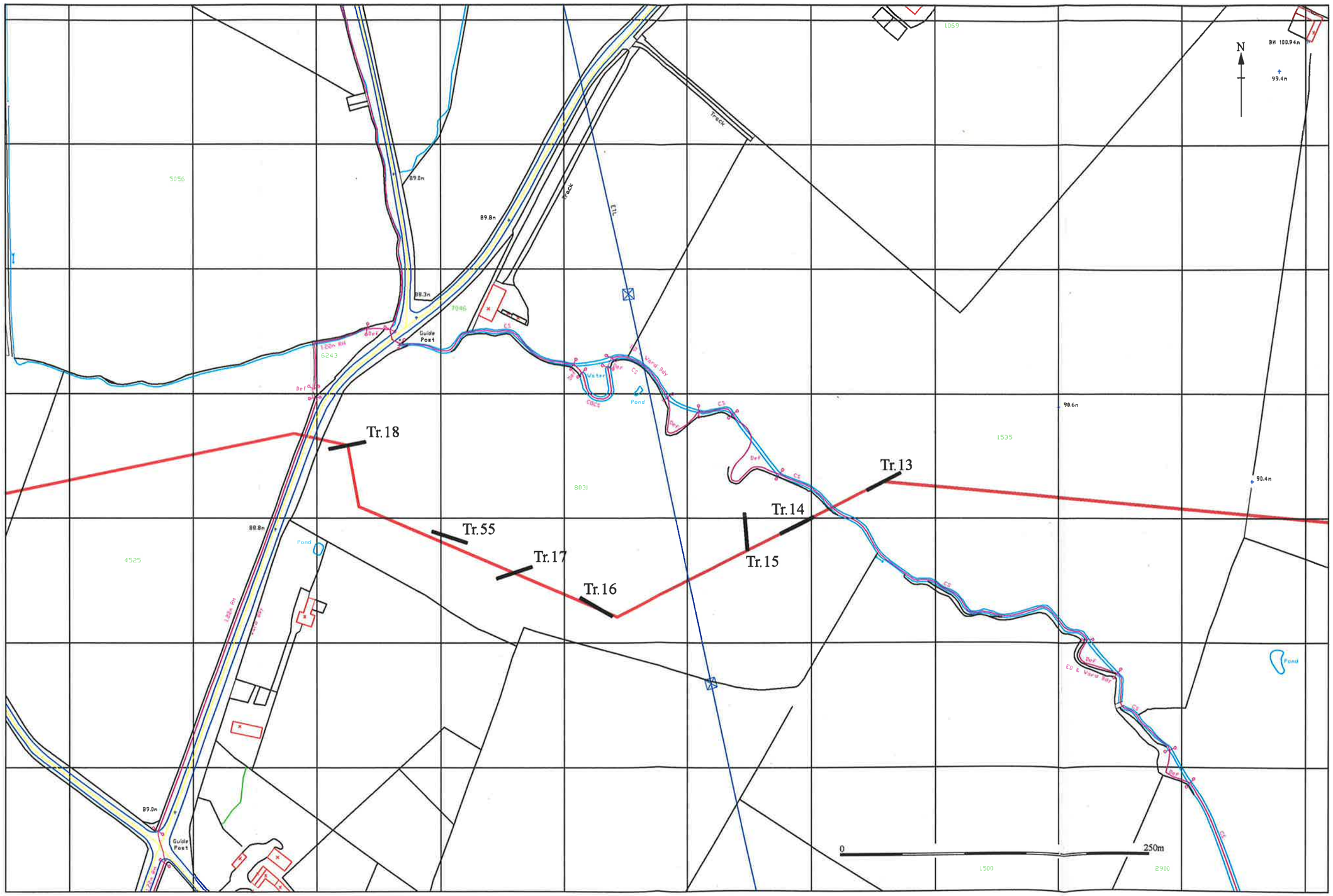

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Figure 5: Area C trench locations

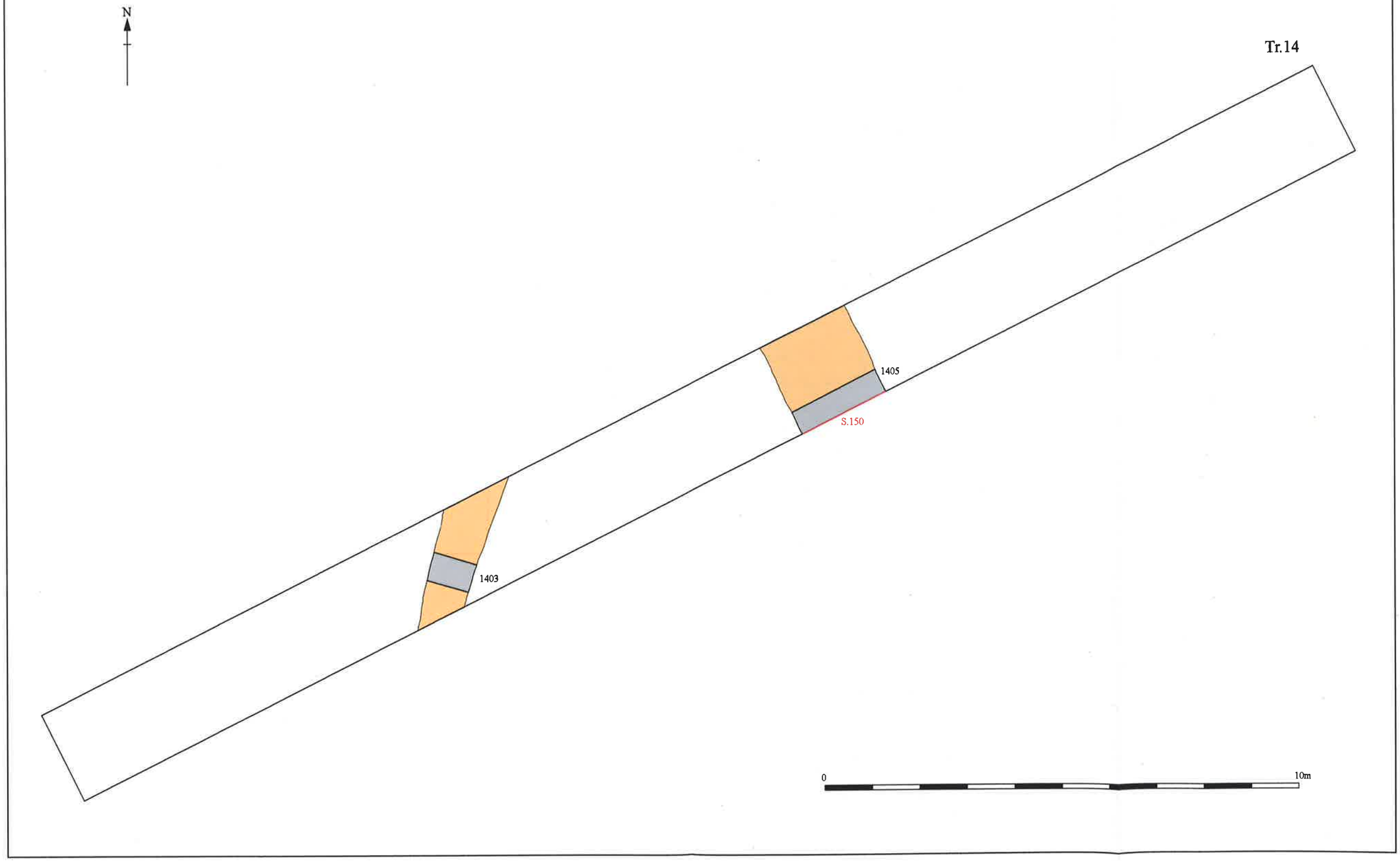

Figure 6: Detailed plan showing all features Trench 14

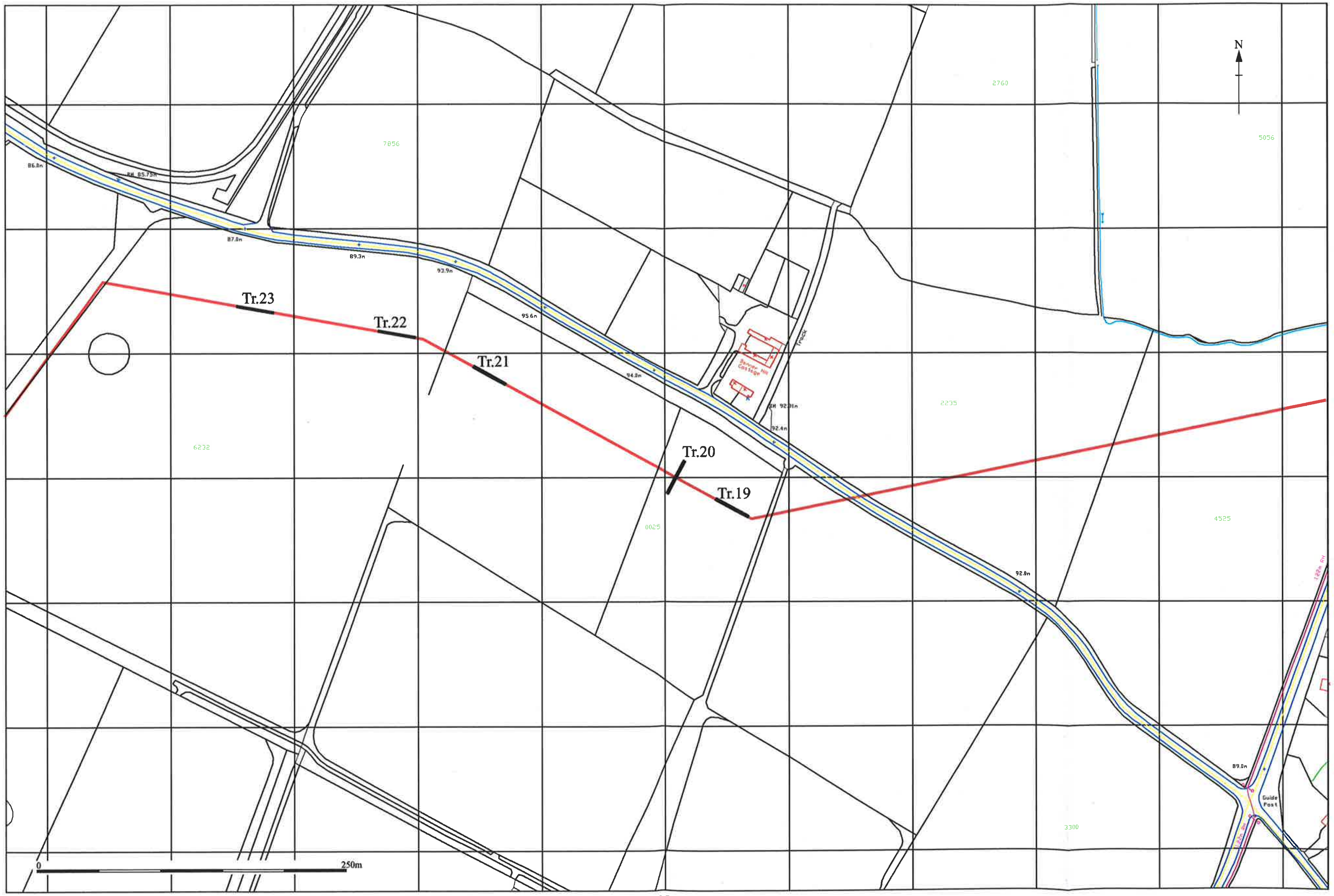

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Figure 7: Area D trench locations

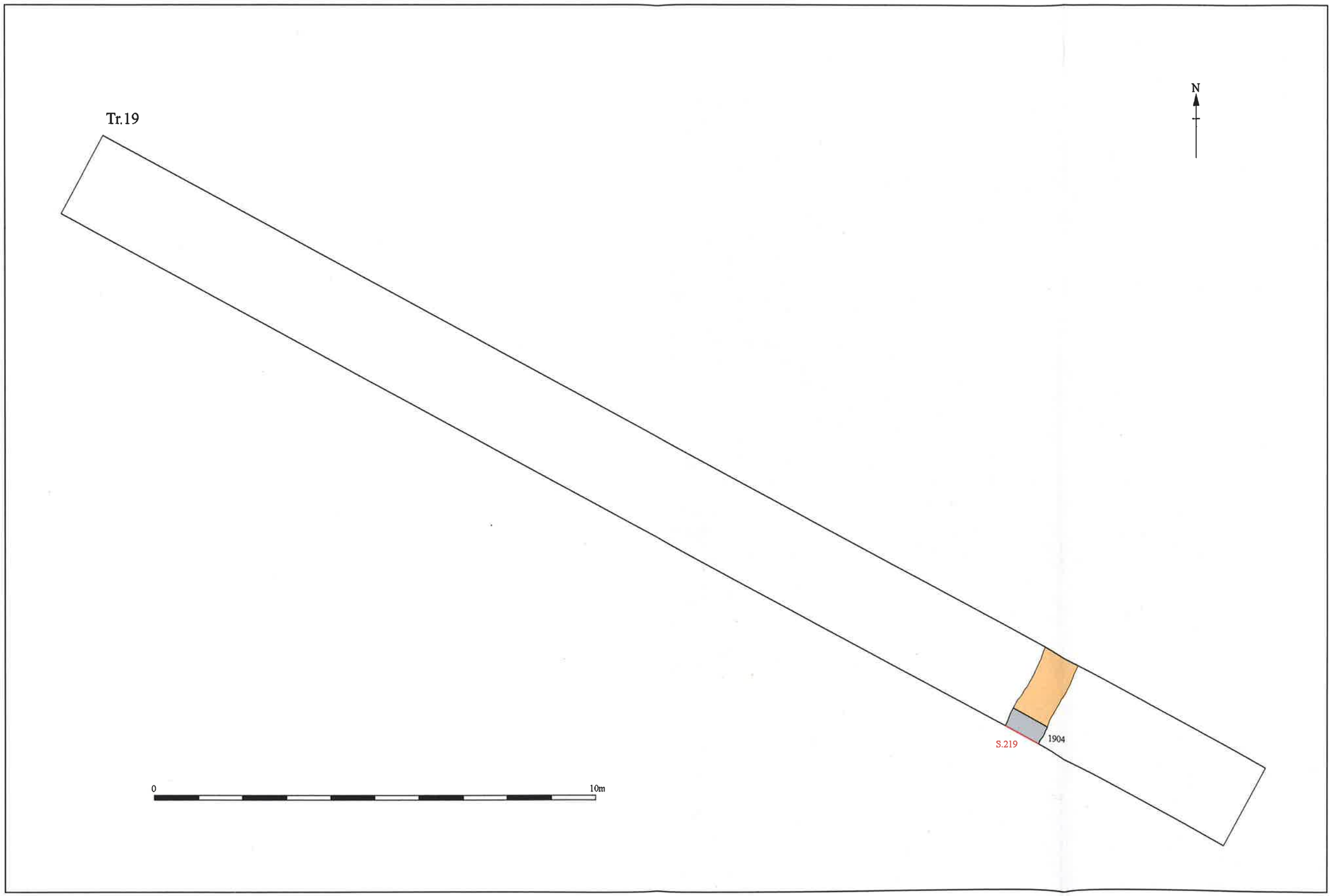

Figure 8: Detailed plan showing all features Trench 19

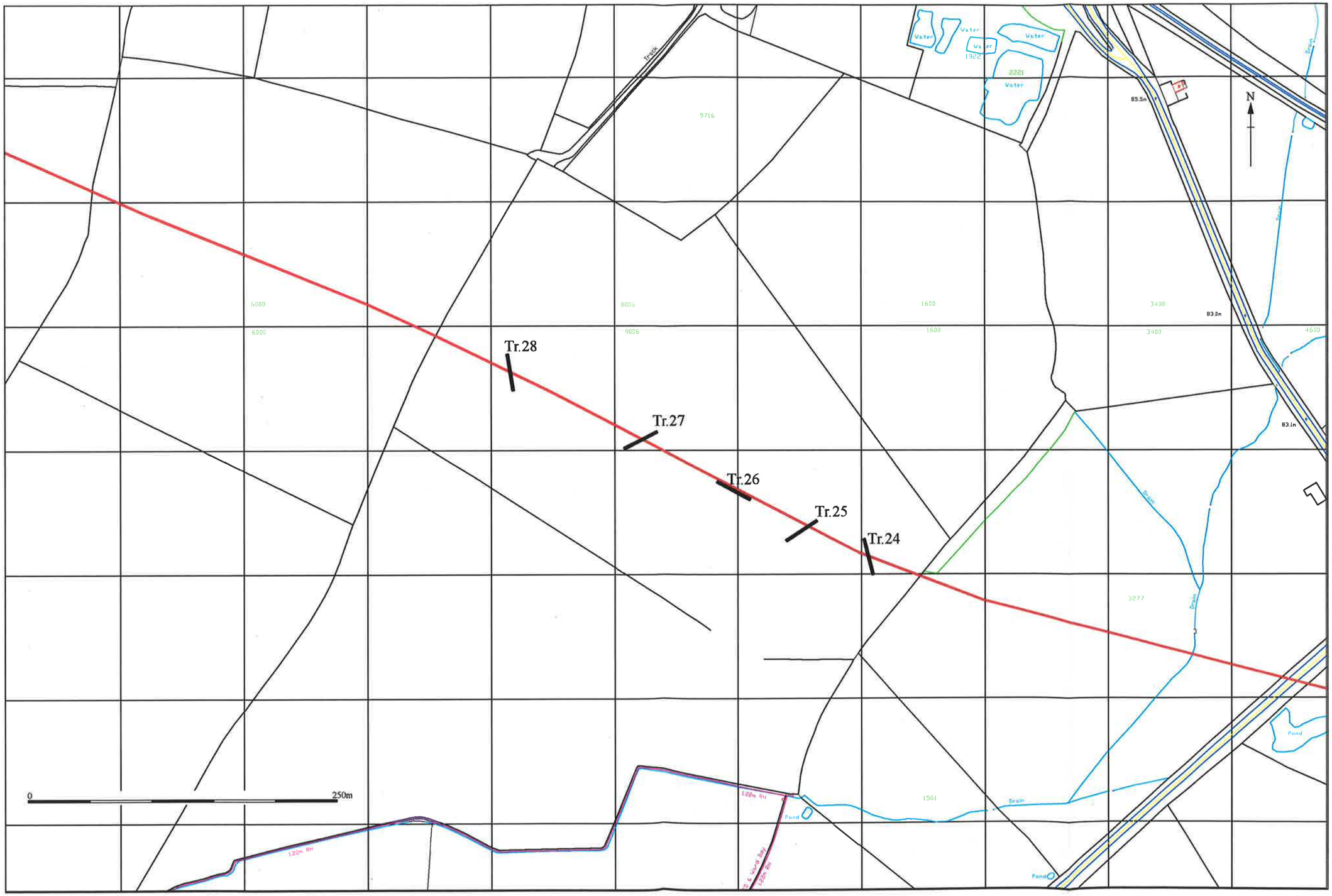

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Figure 9: Area E trench locations

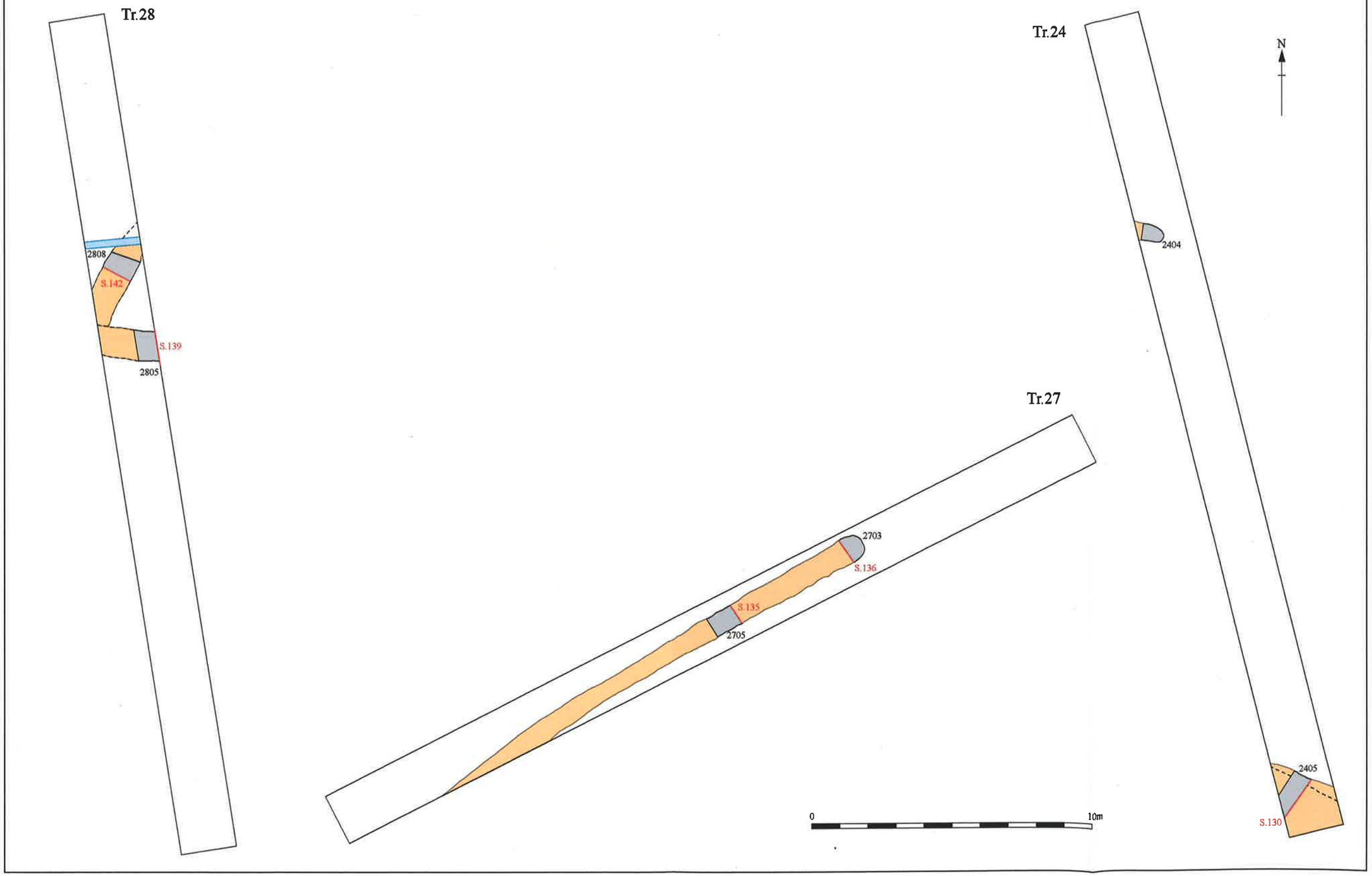

Figure 10: Detailed plan showing all features Trenches 24, 27 and 28

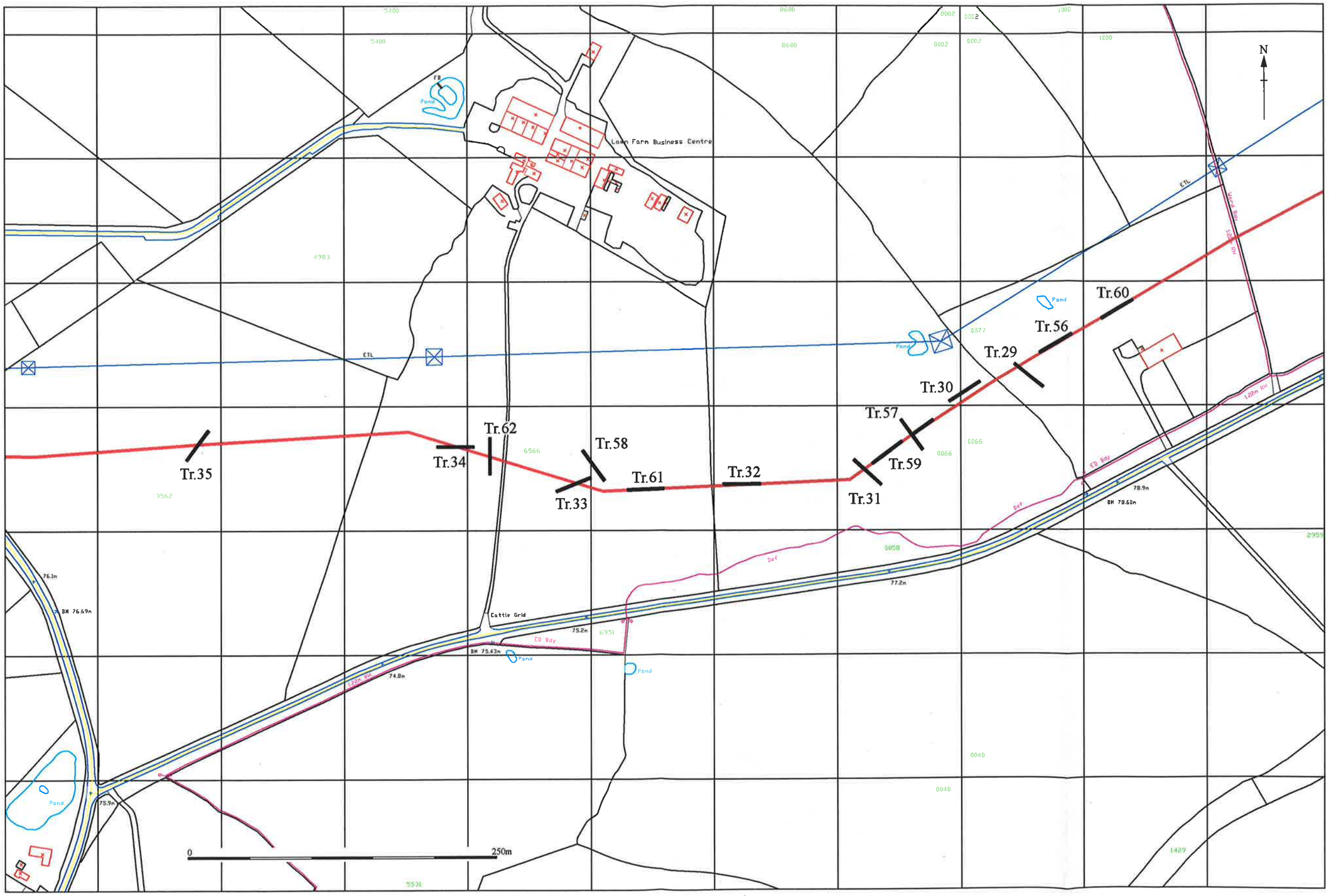

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Figure 11: Area F trench locations

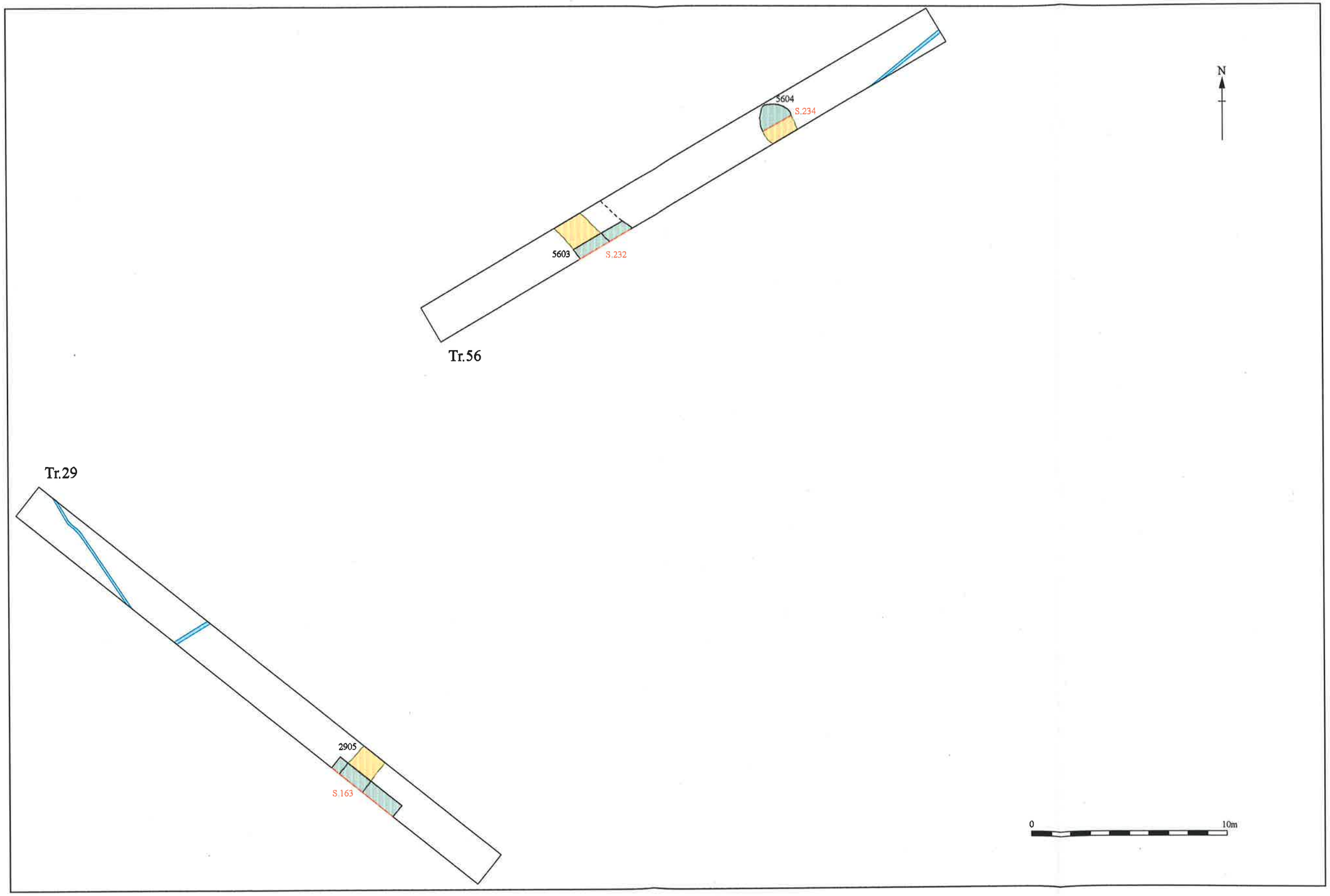

Figure 12: Detailed plan showing all features Trenches 29 and 56

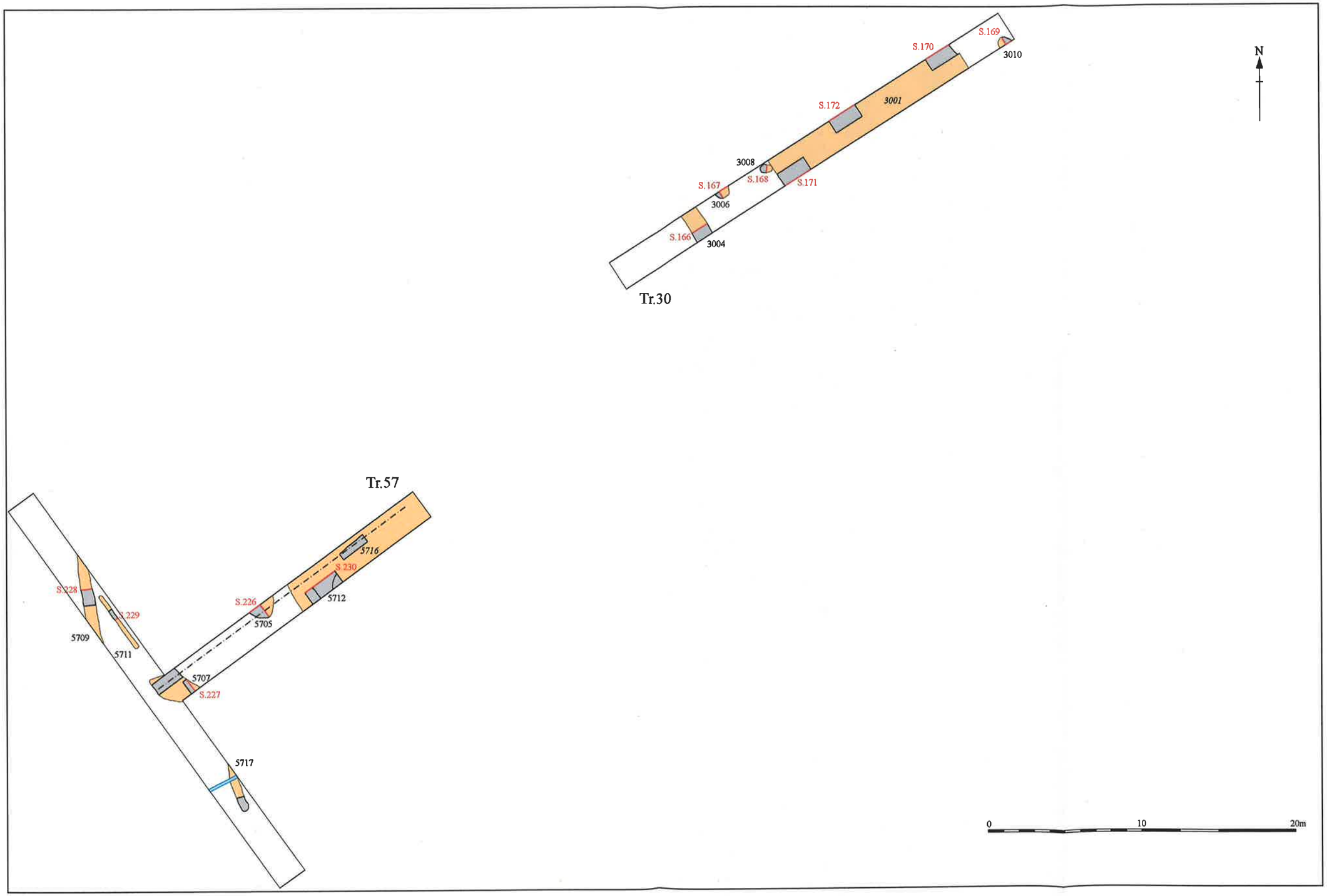

Figure 13: Detailed plan showing all features Trenches 30 and 57

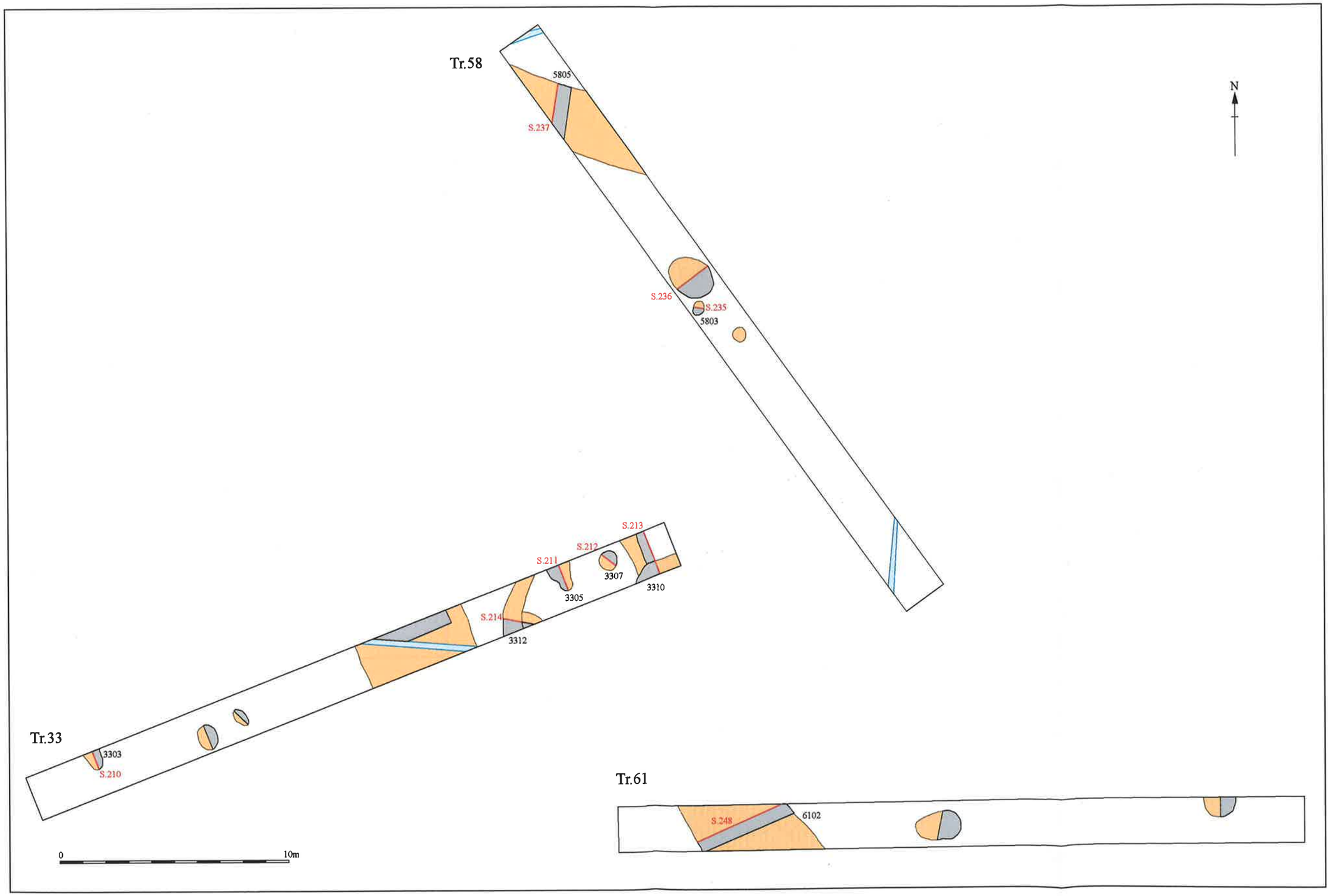

Figure 14: Detailed plan showing all features Trenches 33, 58 and 61

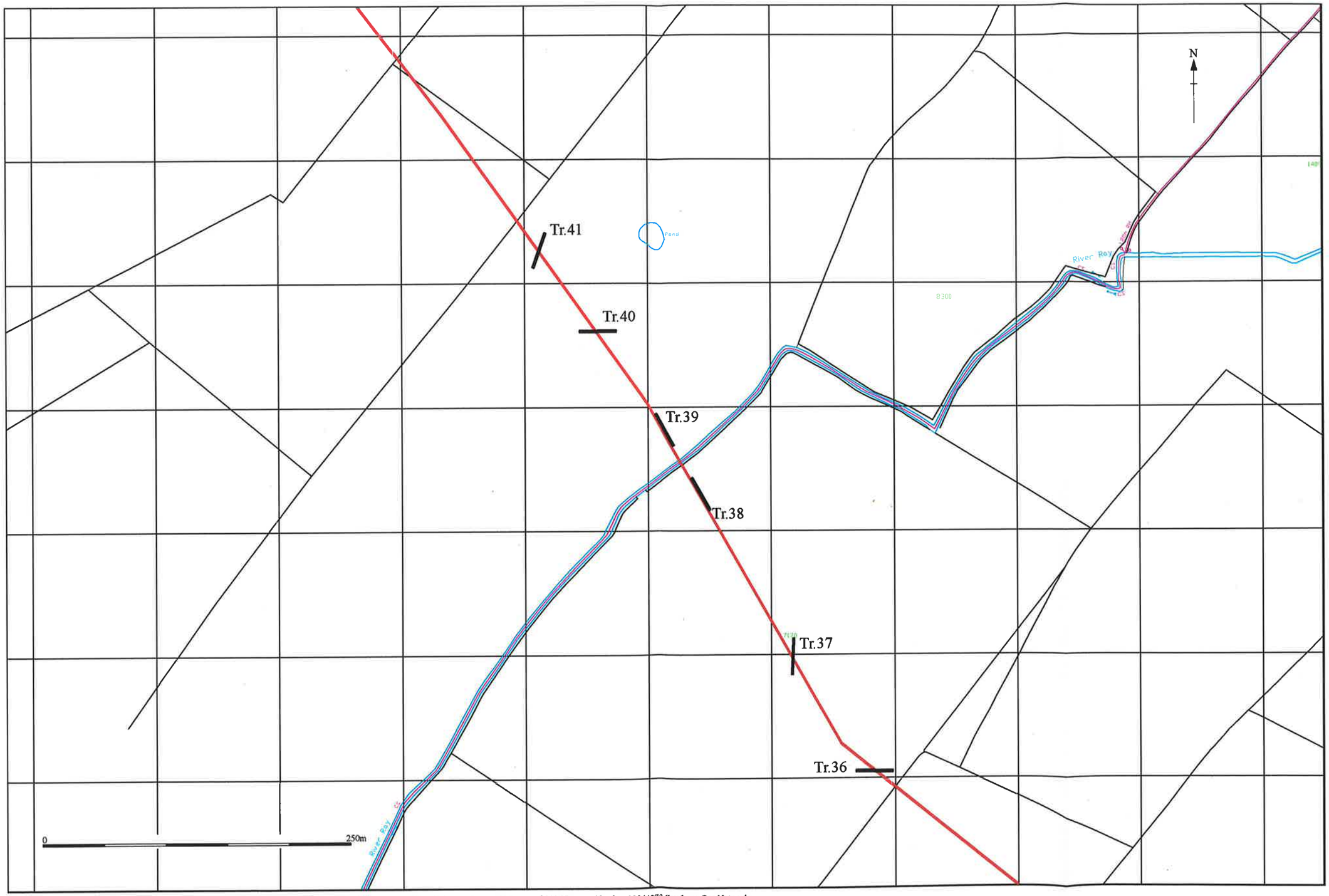

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Figure 15: Area G trench locations

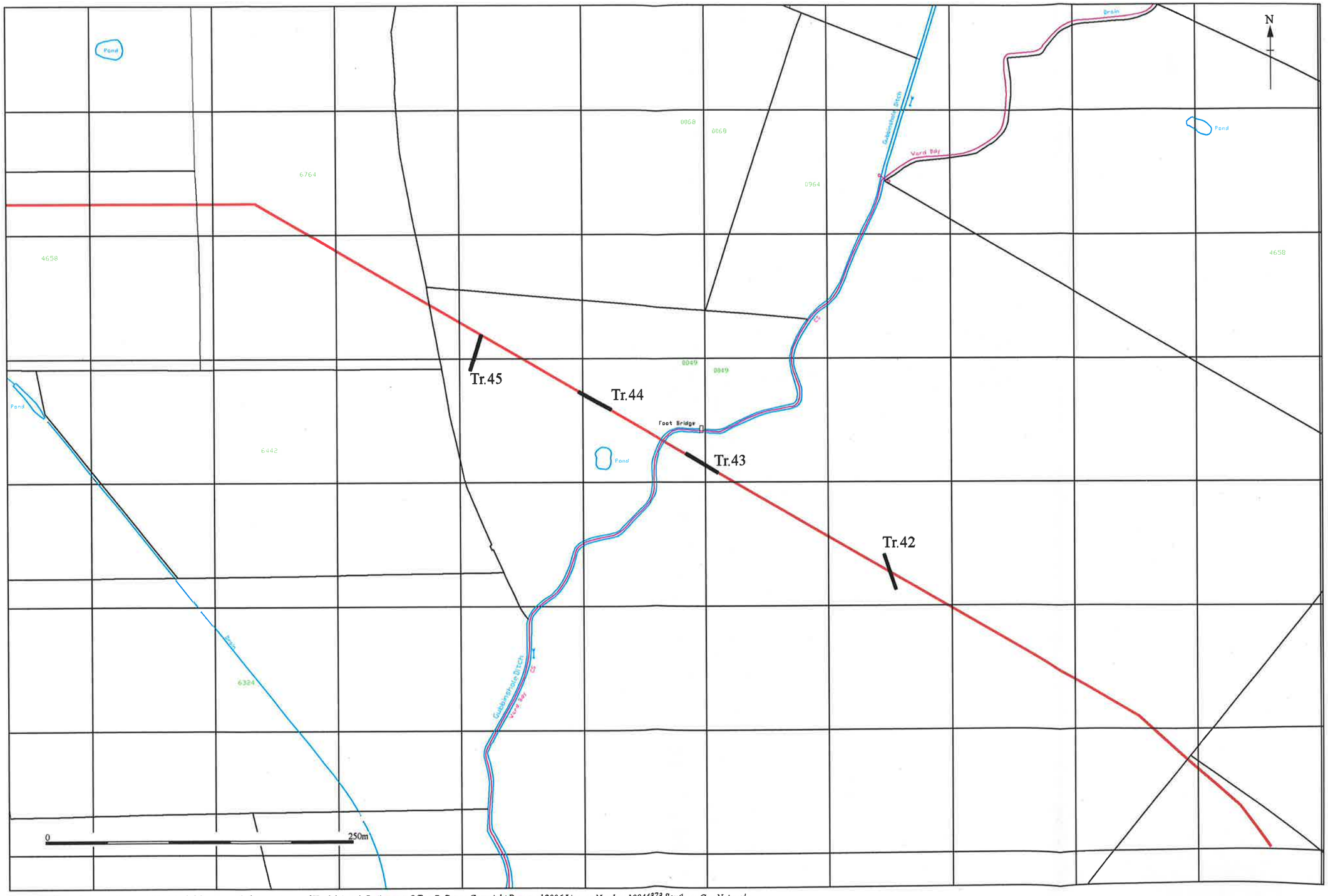

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Figure 16: Area H and I trench locations

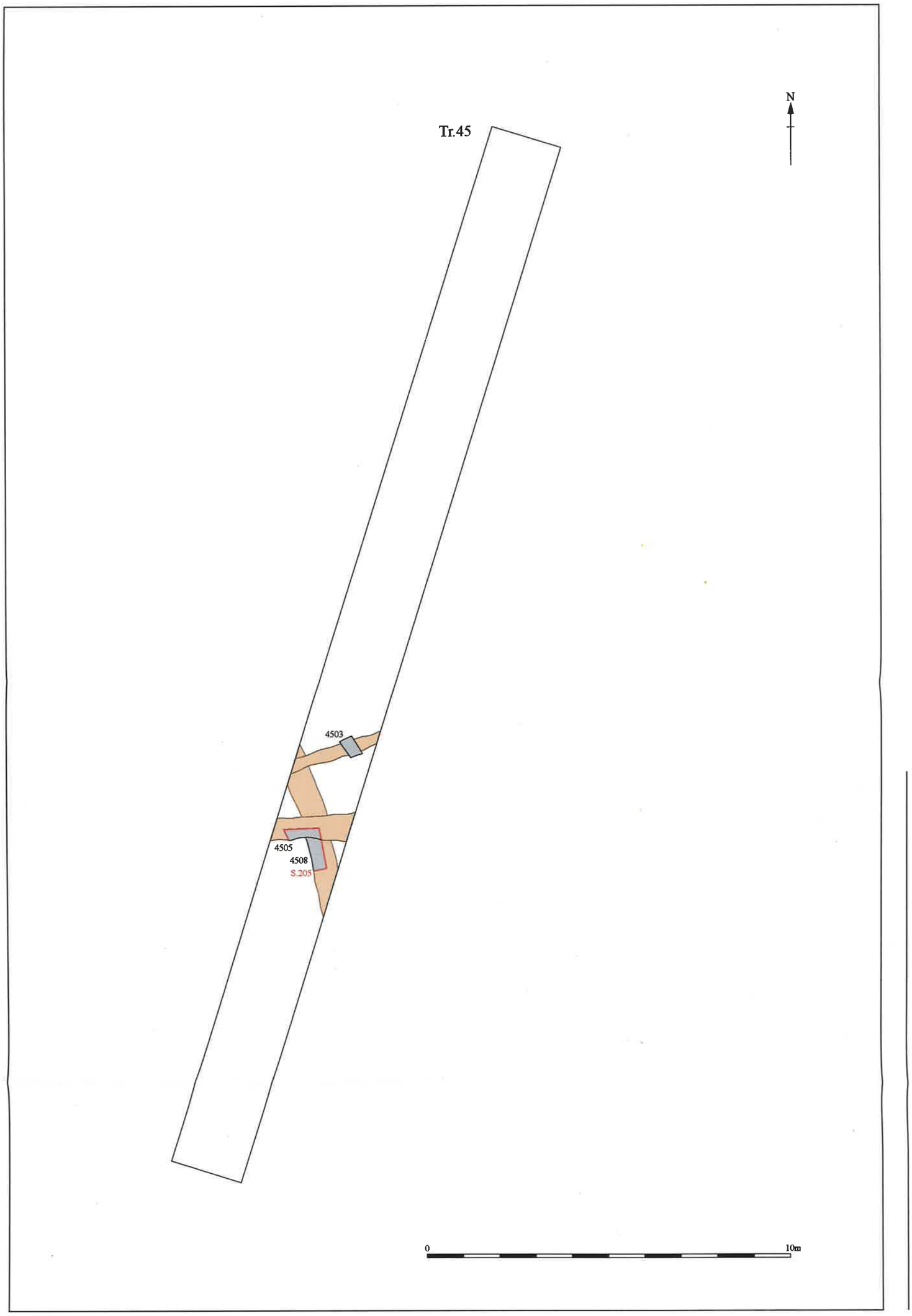

Figure 17: Detailed plan showing Trench 45

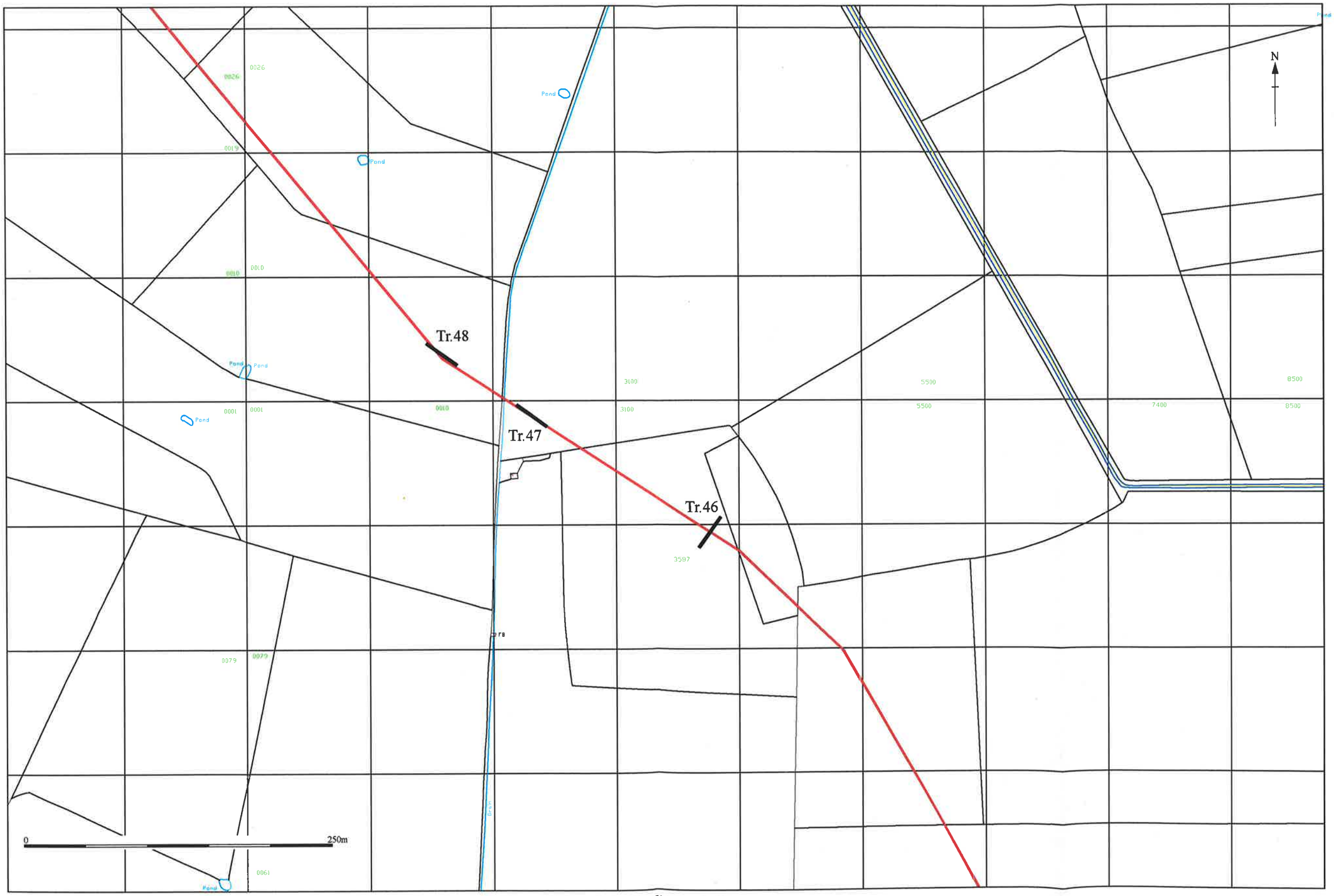

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Figure 18: Area J and K trench locations

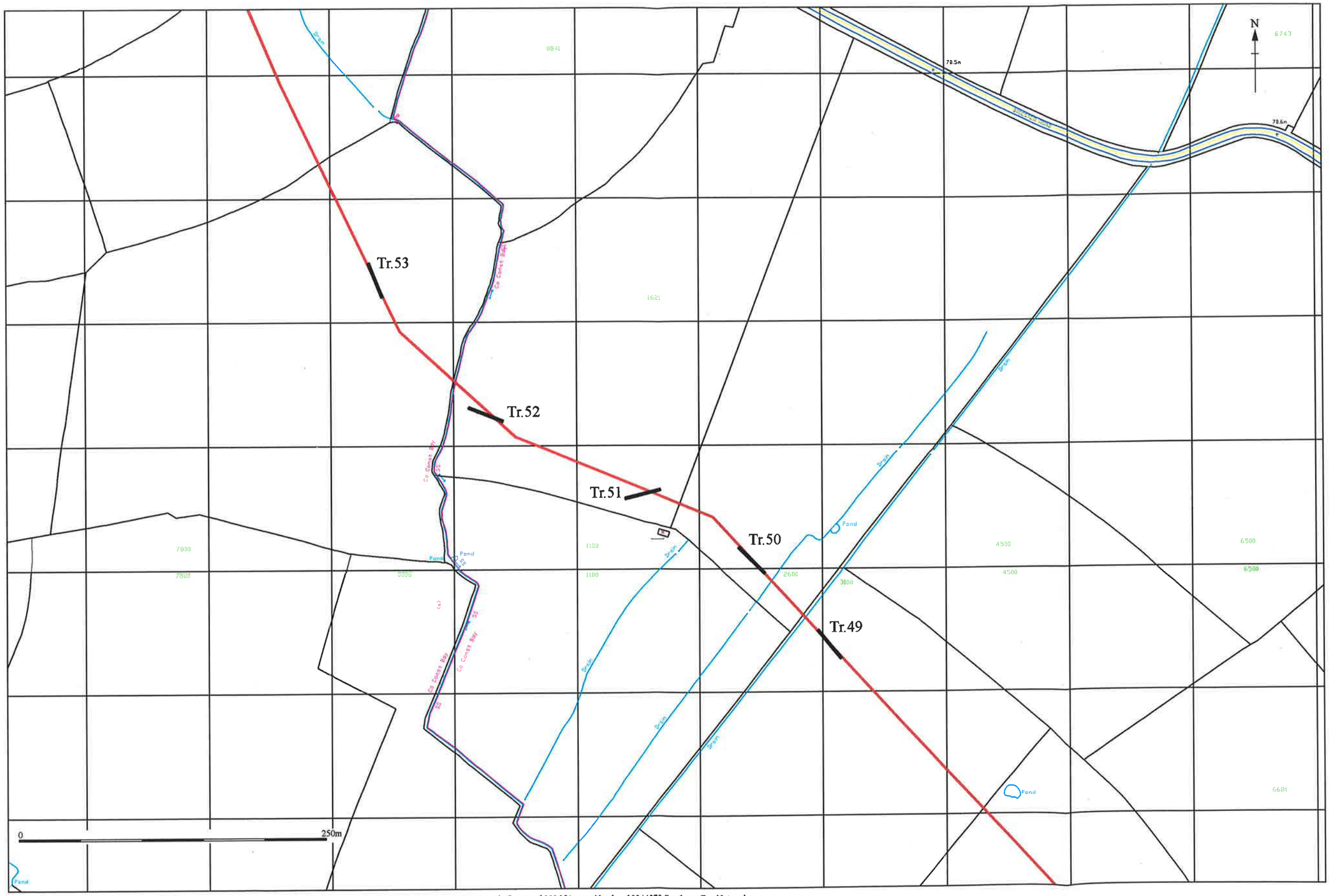

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Figure 19: Area L trench locations

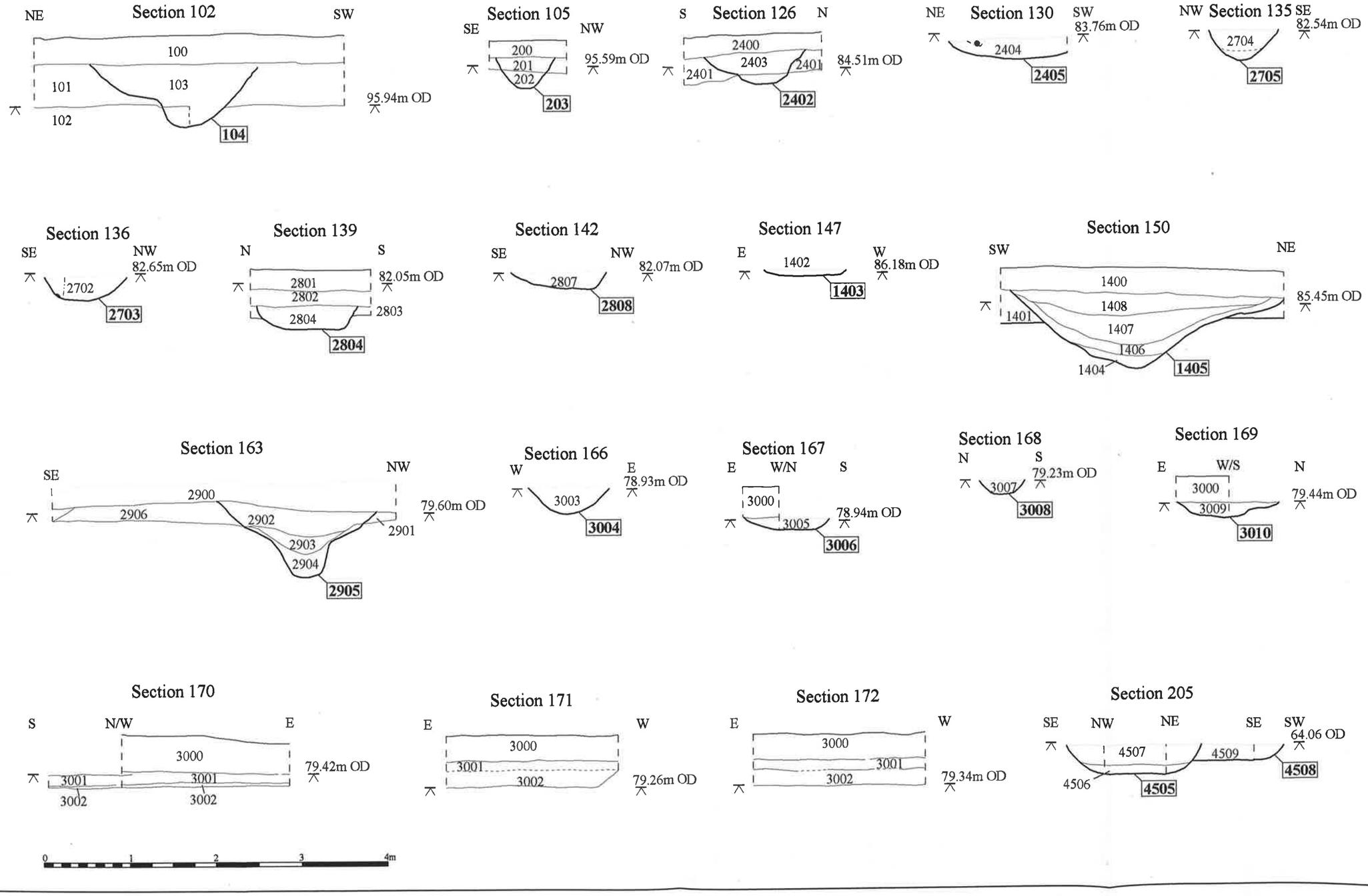

Figure 20: Sections

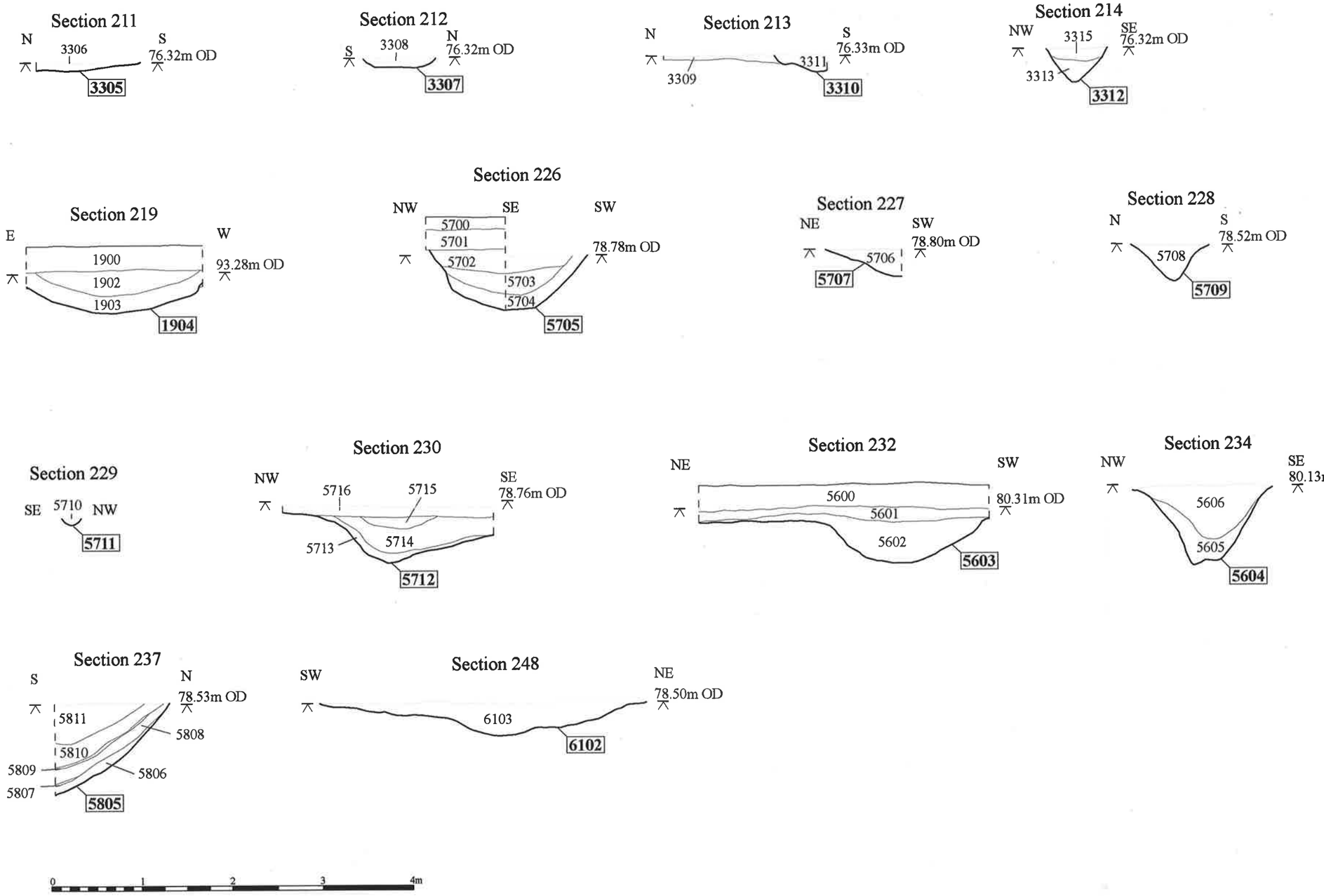

Figure 21: Sections

Appendix 1: Context Summary

Context	Cut	Trench	Description	Dimensions
100	N/A	1	Topsoil	0.34m thick
101	N/A	1	Subsoil	0.25m thick
102	N/A	1	Natural Clay	N/A
103	**104**	1	Mid grey brown fill of possible pit/treethrow	1.95m width x 0.65m thick
104	**104**	1	Cut of shallow pit/treethrow	1.95m width x 0.65m thick
200	N/A	2	Topsoil	0.36m thick
201	N/A	2	Subsoil	0.30m thick
202	**203**	2	Light Olive grey fill of ditch/gully	0.65m width x 0.35m thick
203	**203**	2	Cut of shallow ditch/gully	0.65m width x 0.35m thick
301	N/A	3	Topsoil	0.22m thick
302	N/A	3	Subsoil	0.27m thick
303	N/A	3	Natural Clay	N/A
400	N/A	4	Topsoil	0.15m thick
401	N/A	4	Subsoil	0.70m thick
402	N/A	4	Natural Clay	N/A
501	N/A	5	Topsoil	0.20m thick
502	N/A	5	Subsoil	0.15m thick
503	N/A	5	Subsoil	0.10m thick
504	N/A	5	Subsoil	0.20m thick
505	N/A	5	Natural Clay	N/A
600	N/A	6	Topsoil	0.20m thick
601	N/A	6	Subsoil	0.19m thick
602	N/A	6	Natural Clay	N/A
700	N/A	7	Topsoil	0.19m thick
701	N/A	7	Subsoil	0.65m thick
702	N/A	7	Natural Clay	N/A
801	N/A	8	Topsoil	0.30m thick
802	N/A	8	Subsoil	0.60m thick
803	N/A	8	Natural Clay	N/A
900	N/A	9	Topsoil	0.31m thick
901	N/A	9	Subsoil	0.24m thick
902	N/A	9	Subsoil	0.24m thick
903	N/A	9	Subsoil	0.25m thick
904	N/A	9	Natural Clay	N/A
1000	N/A	10	Topsoil	0.42m thick
1001	N/A	10	Subsoil	0.52m thick
1002	N/A	10	Natural Clay	N/A
1100	N/A	11	Topsoil	0.32m thick
1101	N/A	11	Subsoil	0.25m thick
1102	N/A	11	Subsoil	0.23m thick
1103	N/A	11	Natural Clay	N/A
1200	N/A	12	Topsoil	0.40m
1201	N/A	12	Subsoil	0.23m
1202	N/A	12	Natural Clay	N/A
1300	N/A	13	Topsoil	0.25m thick
1301	N/A	13	Subsoil	0.24m thick
1302	N/A	13	Natural Clay	N/A
1400	N/A	14	Topsoil	0.30m thick

1401	N/A	14	Subsoil	0.35m thick
1402	**1403**	14	Fill of shallow ditch/furrow	1.00m width x 0.06m thick
1403	**1403**	14	Cut of shallow ditch/furrow	1.00m width x 0.06m thick
1404	**1405**	14	Primary fill of ditch	1.05m width x 0.15m thick
1405	**1405**	14	Cut of boundary ditch	3.22m width x 0.96m thick
1406	**1405**	14	Secondary fill of ditch	3.17m width x 0.15m thick
1407	**1405**	14	Penultimate fill of ditch	2.65m width x 0.34m thick
1408	**1405**	14	Tertiary fill of ditch	3.05m width x 0.26m thick
1409	N/A	14	Natural Clay	N/A
1500	N/A	15	Topsoil	0.22m thick
1501	N/A	15	Subsoil	0.27m thick
1502	N/A	15	Natural Clay	N/A
1600	N/A	16	Topsoil	0.29m thick
1601	N/A	16	Subsoil	0.20m thick
1602	N/A	16	Natural Clay	N/A
1700	N/A	17	Topsoil	0.37m thick
1701	N/A	17	Subsoil	0.31m thick
1702	N/A	17	Natural Clay	N/A
1800	N/A	18	Topsoil	0.25m thick
1801	N/A	18	Subsoil	0.31m thick
1802	N/A	18	Natural Clay	N/A
1900	N/A	19	Topsoil	0.27m thick
1901	N/A	19	Subsoil	0.33m thick
1902	**1904**	19	Tertiary fill of boundary ditch	0.70m width x 0.30m thick
1903	**1904**	19	Primary fill of boundary ditch	0.70m width x 0.20m thick
1904	**1904**	19	Cut of boundary ditch	0.70m width x 0.50m thick
2000	N/A	20		0.19m thick
2001	N/A	20		0.11m thick
2002	N/A	20	Natural Clay	N/A
2100	N/A	21		0.20m thick
2101	N/A	21		0.30m thick
2102	N/A	21	Natural Clay	N/A
2200	N/A	22	Topsoil	0.22m thick
2201	N/A	22	Subsoil	0.12m thick
2202	N/A	22	Natural Clay	N/A
2300	N/A	23	Topsoil	0.19m thick
2301	N/A	23	Subsoil	0.12m thick
2302	N/A	23	Natural Clay	N/A
2400	N/A	24	Topsoil	0.40m thick
2401	N/A	24	Subsoil	0.36m thick
2402	**2402**	24	Cut of ditch	1.20m width x 0.40m thick
2403	**2402**	24	Fill of ditch	1.20m width x 0.40m thick
2404	**2405**	24	Fill of ditch	1.45m width (exposed) x 0.27m thick
2405	**2405**	24	Cut of ditch	1.45m width

				(exposed) x 0.27m thick
2506	N/A	25	Natural Clay	N/A
2500	N/A	25	Topsoil	0.20m thick
2501	N/A	25	Subsoil	0.22m thick
2502	N/A	25	Natural Clay	N/A
2600	N/A	26	Topsoil	0.28m thick
2601	N/A	26	Subsoil	0.26m thick
2602	N/A	26	Natural Clay	N/A
2700	N/A	27	Topsoil	0.25m thick
2701	N/A	27	Subsoil	0.41m thick
2702	**2703**	27	Fill of ditch	0.90m width x 0.27m thick
2703	**2703**	27	Cut of ditch	0.90m width x 0.27m thick
2704	**2705**	27	Fill of ditch	0.80m width x 0.25m thick
2705	**2705**	27	Cut of ditch	0.80m width x 0.25m thick
2706	N/A	27	Natural Clay	N/A
2801	N/A	28	Topsoil	0.24m thick
2802	N/A	28	Subsoil	0.30m thick
2803	N/A	28	Natural Clay	N/A
2804	**2805**	28	Fill of Ditch	1.17m width x 0.25m thick
2805	**2805**	28	Cut of Ditch	1.17m width x 0.25m thick
2807	**2808**	28	Fill of Ditch	1.10m width x 0.25m thick
2808	**2808**	28	Cut of Ditch	1.10m width x 0.25m thick
2900	N/A	29	Topsoil	0.33m
2901	N/A	29	Subsoil	0.10m
2902	**2905**	29	Tertiary fill of boundary ditch	1.20m width x 0.18m thick
2903	**2905**	29	Secondary fill of boundary ditch	1.00m width x 0.15m thick
2904	**2905**	29	Primary fill of Boundary ditch	1.40m thick x 0.60m thick
2905	**2905**	29	Cut of Boundary ditch	1.75m width x 0.78m thick
2906	**2905**	29	Bank Material	2.20m width x 0.20m thick
2907	N/A	29	Natural Clay	N/A
3000	N/A	30	Topsoil	0.30m thick
3001	N/A	30	Demolition layer	0.15m thick
3002	N/A	30	Demolition layer	0.15m thick
3003	**3004**	30	Fill of ditch	0.93m width x 0.30m thick
3004	**3004**	30	Cut of ditch	0.93m width x 0.30m thick
3005	**3006**	30	Fill of pit	0.50m width x 0.14m thick
3006	**3006**	30	Cut of pit	0.50m width x 0.14m thick
3007	**3008**	30	Fill of posthole	0.53m width x 0.16m thick
3008	**300**	30	Cut of posthole	0.53m width

	8			x 0.16m thick
3009	**3010**	30	Fill of pit	0.80m width x 0.18m thick
3010	**3010**	30	Cut of pit	0.80m width x 0.18m thick
3011	N/A	30	Natural Clay	N/A
3100	N/A	31	Topsoil	0.36m
3101	N/A	31	Subsoil	0.31m
3102	N/A	31	Natural Clay	N/A
3200	N/A	32	Topsoil	0.30m
3201	N/A	32	Subsoil	0.10m
3202	N\A	32	Natural Clay	N/A
3300	N/A	33	Topsoil	0.36m
3301	N/A	33	Subsoil	0.13m
3302	N/A	33	Natural Clay	N/A
3303	**3303**	33	Cut of pit	0.42m width x 0.11m thick
3304	**3303**	33	Fill of pit	0.42m width x 0.11m thick
3305	**3305**	33	Cut of pit	0.55m width x 0.09m thick
3306	**3305**	33	Fill of pit	0.55m width x 0.09m thick
3307	**3307**	33	Cut of pit	0.79m width x 0.10m thick
3308	**3307**	33	Fill of pit	0.79m width x 0.10m thick
3309	N/A	33	Possible occupation layer	0.08m thick
3310	**3310**	33	Cut of pit	0.58m width x 0.18m thick
3311	**3310**	33	Fill of pit	0.58m width x 0.18m thick
3312	**3312**	33	Cut of curvi-linear ditch	0.68m width x 0.36m thick
3313	**3312**	33	Primary fill of ditch	0.55m thick x 0.23m thick
3315	**3312**	33	Tertiary fill of ditch	0.68m thick x 0.14m thick
3400	N/A	34	Topsoil	0.22m
3401	N/A	34	Subsoil	0.22m
3402	N/A	34	Natural Clay	N/A
3500	N/A	35	Topsoil	0.22m
3501	N/A	35	Modern disturbance	N/A
3502	N/A	35	Natural Clay	N/A
3503	N/A	35	Subsoil	0.13m
3600	N/A	36	Topsoil	0.15m
3601	N/A	36	Subsoil	0.10m
3602	**3604**	36	Fill of ditch	0.23m
3603	**3604**	36	Fill of ditch	0.05m
3604	**3604**	36	Cut of ditch	0.76m width x 0.27m thick
3605	N/A	36	Natural Clay	N/A
3700	N/A	37	Topsoil	0.16m
3701	N/A	37	Subsoil	0.04m
3702	**3703**	37	Fill of ditch	0.21m

3703	**3703**	37	Cut of ditch	0.97m width x 0.21m thick
3704	N/A	37	Natural Clay	N/A
3800	N/A	38	Topsoil	0.12m
3801	N/A	38	Subsoil	0.04m
3802	N/A	38	Natural Clay	N/A
3900	N/A	39	Topsoil	0.23m thick
3901	N/A	39	Subsoil	0.30m thick
3902	N/A	39	Natural Clay	N/A
4000	N/A	40	Topsoil	0.28m thick
4001	N/A	40	Subsoil	0.34m thick
4002	**4003**	40	Fill of ditch	0.50m width x 0.30m thick
4003	**4003**	40	Cut of ditch	0.50m width x 0.30m thick
4004	N/A	40	Natural Clay	N/A
4100	N/A	41	Topsoil	0.17m thick
4101	N/A	41	Subsoil	0.46m thick
4102	N/A	41	Natural Clay	N/A
4200	N/A	42	Topsoil	0.40m
4201	N/A	42	Subsoil	0.39m
4202	N/A	42	Natural Clay	N/A
4300	N/A	43	Topsoil	0.39m
4301	N/A	43	Subsoil	0.44m
4302	N/A	43	Natural Clay	N/A
4400	N/A	44	Topsoil	0.20m
4401	N/A	44	Subsoil	0.24m
4402	N/A	44	Natural Clay	N/A
4500	N/A	45	Topsoil	0.23m
4501	N/A	45	Subsoil	0.41m
4502	N/A	45	Natural Clay	N/A
4503	**4503**	45	Cut of ditch	0.30m width x 0.12m thick
4504	**4503**	45	Fill of ditch	0.30m width x 0.12m thick
4505	**4505**	45	Cut of ditch	0.82m width x 0.36m thick
4506	**4505**	45	Primary fill of ditch	0.72m width x 0.10m thick
4507	**4505**	45	Tertiary fill of ditch	0.82m width x 0.26m thick
4508	**4508**	45	Cut of ditch	0.35m width x 0.17m thick
4509	**4508**	45	Fill of ditch	0.35m width x 0.17m thick
4600	N/A	46	Topsoil	0.36m thick
4601	N/A	46	Subsoil	0.30m thick
4602	N/A	46	Natural Clay	N/A
4700	N/A	47	Topsoil	0.26m thick
4701	N/A	47	Subsoil	0.20m thick
4702	N/A	47	Natural Clay	N/A
4800	N/A	48	Topsoil	0.25m thick
4801	N/A	48	Subsoil	0.43m thick
4802	N/A	48	Natural Clay	N/A
4900	N/A	49	Topsoil	0.30m thick
4901	N/A	49	Subsoil	0.34m thick
4902	**4902**	49	Cut of ditch	0.55m width x 0.12m thick

4903	**4902**	49	Fill of ditch	0.55m width x 0.12m thick
4904	N/A	49	Natural Clay	N/A
5000	N/A	50	Topsoil	0.24m thick
5001	N/A	50	Subsoil	0.37m thick
5002	N/A	50	Natural Clay	N/A
5100	N/A	51	Topsoil	0.49m thick
5101	N/A	51	Subsoil	0.24m thick
5102	N/A	51	Natural Clay	N/A
5200	N/A	52	Topsoil	0.25m thick
5201	N/A	52	Subsoil	0.30m thick
5202	N/A	52	Natural Clay	N/A
5300	N/A	53	Topsoil	0.32m thick
5301	N/A	53	Subsoil	0.37m thick
5302	N/A	53	Natural Clay	N/A
5400	N/A	54	Topsoil	0.35m
5401	N/A	54	Subsoil	0.25m
5402	N/A	54	Natural Clay	N/A
5500	N/A	55	Topsoil	0.20m thick
5501	N/A	55	Subsoil	0.35m thick
5502	**5503**	55	Fill of pit	0.80m width x 0.15m thick
5503	**5503**	55	Cut of pit	0.80m width x 0.15m thick
5504	N/A	55	Natural Clay	N/A
5600	N/A	56	Topsoil	0.29m
5601	N/A	56	Subsoil	0.12m
5602	**5603**	56	Fill/Bank of Boundary ditch	3.20m width x 0.50m thick
5603	**5603**	56	Cut of Boundary ditch	3.20m width x 0.50m thick
5604	**5604**	56	Cut of pit	1.50m width x 0.86m thick
5605	**5604**	56	Primary fill of pit	1.26m width x 0.40m thick
5606	**5604**	56	Secondary fill of pit	1.50m width x 0.47m thick
5607	N/A	56	Natural Clay	N/A
5700	N/A	57	Topsoil	0.15m
5701	N/A	57	Subsoil	0.23m
5702	**5705**	57	Tertiary fill of pit	1.50m width x 0.25m thick
5703	**5705**	57	Secondary fill of pit/possible capping layer	1.30m width x 0.25m thick
5704	**5705**	57	Primary fill of pit	1.50m width x 0.15m thick
5705	**5705**	57	Cut of pit	1.80m width x 0.58m thick
5706	**5707**	57	Fill of ditch	2.00m width x 0.29m thick
5707	**5707**	57	Cut of ditch	2.00m width x 0.29m thick
5708	**5709**	57	Fill of ditch	0.88m width x 0.40m thick
5709	**5709**	57	Cut of ditch	0.88m width x 0.40m thick
5710	**5711**	57	Fill of gully	0.20m width x 0.06m thick

5711	**5711**	57	Cut of gully	0.20m width x 0.06m thick
5712	**5712**	57	Cut of ditch	2.00m width x 0.49m thick
5713	**5712**	57	Primary fill of ditch	1.90m width x 0.10m thick
5714	**5712**	57	Secondary fill of ditch	1.76m width x 0.30m thick
5715	**5712**	57	Tertiary fill of ditch	0.82m width x 0.12m thick
5716	N/A	57	Demolition Layer	0.12m thick
5717	**5717**	57	Cut of ditch	0.30m width x 0.07m thick
5718	**5717**	57	Fill of gully	0.30m width x 0.07m thick
5719	N/A	57	Natural Clay	N/A
5800	N/A	58	Topsoil	0.25m
5801	N/A	58	Subsoil	0.30m
5802	**5803**	58	Fill of pit	0.40m width x 0.22m thick
5803	**5803**	58	Cut of pit	0.40m width x 0.22m thick
5804	N/A	58	Spread/remnant of oocupation layer?	0.13m thick
5805	**5805**	58	Cut of boundary ditch	1.26m width x 1.00m thick
5806	**5805**	58	Primary fill of ditch	1.20m width x 0.10m thick
5807	**5805**	58	Lens of blackened clay	0.35m width x 0.03m thick
5808	**5805**	58	Fill of ditch	1.26m width x 0.14m thick
5809	**5805**	58	Lens of blackened silt and clay	1.04m width x 0.04m thick
5810	**5805**	58	Penultimate fill of ditch	1.17m width x 0.27m thick
5811	**5805**	58	Tertiary fill of ditch	0.98m width x 0.44m thick
5812	N/A	58	Natural Clay	N/A
5900	N/A	59	Topsoil	0.20m
5901	N/A	59	Subsoil	0.30m
5902	N/A	59	Natural Clay	N/A
6000	N/A	60	Topsoil	0.30m
6001	N/A	60	Subsoil	0.16m
6002	N/A	60	Natural Clay	N/A
6100	N/A	61	Topsoil	0.33m
6101	N/A	61	Subsoil	0.04m
6102	**6102**	61	Cut of ditch	3.60m width x 0.36m thick
6103	**6102**	61	Fill of ditch	3.60m width x 0.36m thick
6104	N/A	61	Natural Clay	N/A
6200	N/A	62	Topsoil	0.23m
6201	N/A	62	Subsoil	0.05m
6202	N/A	62	Natural Clay	N/A

Please note: Dimensions shown are maximum recorded. Cut numbers are shown in bold type.

Appendix 2: Roman Coins, catalogue details

Valentinian I (364-375)
Obv. [D N] VALEN[TINI-ANVS P F AVG]
Rev. [SECVRITAS-REIPVBLICAE], //[?C]O[N]
AE VI 1.68g; 16mm
RIC IX, p. 66, no 17(a).XIV a or b, Arelate, 367-375.
SF 7, (3001)

House of Valentinian I
Obv. [...]
Rev. [SECVRITAS-REIPVBLICAE]
AE XII 0.83g; 16 mm
Illegible mint, 364-378.
SF 8, (3001)

Appendix 3: Metalworking Waste

By Tom Eley

Introduction

A morphological assessment of the iron slag assemblage from the Hardwick to Marsh Gibbon pipeline evaluation was carried out to identify which metallurgical processes created it and whether these were being practised in this locality.

Methodology

An assessment of the morphological characteristics was undertaken to assign the slag to a metallurgical process, either iron smelting or smithing. Also recorded was mass and magnet response. Testing with a magnet was used to identify slag with a high iron or magnetite content. Magnetite is a product of reducing conditions in a smelting furnace whilst the presence of iron would distinguish the type of iron being utilised; it is not however possible to differentiate between iron and magnetite without further analysis.

Slag with a metallic smooth, ropey, flowed surface is considered to derive from the bloomery iron smelting process whereby iron ore is converted direct into wrought iron, but contained within a 'spongy' mass of slag called a bloom. This type of slag is called Tap slag because it would have been 'tapped' out of the furnace as a molten liquid. To obtain a usable iron the bloom needs to be worked to remove the slag termed 'primary smithing'. The bloomery iron smelting method is thought to be the only process for producing iron from the Iron Age until the development of the blast furnace in the late medieval period.

The secondary smithing process converted bar iron into tools, equipment and utensils and repaired damaged items. Slags with no characteristic shape and a rough, coarse exterior are thought to derive from this process, but they can sometimes be formed in the smelting furnace. Smithing hearth bottoms are an exception; they have a distinctive plano-convex shape, created by the shape of smithing hearth's base from a heated agglomeration of iron, slag, hearth lining, flux and charcoal. Iron smithing slag is rarely found in primary smithing contexts because the hearths were regularly cleaned out and more importantly were built above ground at about waist height, so are susceptible to being destroyed by later activity. Hammer-scale is small flakes and droplets of slag and iron emitted as showers of sparks during smithing. Sampling for hammerscale from post-holes and pits could locate the smithy building. Hammerscale is small and often remains near to the place where it was created, i.e. smithing hearths, unlike larger slag fragments that can be dumped further away.

Results

Context	Weight (kg)	Type	Magnetic (?)	Description
3001	0.012	lining	no	overfired clay/ cinderash
3308	0.119	tap slag	no	6 pieces
3313	4.064	furnace bottom	yes	0.21m by 0.17m by 0.11m. Charcoal impressions and lining adhering, flat base and circular shape
3313	1.099	furnace slag	yes	charcoal impressions 4 pieces small to large
3313	2.124	tap slag	no	ropey flowed appearance
3313	0.163	lining + slag	no	3 pieces porous slag
3313	0.012	Ore?	no	roasted?
3313	0.478	furnace bottom	no	50mm by 80mm by 60mm small and dense
3313	3.631	furnace bottom	no	0.17m by 0.17m by 0.1m. plano-convex shape, charcoal impressions. 1 face flattened probably attached to furnace wall or mouth.
3314	1.051	tap slag	no	12 pieces, small to large, ropey flowed platy
3314	1.040	furnace slag	no	partially molten slag contains lining fragments
3314	1.520	furnace slag	no	fragment of rim? 8 pieces small to large
3314	0.058	Ore?	no	Unroasted
3314	0.476	furnace slag	no	partially flowed tap slag
3315	0.524	tap slag	no	many small fragments
5708	0.257	furnace slag	yes	charcoal impressions, 2 small dense pieces
5716	0.068	tap slag	no	
5808	0.102	furnace slag	yes	charcoal impressions
5811	0.347	furnace slag	no	curved shape from furnace wall
5811	0.031	lining + slag		vitrified, 1 side black, 1 reddish
6013	1.185	tap slag	no	10 pieces, platy
6013	0.542	furnace slag	no	charcoal impressions
6103	0.016	tap slag	no	
Total	**18.919**			

Table 10. slag description

Trench No.	Weight (kg)	%
30	0.012	0.1
33	16.371	86.5
57	0.325	1.0
58	0.48	2.5
60	1.727	9.1
61	0.016	0.1
Total	**18.919**	**100**

Table 11. slag distribution

Discussion

Almost 19kg of iron slag characteristic of the bloomery iron smelting process was recovered. Tap slag and furnace slag were both present but no smithing slag was positively identified. This is unusual as smithing slag more often occurs on archaeological sites due to the availability of resources limiting where iron smelting takes place. For successful iron smelting a good supply of iron ore, clay for furnace building and wood, to make charcoal, is needed.

The slag came exclusively from trenches: 30; 33; 57; 58; 60 and 61, of this the majority (86.5%) was found in trench 33 with small amounts in 30, 57, 58 and 61 (see table 11). Trench 60 contained nearly 10% of the total slag assemblage. Archaeometallurgical debris occurs in discrete concentrations on the route of the pipeline, which may be locations of iron smelting and related activities in the Romano-British period. Alternatively the slag may have been brought from elsewhere and dumped at these locations. This happened more commonly in later periods for road building and the evidence here does not support that idea as it comes from well dated Roman-British contexts.

A fragment of slagged lining was recovered from (3314) that could be a remnant of the furnace top rim. Furnaces had a hole at the top through which the ore and charcoal was fed with another hole near the base for airflow and the removal of slag and iron blooms. Where furnaces do survive it tends to be only the base; the rest of the superstructure being rapidly destroyed either deliberately or by the elements. From this fragment it is estimated the top aperture of the furnace was approximately 0.17m in diameter, 0.28m including the walls. This corresponds closely to the diameter of the furnace bottoms from (3313) (see table 10) and suggests the furnaces were narrow and had near vertical walls.

Conclusion

The slag assemblage indicates that iron smelting may have been practised in the vicinity of Marsh Gibbon during the Romano-British period. Excavation at this location could reveal further evidence of iron smelting including the potential for finding furnaces and other associated activities such as smithing.

Appendix 4: Environmental Appraisal

By Rachel Fosberry

Introduction and Methods

Eleven bulk samples were taken from features within the evaluated areas of the site in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations.

Ten litres of each sample was pre-soaked in Decon-90 in order to break down the heavy clay content. All the samples except for Samples 5 and 8 (which were still too clayey at the time of processing) were processed by tank flotation for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The flot was collected in a 0.5mm nylon mesh and the residue was washed through a 1mm sieve. Both flot and residue were allowed to air dry. The dried residue was passed through 5mm and 2mm sieves and a magnet was dragged through each resulting fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The flot was examined under a binocular microscope at x16 magnification and the presence of any plant remains or other artefacts is noted in Table.

Results

Sample Number	Context Number	Cut Number	Context Type	Flot contents	Residue contents
1	1404	1405	Ditch	Modern seeds and roots	No finds
2	2904	2905	Ditch	Few flecks charcoal	Bone
3	2902	2905	Ditch	Charcoal	Bone/pot
4	3001	-	Layer	Substantial charcoal up to 2cm	Bone/pot
5	4506	4505	Ditch	Not processed but contains substantial amounts of slag up to 20cm x 15cm	
6	4509	4508	Ditch	Nothing in flot	No finds
7	3315	3312	Ditch	Few flecks charcoal	No finds
8	3311	3310	Pit/ditch	Not processed but doesn't look productive	
9	1903	1904	Ditch	Nothing in flot	No finds
10	5606	5604	Pit	Substantial charcoal up to 1cm, single grass seed and small fragment of nutshell	Bone/pot
11	5811	5805	Ditch	Sparse vitrified charcoal	Bone/pot/slag

Table 12: Environmental Samples from XOX MUL 06

Conclusions and Recommendations

This assemblage produced an extremely low abundance of charred remains. Only small fragments of wood charcoal were recovered and so only tentative conclusions can be drawn.

The presence of wood charcoal suggests that there is some potential for preservation of charred seeds although none were recovered from this assemblage. This would suggest that domestic occupation did not occur in this area. The burning of wood/charcoal, along with the substantial quantity of slag recovered from this site, suggests industrial activity was most likely to be taking place. No hammerscale was recovered from the samples to indicate smithing activity.

In conclusion, The samples showed only a low abundance of charred material that is not considered worthy of further analysis.

Appendix 5: Faunal Remains

By Chris Faine

Introduction

A total of 55 "countable" bones were recovered from 18 contexts with 142 fragments being unidentifiable to species (72% of the total sample). Fragments were obtained from a variety of features including pits, ditches and surface layers largely dating from the Romano-British period. The condition of the assemblage is good albeit extremely fragmented in many cases, with the majority of fragmentation being attributed to both butchery and other taphonomic processes.

Methodology

All data was initially recorded using a specially written MS Access database. The elements that were identifiable to species and over 25% complete were included in the database. Loose teeth, caudal vertebra and ribs without proximal epiphyses were noted but not included in any quantification. Elements not identifiable to species were classed as "large/medium/small mammal" but again not included in any quantification. Initially all elements were assessed in terms of siding (where appropriate), completeness, tooth wear stages (also where applicable) and epiphyseal fusion. Tooth wear was assessed using Grant (1982). Completeness was assessed in terms of percentage and zones present (after Dobney & Reilly, 1988). Initially the whole identifiable assemblage was quantified in terms of number of individual fragments (NISP) and minimum numbers of individuals MNI (see table 12).

Any instances of butchery were noted and recorded using a separate table from the main database. The type of lesion, its position, severity and direction were all noted. The presence of any further taphonomy, i.e. burning, gnawing etc was also noted. A separate table for any pathology, giving the position and type of lesion was also used.

Results

The broad species distribution for the entire assemblage is set out in table 12. Cattle remains dominate, making up 65% of the identifiable assemblage, with smaller numbers of pig, horse and sheep/goat remains identified. Unfortunately the extremely fragmentary nature of much of the bone recovered during the evaluation makes comparisons with faunal assemblages recovered from other sites very difficult.

The largest number of identifiable elements were obtained from contexts 3001 and 2902. Context 3001 consists largely of cattle lower limb bones along with other post-cranial elements. The cattle elements from this context all came from adult animals and 50% showed evidence of butchery. A smaller number of butchered horse, pig and sheep/goat remains were also recovered.

A similar pattern can be seen in context 2902, with all but one element from this context being identified as cattle; similar age ranges and patterns of butchery as 3001 were identified. In addition, a pair of cattle metacarpi from 2902 showed evidence of blastic lesions on their proximal articular surfaces. These could indicate stress on the joint due to disease, old age or lifestyle (i.e. use as a draught animal).

Context 5606 contained both sheep/goat and cattle metacarpals along with a butchered portion of cattle mandible, in addition to almost the entire upper dentition of an adult horse. However, as no alveolar bone was recovered, an exact age via crown height analysis could not be obtained. The remaining contexts contained only small amounts of butchered, post-cranial cattle remains, with the addition of a single tarso-metatarsal from a female domestic fowl in 5808 (Carey, 1982). Unstratified contexts (99999) contained a number of butchered cattle lumbar vertebrae.

Discussion

As mentioned earlier the assemblage is extremely fragmentary, with the result that broader questions of age, sex and body part distribution cannot be addressed here. However, the large amount of lower limb elements found in the identifiable assemblage, coupled with the prevalence of butchery marks, does suggest that the largest contexts in particular (2902 & 3001) represent secondary butchery waste.

References

Carey, G.	1982.	*Ageing and sexing domestic bird bones from some late medieval deposits at Barnard's castle, City of London. In B. Wilson, C. Grigson & S. Payne (eds.) Ageing and sexing animal bones from archaeological sites. Oxford: BAR British Series 199.*
Dobney, K & Reilly, K.	1988.	*A method for recording archaeological animal bones: the use of diagnostic zones. Circaea 5(2): 79-96*
Grant, A.	1982.	*The use of tooth wear as a guide to the age of domestic ungulates. In B. Wilson, C. Grigson & S. Payne (eds.) Ageing and sexing animal bones from archaeological sites. Oxford: BAR British Series 199.*

Species	NISP	NISP %	MNI	MNI %
Cattle (*Bos*)	36	65.4	12	44.4
Sheep/Goat (*Ovis/Capra*)	7	12.6	6	22
Horse (*Equus caballus*)	6	11	4	15
Pig (*Sus scrofa*)	5	9	4	15
Fowl (*Gallus sp.*)	1	2	1	3.6
Total	**55**	**100**	**27**	**100**

Table 12: Species distribution for the identifiable sample.

Appendix 6: Pottery Assessment

A.M.Slowikowski

Introduction

A total of 456 sherds of pottery was recovered, weighing 4.892kg. The pottery was recorded by context and fabric, and quantified by sherd count and weight. The occurrence of different forms within each fabric was noted as were the following attributes: level of abrasion, decoration and evidence of use. This was entered onto the ceramics table of an Access database. There is no county wide ceramic type series for pottery in Buckinghamshire. Fabric codes are therefore those used in the Bedfordshire Ceramic Type Series as this is a well long-established and well-used type series, covering ceramics of all periods. Common names, rather than codes, have been used throughout.

Chronology

A spotdate was allocated to each context, based on the latest pottery within that context (table 1). The pottery ranges in date from the late Iron Age to the medieval period, with the bulk of it dating to the late Roman period.

Cxt	Spotdate	Condition	Comments
202	LRB	F	
1903	LRB	P	Very abraded single sherd - possibly early RB?
2404	ERB	G	Late 1st-early 2ndC – very mixed assemblage
2902	LRB/MED	P	Late 13th-14thC
3001	LRB	F	
3002	ERB/LRB	F	Possibly 2nd- 3rdC?
3306	ERB	P	
3308	LIA	P	Very abraded single sherd
3313	ERB	F	
3314	ERB	F	NOT IN CXT LIST
5605	LRB	G	
5606	LRB	P	
5702	RB	P	Small undiagnostic sherds
5704	ERB	F	LIA characteristics
5708	LIA	G	
5713	ERB?	P	Undiagnostic sherd
5714	ERB	P	2ndC?
5716	ERB/LRB	F	Mixed assemblage
5811	ERB	G	
6103	ERB	G	Late 1st-2ndC

Table 1. Context spotdates and condition of ceramic assemblage

Spotdate code:
LIA – late Iron Age – pottery with 'belgic' characteristics
ERB – early Roman – usually 1st-2nd century, sometimes with LIA characteristics
LRB – late Roman – usually 3rd-4th century
MED – medieval – in this case late 13th-14th century

Condition:
F – fair (average condition – mostly unabraded, some diagnostic sherds)
G – good (better than 'fair' – unabraded diagnostic sherds, usually with more than one belonging to same vessel; consistent spotdate)
P – poor (poorer condition than 'fair' – small, usually single abraded, undiagnostic sherds)

Range and variety

Fabric code	Pottery description	Sherds	Weight (g)
Late Iron Age and early Roman			
F28	Sand tempered	1	3
F30	Sand and calcareous inclusions	1	7
F02	Grog and flint tempered	1	22
F05	Grog, sand and calcareous inclusion	2	8
F06A	Grog tempered - fine	2	15
F06B	Grog tempered - medium	34	288
F06C	Grog tempered - coarse	2	151
F07	Shell tempered	7	51
F09	Grog and sand tempered	2	13
R01A	Samian – Central Gaulish	3	39
R03B	Gritty white ware	6	96
Late Roman			
R09A	Soft pink grogged	24	561
R11	Oxidised	92	650
R11D	Oxford colour coat	9	94
R11E	Oxford white mortaria	12	287
R11F	Oxford red mortaria	4	83
R12B	Nene Valley colour coat	1	2
R35	Roman grog tempered	20	617
Roman			
R03C	Smooth white ware	2	41
R03E	Fine white ware	4	40
R06A	Grey ware – Nene Valley	8	72
R06B	Grey ware – coarse	58	477
R06C	Grey ware – fine	83	640
R06E	Grey ware – calcareous inclusions	1	59
R06H	Grey ware – white slipped	1	2
R06I	Grey ware – black slipped	10	97
R07	Black ware	1	16
R07B	Black ware – sandy	20	137
R07C	Black ware – gritty	1	2
R13	Shell tempered	36	243
R40	Reduced sandy	7	65
Medieval			
C09	Brill/Boarstall ware	1	14

Table 2. Quantification of the pottery assemblage

The earliest pottery is late Iron Age in date and comprises sand, grog and shell-tempered wares. Most are abraded and undiagnostic, in particular the grog-tempered sherds, which may be mis-identifed late Roman R35. Identifiable forms are cordoned jars, lid-seated jars, storage jars and platters in grog-tempered fabric, and bowls and flagons in early Roman fabrics.

Fabrics which span the whole Roman period have been allocated a broad Roman date. There are, however, some forms which may be early in date,

such as the miscellaneous sandy R40 and sandy black ware R07B jars with cordons, which hark back to the late Iron Age 'belgic' tradition. Equally, the jars with undercut rims in shelly fabric R13 may be late Roman in date.

Most of the dateable pottery is late Roman in date. It comprises vessels from a small number of sources. The most common source appears to be Oxfordshire, with oxidised and colour coat wares predominating. The colour coats were mass manufactured from about the mid-3rd century onwards with a wide distribution. A single small fragment from a Nene Valley colour coat vessel was found. Mortaria from Oxforshire also occurred, both white and red fabrics. None were stamped. A single illiterate stamp was found in the base of an Oxfordshire colour coat vessel (RF1).

Grog-tempered wares occurred as thick bodied sherds, 10-15mm thick, probably from basic utilitarian kitchen wares. Although Soft Pink Grogged ware R09A is a local fabric, with kilns excavated at Stowe Park, Buckinghamshire, it has a wide distribution as far as Chester, Droitwich and Leicester (Marney 1989, 67; Taylor 2004, 62). It has been dated from the late 2nd century but continued in use into the 5th century (Marney 1989, 55). The hand-made grog tempered fabric R35 is similar to some sherds in the coarse version of 'belgic' grog-tempered ware. However, it has been found consistently with late Roman pottery on other sites (Slowikowski forthcoming), and is likely to be contemporary with R09A.

Few of the sherds showed evidence of use in the form of sooting, although a collared flagon in fabric R03B had a patchy sooted exterior, and seven other body sherds in grey ware, oxidised ware and smooth white ware were also sooted. The majority of vessels were either tablewares or storage vessels. Holes were recognised in two vessels: a post-firing hole, 7mm in diameter, in the base of an oxidised (R11) vessel, and a pre-firing hole, 10mm in diameter, in a the body of a black sandy (R07B) vessel.

Imported pottery is rare; only three sherds of Central Gaulish samian were found, two from Lezoux and one from Les Martes de Veyre. Two forms were identified: a Drag.33 cup, dating to the first half of the 2nd century, and a mortarium, possibly Drag.45, dating to the later 2nd century.

A single medieval sherd was found with Roman sherds in (2902) and is likely to be intrusive. It is from a Brill/Boarstall jug dating to the late 13th or 14th century and is the only evidence of post-Roman activity on the site.

Potential for further analysis

The assemblage has only moderate potential for further analysis. The pottery associated with the late Roman structure in Trench 30 and the early Roman features in Trench 57 should be quantified by form as well as fabric. Further analysis of this pottery will help to place it in its cultural, spacial and temporal context. In addition, the stamped sherd, uncommon in the late Roman period, should be illustrated and analysed further to check for comparanda. No other pottery requires illustration.

Catalogue of pottery

Cxt	Fab	Form	Sh	Wt	Comments
202	R06C	BWLE	20	118	I-INT WH RES
202	R11		10	31	
202	R11E		1	27	ABR
202	R35		1	132	
1903	R35		1	34	ABR
2902	C09		1	14	JUG
2902	R03B	FLG	2	14	PATCHY S EXT; COLLARED FLG VRW
2902	R06C		3	18	
2902	R07	BWLP	1	16	
2902	R11	FLG; BWLP	3	8	H/S
2902	R11F	MORT	1	36	
2902	R13		5	20	
2904	F06B	JARC; JARS	9	58	JARS IS QUITE SM
2904	F07	JARL	6	49	
2904	R06C		1	11	
2904	R7C	JARE	1	2	
2904	R09A		1	8	
3001	R01A	MORT	1	25	
3001	R01A	BWL	1	5	
3001	R03C		1	16	1-S EXT BS
3001	R03E		2	5	
3001	R06A	JARE	7	66	2-S EXT BS
3001	R06B	BWLF; JARE	41	307	
3001	R06C	JARU; JARE	49	418	1-SM DIA BS 35MM
3001	R06H		1	2	
3001	R06I	JARE	9	96	
3001	R07B		16	98	1-HOLE IN BS PRE-FIRING 10MM
3001	R09A		19	412	THICK SHERDS; 1-HORIZ INC
3001	R11	JARU; JARE; BWLB	60	527	3-S EXT; 1-S INT
3001	R11D	BWLB	8	93	1-ILLITERATE STAMP INT BS (SF1)
3001	R11E	MORT	6	121	
3001	R11F	MORT	2	12	
3001	R12B		1	2	
3001	R13	JARE	21	122	
3002	R03B	FLG	3	80	POSS VRW? 3-THICK WIDE VERT GROOVED H/S FROM 2-H AMPHORA-LIKE FLG
3002	R06B		5	29	
3002	R06C		5	23	
3002	R06I		1	1	
3002	R07B	JARC	2	32	
3002	R09A		1	26	
3002	R11	JARU; JARE	3	14	JARE - THIN 2MM POSS SM VESS
3002	R11		1	13	HOLE IN BS POST FIRING 7MM
3002	R13		4	26	
3002	R35		1	18	V COARSE
3306	F09		1	5	COARSE - EQUAL SAND/BLACK GROG
3306	F28		1	3	LIA ?
3308	F06C		1	22	V ABR
3313	F30		1	7	FAIRLY FINE MIXED FAB, QUITE SANDY

					AND HARSH BUT WELL SMOOTHED INT BUT NOT EXT
3314	F02	JARC	1	22	PITTED INT
3314	F06B		5	20	ABR; POSS R35
3314	R09A	JARS	1	62	V THICK ORANGE SH/S 15MM
3314	R40		2	6	MISC REDUC SANDY
5605	R03C	FLG?	1	25	BS POSS FLG; PINK
5605	R06B		1	9	HORIZ ROULETTING - 'MAGGOTS'
5605	R06E		1	59	THICK 8MM
5605	R09A	BWE	1	40	LARGE THICK VESS 10MM
5605	R11		1	13	
5605	R11E	MORT	3	117	1 VESS
5605	R11F	MORT	1	35	
5605	R13	JART; JARU	5	73	
5606	R06C		1	5	
5606	R11		1	6	
5606	R35		2	53	
5702	R13		1	2	
5702	R0		1	2	
5704	F06B	PLAT;	6	34	
5704	F07		1	2	
5704	F09	JARC	1	8	
5704	R03E	JARE	1	4	
5708	F05		1	4	ABR
5708	F06B		7	66	
5708	F06C		1	129	1 VESS THICK 8MM
5708	R40		1	2	MISC ORANGE SANDY
5713	F05		1	4	REDUC
5714	R01A		1	9	
5714	R09A		1	13	
5716	R03E		1	31	
5716	R06C		1	22	
5716	R07B		1	5	
5716	R11	BWLB	6	20	
5716	R11D		1	1	
5716	R11E		2	22	
5716	R35	JARE	5	128	
5716	R40	JARC	3	55	REDUC; SANDY AND CALC; HARSH
5811	R35		9	228	1-PITTED INT; 2-INT WH RES; 1-OXID PINK BUFF WITH IMP DEC ON SH
6103	F06A	BWLN	2	15	SPALLED
6103	F06B	JARL	7	110	JARL WITH INC ARC ON BODY
6103	R03B		1	2	
99999	R06A		1	6	
99999	R06B		11	12	
99999	R06C	BWLT	3	25	
99999	R07B	BWLF	1	2	
99999	R11	JARE	7	18	
99999	R35		1	24	EXTREMELY COARSE

Appendix 7: Ceramic Building Material Assessment

A.M.Slowikowski

Introduction

A total of 85 fragments, weighing 5.995kg, of ceramic building material (cbm) was recovered. The cbm was recorded as the pottery. In addition the attributes of thickness and combing were also recorded. This was entered onto the cbm table of an Access database.

CBM descriptions

A single fabric (fabric 1) was used although there are some variations within it.

Fabric 1 - orange sandy slightly micaceous fabric with frequent red iron ore, small calcareous inclusions and larger clay pellets or grog.
Fabric 2 – as fabric 1 but slightly harder fired and with the addition of sparse but large flint, up to 10mm.
Fabric 3 – as fabric 1 but with the addition of frequent calcareous inclusions, 0.1-0.5mm, but may be up to 10.0mm
Fabric 4 – buff fabric with frequent quartz inclusions and red iron ore as well as rare but large sandstone fragments, up to 4.0mm. The sherds are relatively thin and have a slight curvature. They could be from coarse hand-made pottery, possibly Iron Age in date.
Fabric 5 – fine micaceous fabric with red and white streaks throughout.
Fabric 6 – abundant very coarse limestone inclusions, approx. 0.5-5.0mm but may be up to 10mm.

Form	Fabric					
	1	2	3	4	5	6
Brick	6		1			
Flue	4	6	4			
Imbrex	19					
Tegula	12					
Flat	3	2	1	2		
Misc	18					
Kiln bar?	1					
Fired clay					5	1

*Table **. Cbm forms by fabric, quantified by sherd*

Fabrics 1-4 were used for a variety of brick and tile but fabrics 5-6 occurred only as fired clay, which are all small lumps with no surfaces or wattle impressions (table 2). The cbm included roofing materials (*tegulae* and *imbrices*) and bricks, which may have been used either as flooring material or in walls.

Only fragments of flanges survived on the *tegulae*, and all appeared to be D-shaped. One partial cut-out survived, but not enough to determine its full shape. No full dimensions survived, although thickness varied between 15-30mm, with most measuring 20mm. Other roof tiles were *imbrices* but, like

the *tegulae*, no dimensions could be measured. They would have been used together with the *tegulae*, or overlapping on the roof ridge.

Fragments of box flue tiles were found only in the demolition layer (3001), suggesting the presence of a late Roman building substantial enough to have a hypocaust. Tile thicknesses ranged from 15-25mm, with 20mm being the most common. Keying patterns were made by combing and widths of combs could be measured on a number of fragments, ranging from 20-45mm. Most had either four or five prongs, but there was one 30mm comb with nine prongs.

Four bricks were found, generally well made although one had cracked surfaces, indicating that it had been improperly dried out prior to firing. No dimensions survived but thickness was consistent at 35mm. Although the size of these bricks could not be ascertained, they were used either as pillar tiles for a hypocaust, flooring or bonding of walls (Brodribb 1987, 34). Three were found in the demolition layer (3001) and the presence of box flue tiles in the same context suggests a likely use for the bricks as hypocaust tiles.

A single possible kiln bar was found, suggesting the presence of pottery manufacture in the vicinity.

Chronology

The cbm is intrinsically undateable although the largest group, from the demolition layer (3001) of the structure in Trench 30, is dated to the late Roman period by the pottery.

Potential for further analysis

The cbm has no potential for further analysis.

Catalogue of ceramic building material

Cxt	Fab	Form	Sh	Wt	Thickness	Comments
2902	1	BRK	1	69	30	
3001	1	BRK	1	95	35	
3001	1	BRK	4	296	35	1 BRICK; SOFT VERSION BUT WITH GREY CORE DUE TO THICKNESS
3001	1	FLAT	1	30	13	INTR MOD TILE?
3001	1	FLUE	1	130	15	20MM 4-PRONG COMB; SQ PATT WITH CROSS IN CENTRE; POSS 4 SQUARES ON 1 FACE EACH 10MM SQ
3001	1	FLUE	3	157	15	1-23MM 4-PRONG COMB
3001	1	IMB	8	893	20	
3001	1	IMB	6	897	15	
3001	1	IMB	3	101	10	
3001	1	MISC	17	137	0	UNID FRAGS
3001	1	TEG	1	47	0	D-SHAPED FLANGE FRAG
3001	1	TEG	1	12	0	NO SURFS
3001	1	TEG	1	147	20	
3001	1	TEG	1	77	23	FLANGE BROKEN OFF
3001	1	TEG	1	127	30	FLANGE BROKEN OFF
3001	1	TEG	1	148	15	D-SHAPED FLANGE
3001	1	TEG	1	68	20	
3001	1	TEG	1	183	20	D-SHAPED FLANGE;
3001	1	TEG	1	54	0	PART OF CUT OUT IN FLANGE
3001	1	TEG	1	90	20	FLANGE BROKEN OFF
3001	1	TEG	1	10	0	BROKEN PART OF FLANGE
3001	2	FLUE	1	77	20	
3001	2	FLUE	4	118	20	1 TILE; COMBED
3001	2	FLUE	1	232	25	CORNER; 35MM 5-PRONG COMB
3001	3	BRK	1	359	35	CRACKED SURFS - NOT COMPLETELY DRY WHEN FIRED?
3001	3	FLUE	1	70	15	CORNER WITH PATCH INT SOOT
3001	3	FLUE	1	290	20	CORNER; 45MM 5-PRONG COMB
3001	3	FLUE	1	43	20	
3001	3	FLUE	1	324	25	30MM 9-PRONG COMB; WAVY LINES
3001	5	FC	4	32	0	
3001	6	FC	1	15	0	
3002	1	FLAT	1	22	0	
3002	1	FLAT	1	36	15	
3002	1	IMB	1	196	15	
3002	1	MISC	1	33	0	NO SURFACES
3002	2	FLAT	2	69	15	
3314	1	TEG	1	31	15	BASE OF FLANGE
5704	1	KBAR	1	30	0	CORNER FRAG AT LEAST 25MM THICK; ADDED CRUSHED SHELL 3.0-10MM; EXT WH COATING-FIRING CONDITIONS?
5716	1	IMB	1	86	15	SOFT VERSION
5716	3	FLAT	1	123	20	HARD FIRED PURPLE SURFS, DK ORANGE CORE; SQ PEG HOLE 25MM FROM EDGE
5716	4	FLAT	2	34	10	HAND FORMED FLATTISH FRAG, THINNER THAN THE REST - POTTERY?
5716	5	FC	1	7	0	

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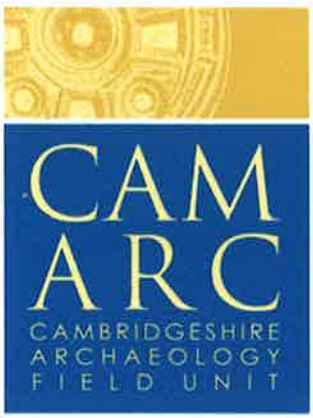
Plate 1: Ditch 2905

Plate 2: Feature 3010 with mettled surface (3011) and layer 3001

Plate 3: Ditch 5603

Plate 4: Pit 5604



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