



Northamptonshire County Council

Northamptonshire Archaeology

ARCHAEOLOGICAL INVESTIGATIONS

AT THE FORMER CATTLE MARKET

CARMARTHEN

CARMARTHENSHIRE

OCTOBER 2007-MAY 2009



Emma Rae

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Report 09/47

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Front cover: 'The Bulwarks', Carmarthen, facing north.

Back cover: Western rampart of the Civil War ditch, Carmarthen, facing south.

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Investigations at the Former Cattle Market, Carmarthen, Carmarthenshire	
<p>An archaeological investigation was undertaken on the sites of the redundant Cattle Market and current General (Provisions) Market, Carmarthen, Carmarthenshire. The results confirmed that the 17th-century Civil War defensive circuit on the north side of the town lies within the site on an approximate east to west alignment. The infilled ditch was identified as having a sequence of fills suggestive of deliberate slighting of an earthen rampart. The evaluation also confirmed the presence of a single bastion. No definitive evidence was found for either the remains of an earlier defensive ditch or an internal, secondary line of defence similar to that found on the surviving western earthworks at 'The Bulwarks.' Additionally, no evidence was found for the medieval chapel of St Catherine's which was speculated to have been located on the site. The investigation confirmed the presence of a mill pond, possibly associated with the site of St Catherine's woollen mill. The pond was an extensive feature, with the available map evidence showing a distinct change in shape between 1834 and 1850. The mill pond clearly post-dated the Civil War ditch and there was evidence for retraction prior to its final abandonment and infilling in 1969. The only other features of note were two small gullies and a ditch located north of and parallel to the Civil War ditch. The latter correlates with a field boundary shown on an 1834 plan of Carmarthen.</p>		
Project type	Trial trench evaluation/mitigation	
Site status	Disused car park	
Previous work	Trial trenching (Smith 2006)	
Current land use	Public car park	
Future work	Trial trenching 2009	
Monument type/ period	17th-century Civil War defences	
Significant finds	None	
PROJECT LOCATION		
County	Carmarthenshire	
Site address	St Catherine's Street Carmarthen Carmarthenshire	
Study area (sq.m or ha)	4 ha	
OS Easting & Northing	240976 220307	
Height OD	20m	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	-	
Project Design originator	Under Construction Archaeology	
Director/Supervisor	E Taylor / S Carlyle / E Rae / T Upson-Smith	
Project Manager	T Walsh/A Yates	
Sponsor or funding body	Simons Developments Ltd	
PROJECT DATE		
Start date	October 2007	
End date	May 2008	
ARCHIVES	Location (Accession no.)	Content (eg pottery, animal bone etc)
Physical		Pottery, animal bone, glass, clay pipe
Paper		Site records, plans, sections
Digital		Site photographs

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**ARCHAEOLOGICAL INVESTIGATIONS AT THE FORMER
CATTLE MARKET, CARMARTHEN
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OCTOBER 2007-MAY 2009**

Abstract

Between October 2007 and May 2009, Northamptonshire Archaeology carried out trial trenching and excavation on the sites of the redundant Cattle Market and current General (Provisions) Market, Carmarthen, Carmarthenshire. The results confirmed that the 17th-century Civil War defensive circuit on the north side of the town lies within the site on an approximate east to west alignment. The infilled ditch was identified as having a sequence of fills suggestive of deliberate slighting of an earthen rampart. The evaluation also confirmed the presence of a single bastion. No definitive evidence was found for either the remains of an earlier defensive ditch or an internal, secondary line of defence similar to that found on the surviving western earthworks at 'The Bulwarks.' Additionally, no evidence was found for the medieval chapel of St Catherine's which was speculated to have been located on the site. The investigation confirmed the presence of a mill pond, possibly associated with the site of St Catherine's woollen mill. The pond was an extensive feature, with the available map evidence showing a distinct change in shape between 1834 and 1850. The mill pond clearly post-dated the Civil War ditch and there was evidence for retraction prior to its final abandonment and infilling in 1969. The only other features of note were two small gullies and a ditch located to the north of and parallel to the Civil War ditch. The latter is probably a field boundary shown on an 1834 plan of Carmarthen.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by Under Construction Archaeology (UCA), acting on behalf of their client Simons Developments Ltd, to undertake an archaeological evaluation of the redundant Cattle Market and current General (Provisions) Market, Carmarthen, Carmarthenshire (NGR: SN 40976 20307; Fig 1). The work was carried out as part of a multi-phase evaluation prior to the proposed redevelopment of the site for a retail-led multipurpose scheme.

Phase 1 was undertaken by Cambrian Archaeological Projects Ltd (CAP) and comprised the excavation of two evaluation trenches, Trenches 1 and 2, which sought to determine the presence or absence of a woollen mill and Civil War ditch (Smith 2006). Phases 2 and 3, the subject of the current report, comprised a mixture of trial trenching and mitigation areas. Trenches 3-7 and 12-15 were excavated during October to November 2007, Trenches 16a-c, Trench 18 and the mitigation areas (Areas A-I) between February and May 2008. Two further trenches 19 and 20 were excavated on the site of the provisions market in May 2009.

The work met the requirements of a project design (Rosenberg 2007) and specification (Taylor 2007). All works were carried out in accordance with the Institute for Field Archaeologists' *Standard and Guidance for Archaeological Evaluations* (1994, revised 2001).

2 TOPOGRAPHY AND GEOLOGY

The site is located on the north-western edge of the historic town of Carmarthen, (Caerfyrddin), Carmarthenshire. Generally, Carmarthen lies on the north bank of the River Towy (Afon Tywi), on the lower slopes of a range of steep, high hills that climb to c 150m aOD above the valley floor. A tributary river, the Afon Gwili, flows southwards and reaches its confluence with the River Towy on the eastern edge of the town, and a small stream, the Tawelan Brook, skirts its western edge. The town is situated at the junction of two major east to west roads, the A40 and A48, and two north to south roads, the A484 and A485.

The area of development comprises three parcels of land totalling approximately 4 hectares and is bounded on all sides by urban development. The site is divided by St Catherine's Street and Fair Lane. To the north of St Catherine's Street and either side of Fair Lane there was a variety of hard standing surfaces, relating to the use of the site as a cattle market and car park. The area to the south of St Catherine's Street is occupied by the Provisions Market (built 1981) and associated open spaces and car parking areas. The site lies at approximately 20m aOD. The northern part of the site slopes gently southwards and eastwards but there are clear level changes that appear to be artificial, especially within the area of a former Esso garage, where a c 1m drop was observed. The southern part of the site is broadly level, perhaps as a result of deliberate levelling activities in the 19th century.

The solid geology comprises Ordovician shales and mudstones of the Arenig and

Llanvirm Series (BGS 2001), overlain by glacial gravels and sands deposited by successive glaciers debouching from the Towy Valley during the Pleistocene. The drift deposits contain erratics from Ireland, North Wales and South-West Scotland, introduced by Irish Sea ice (Pringle and Neville George 1948).

3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

A detailed Desk-Based Assessment (DBA) for the site (Rosenberg 2005) identified areas of potentially significant buried and built heritage (Fig 2). In summary, no evidence for prehistoric activity is known within 500m of the proposed development site. The earliest activity dates to the Iron Age and is situated approximately 650m to the east of the site at 105 Priory Street (SMR 209), where a group of finds was recovered. The site of a possible hillfort, known as Castle Crispin (SMR 9868), lies 680m to the west. A major hillfort known as Merlin's Hill is situated approximately 4.5km to the east of the site and may have acted as a central place for the local Celtic tribe, the *Demetae* (Hughes 2006).

Carmarthen was an important Roman and medieval centre with extensive urban settlement during both periods. The proposed development site lies to the north-west of both settlements (Fig 2) and no known evidence was identified for the presence of Roman activity within the site boundary. A Roman fort, dated to *c* AD75, was constructed in the vicinity of King Street and Spilman Street, to the south-east of the development area. The fort was replaced by a smaller, reduced fort towards the end of the 1st century AD and a civilian settlement known as *Moridunum Demetae* was established to the east in the 150s. The Romanised name *Moridunum* derives from the Celtic words *mori* (sea) and *dunos* (fort) and was initially given to the fort prior to it being transferred to the town (Rivet and Smith 1979). The town would have functioned as a *civitas* or regional administrative centre for the local *Demetae* tribe and, in common with most Roman towns, contained a gridded street pattern, flanked by half-timbered structures and a number of high status buildings, including a temple, bath houses and an amphitheatre. The latter still exists as a substantial earthwork to the east of the town. In the 3rd century AD, the Roman town was enclosed by an earthen defensive circuit, later faced with stone.

The archaeological record for the early medieval period (5th-10th centuries) is generally poor, limited to a length of ditch dated to the 5th century within the early Roman fort and three 8th century ditches on the site of St John's Priory.

In the medieval period Carmarthen comprised two towns under different

jurisdictions, Church and Crown. Old Carmarthen lay within the walls of the old Roman town and was granted by Henry II to the Priory of St John's, which was to become one of the richest priories in Wales, in the mid 12th century. The Priory lay just beyond the walls of the town to the east. New Carmarthen was centred on the early 12th century castle, which was established on a prominent bluff overlooking the River Towy (Tywi) by Henry I, to secure an Anglo-Norman foothold in south-west Wales. The royal borough of New Carmarthen was founded between the castle and the walls of the Roman town shortly after the castle was constructed. In the early 13th century, the new settlement was subsequently enclosed by a series of stone walls enclosing an approximate area of 4ha. This was followed by a period of urban, extra-mural expansion to the east, which was also fortified after an attack by Owain Glyndwr's forces in the early 15th century.

Within the development site, the DBA suggested evidence for the presence of a medieval chapel called St Catherine's (SMR 47), which was built as a replacement for a hermitage under the patronage of the Priory of St John's. The available evidence indicates that the chapel was located immediately to the north of St Catherine's Street, although James (1980) suggested that the chapel lay within the town walls. However, the DBA stressed that even if this was the case, buildings of a domestic nature for the priests could still have been located within the site boundaries.

It is known that a watermill (SMR 48) and associated mill pond (SMR 98), probably under the control of St Catherine's chapel, also stood on the northern side of Water Street (now St Catherine's Street) in an area occupied by the former Esso service station. It is not clear whether this is the same watermill, described in documents dating from the 13th century onwards.

After the Dissolution, in 1546, New and Old Carmarthen were amalgamated as a Borough. In the mid-17th century, during the Civil War, a series of fortifications were constructed by Colonel Gerard to protect the northern and western sides of the town. The western defences still partially survive to the south of Lammas Street, as a ditch and bank earthwork with a single bastion known as 'The Bulwarks' (SMR 76; Plate 1). They are considered to be the best example of Royalist town fortifications in the country (Plate 2). Within the development area, the exact line of the northern defences were not known, but they were believed to have run parallel and to the north of St Catherine's Street, to meet up with a recorded section of the defences to the east that were known to have been levelled c 1860.

With the exception of St Catherine's mill pond and adjacent properties fronting St

Catherine's Street, it would seem that no further development occurred on the site until the construction of the Provisions Market and the market clock tower (SMR 17319/NMR23310 and SMR 175/NMR 32650 respectively) to the south of St Catherine's Street in 1846. Further expansion to the north of St Catherine's Street and east of the mill pond was undertaken during the 1850s, with the construction of a new slaughterhouse (replacing an existing one in John Street to the south-east) and an associated livestock market. A new road, Slaughter House Lane, later called Fair Lane, was also constructed within the development area (Fig 3). To the west of the mill pond, the area remained open fields until the 1960s. The cattle market saw further expansion throughout the 20th century, until its complete reconstruction in 1981, when the 19th century buildings were cleared, with the exception of the market clock tower, to make way for a new covered market. During the 1960s St Catherine's Mill was demolished and replaced by an Esso garage. In 2006, two trenches were excavated by CAP in an attempt to locate the woollen mill and Civil War defences (Smith 2006), although no trace of these was identified.

4 AIMS AND OBJECTIVES

The trial trenching evaluation had the specific objective of establishing the state of preservation and the precise location of archaeological remains within the proposed development site in order to inform the development process. Based on the findings of the desk-based assessment (Rosenberg 2005) the following aims were identified:

- To determine the presence or absence of as yet unidentified archaeological remains, particularly of the Roman period
- To assess the state of preservation of both the Civil War defences and St Catherine's Mill
- To precisely locate the medieval chapel, if it exists within the site, and to determine its nature and extent
- To prepare a detailed mitigation strategy

The mitigation strategy was proposed in order to deal with the Civil War ditch and related features, and to identify where no archaeological mitigation was warranted. The aims of the mitigation works were therefore:

- To confirm and plan the precise line of the Civil War defences, including any deviations from the projected line to accommodate features such as

bastions

- To determine the nature of those defences and to identify whether any associated features, structures or deposits survive in the archaeological record
- To establish whether any structures associated with the defences pre-date them and represent reuse of earlier buildings (e.g. St Catherine's Chapel)
- To provide a record of the form of the defences at intervals along the exposed length
- To determine a relationship between the Civil War ditch defences and the mill pond
- To determine the date of construction of the mill pond and the date/nature of any alterations to it
- To establish whether structures/deposits relating to the mill pond survive within the area of strip, map and sample
- Through the collection of environmental data, to better establish the changing nature of the environment, food production and economy through time.

5 METHODOLOGY

Eleven evaluation trenches of varying length (Trenches 3/4 5, 6, 7, 8 and 12-16a-c and 18) and nine mitigation areas (areas A—I) were excavated under continuous archaeological supervision (Figs 3-5). The trial trenches were excavated by a 360° 'rubber duck' type excavator fitted with a breaker and the mitigation areas by a 360° mechanical excavator and a Volvo dump truck. The overburden was removed using either a breaker or toothed ditching bucket as necessary, with underlying deposits removed with a 2m wide toothless ditching bucket to the first significant archaeological layer, or in its absence, the natural substrate. All excavations and associated spoil heaps were secured using Heras fencing during excavation and backfilling.

Where deep deposits (over 1.2m) were encountered, machine excavated sondages were opened to investigate their nature and backfilled shortly afterwards or were stepped to allow the safe manual excavation and recording of features.

All excavated areas were plotted on a plan of appropriate scale and related to the Ordnance Survey National Grid. All archaeological features, where possible, were sampled by hand to determine their date and character.

Plans were drawn at a scale of 1:100 or 1:50. Profiles of excavated features were drawn at a scale of 1:10 or 1:20 as appropriate. The heights of all deposits were established relative to Ordnance Datum. A full photographic record of the excavation comprising colour slide, black and white film and digital shots was maintained.

Monitoring by Cambria Archaeology was carried out on a daily basis during the trial trenching to facilitate the rapid backfill of trenches and reduce the risk of health and safety hazards, and weekly during mitigation of the large civil war ditch.

All works were conducted in accordance with the IFA *Standards and Guidance for Archaeological Field Evaluation* (1994, revised 2001) and the *Code of Conduct of the Institute of Field Archaeologists* (1985, revised 2000).

6 RESULTS

The modern ground surface across the former cattle and current provisions market site averaged between 17.50m-19.80m aOD, with a distinct slope from north-west to south-east. The modern tarmac surface overlay overburden deposits, which measured between 0.57m to 1.11m in depth, comprising a series of mixed soil deposits, levelling layers, demolition debris and the footings of the former cattle market buildings. The footings were noted as having variable impact on underlying archaeological remains across the site. In general, the natural substrate comprised sub-angular glacial gravels, derived from local shales and mudstones, with inter-bedded seams of coarse orange brown sand. The weathered surface of the underlying bedrock was exposed in several of the deeper excavations.

No evidence for prehistoric, Roman or medieval remains was encountered in the investigated areas. Within the development area to the north of St Catherine's Street, no archaeological remains were encountered in Trenches 11, 13, 14, 15 and Area H. Trenches 18, 19 and 20 which lay to the south of St Catherine's Street, were also found to be completely devoid of archaeology. Archaeological remains were encountered in Trenches 3/4 (combined), 5, 6, 7, 12, 16a and within areas A, B, C, D, E, F, G and I (Figs 3-5).

6.1 St Catherine's Chapel and associated watermill

Area H (Figs 3 and 4) was irregular in plan and measured approximately 25m by 10.5m. It was positioned in the area of the demolished Esso garage and incorporated the proposed sites of Trenches 8 and 9, which could not be excavated prior to the demolition of the garage due to Health and Safety concerns. This was thought to be the area most likely to yield evidence for the documented medieval chapel of St Catherine's, as shown on a map of 1786. Apart from post-medieval/modern overburden and a spread of dark grey silt clay (1142), which appeared to have accumulated within a possible natural hollow [1143], it was devoid of archaeology. This supports the findings of the earlier intervention (Smith 2006, trench 1).

6.2 The Civil War ditch

The 17th-century Civil War ditch was encountered in the northern part of the development site (the former cattle market) in Trenches 3/4, 12, 16 and Areas A, D, E, F, G and I (Figs 3-5). It was on a general east to west alignment and a single bastion was located to the west of the former mill pond. In total, seven full sections of the ditch were excavated.

In general, the ditch had moderate to steep sides with a slight step on the northern (exterior) slope of the ditch in Areas A and D. In all but one case (Area I), where a steeper, more concave base was observed, it had a flat base and quite regular profile. The sections displayed a similar sequence of deposits, showing initial use, a period of erosion and an episode of deliberate backfilling, probably from the slighting of the internal earthworks. The characteristics of the Civil War ditch within each of the areas are discussed in greater detail below.

Trenches 3/4 and 12

The Civil War ditch was found at the south-east end of Trenches 3/4 and 12 (Fig 3-5). In Trench 3/4, the Civil War ditch [306] was found at a depth of approximately 17.8m aOD, truncated by a later gully and sealed beneath 1.1m of post-medieval/modern layers. The north face of the ditch was steep-sided whilst the south face was less steep and slightly concave (Figs 5 and 6, Section 1)

In Trench 12 the Civil War ditch [1205] (Plate 3) was found at a depth of approximately 17.1m aOD beneath a shallower depth of overburden, up to 0.68m deep (Fig 6, Section 3).

Both ditch sections measured approximately 7m wide by 1.35m deep, their broad, flat bases filled by primary deposits of mid red brown silt clay with inclusions of gravel

and mudstone (307 and 1206), overlain by secondary/upper fills of mid orange/brown silt clays with occasional stone inclusions (308 and 1207). The later fills have been interpreted as deliberate backfill from the slighting of the associated internal bank to the south of the ditch. Sherds of 16th- to 19th-century pottery were retrieved from the upper fill (1207) of the ditch in Trench 12.

Area A

Area A measured approximately 16m square and was positioned 22m to the south-west of Trench 3/4, adjacent to the western margin of the proposed development area (Fig 3). The ditch [1054] (Fig 7, Section 12) measured approximately 6.7m wide by 2.1m deep and had a flat and regular base. The sides of the ditch were angled at 60-65° on both the southern and northern sides, with a slight step on the northern slope. The primary fill (1053) was up to 0.25m thick and comprised firm mid brown silt clay. This was sealed by mid brown silt clay (1052), which was only present on the southern side of the ditch, and blue-grey silt clay (1051) measuring up to 0.43m thick. The three deposits most likely derive from the weathering of the ditch sides during its initial use, particularly from the southern face. Sequentially, these deposits were sealed by fills (1050), (1049) and (1048), which appear to be the result of deliberate backfilling. The earliest fill in this sequence (1050) comprised dark grey silt clay, sealed by mid brown silt sand (1049), measuring up to 1.8m thick, with a high shale content and displaying clear tip lines suggesting backfilling from the south side of the ditch. The final fill (1048) was similar in composition to (1049), measuring up to 1.16m deep, but the tip lines were more diffuse.

Area D

Situated 2m to the east of Trench 3/4, Area D measured approximately 12m by 9.5m. The Civil War ditch was found at a depth of approximately 18.0m aOD, beneath a modern service trench [1074](1073) and successive layers of post-medieval/modern overburden, (1066-1069), with a combined thickness of up to 0.57m. Layers, (1059)/(1068), and the fill of a modern service trench [1076], (1075) contained a number of post-medieval pottery sherds.

The ditch [1087] angled sharply to the north to form the south-west corner of a projecting bastion (Plate 4). The ditch splayed at this point to reflect the angle of turn, similar to that reflected in a surviving bastion at the 'The Bulwarks' (Plate 1). It measured approximately 8m wide by at least 2.2m deep, where excavation was ceased for Health and Safety reasons (Figs 3-5 and 8, composite of Sections 13 and 15). The profile of the ditch was slightly different to that observed in Area A, having a slightly

rounded profile with the south-eastern side having a steep-sided, splayed slope. The north-western side of the ditch was stepped [1152], a characteristic that was observed in the northern edge of the ditch in Area A. This may represent the remnant of the original cut of the ditch which was enlarged by recut [1087]. The earlier cut [1152] was filled by mid brown sand (1081) with frequent shale pebbles, measuring 0.18m thick, and mid brown silt clay (1080) measuring 0.25m thick, both resulting from weathering of the north slope.

The fill sequence within ditch [1087] was similar to that recorded in ditch [1054], with the earliest observable fill a primary deposit (1086) comprising mid grey brown silt clay with shale pebbles, measuring up to 0.5m deep. This was partially overlain by orange/brown sand (1085), measuring up to 0.20m deep. Both fills were probably weathered from the ditch sides. Overlying these were a series of similar clay silts (1079), (1082) having a combined thickness of up to 1.5m; with thin lenses of shale pebbles, (1083) and (1084) within (1082). These deposits probably derive from deliberate backfilling of the ditch. These were overlain by successive silt clay deposits, (1061)/(1070), (1063)/(1077), (1071), (1076) and (1078), which probably accumulated as a result of gradual weathering of the ground surface and soil movement due to ploughing. Sherds of post-medieval and Industrial period pottery were recovered from deposits (1061)/(1070) and (1071).

Area E

Area E measured approximately 15m by 18m and was positioned 22m to the north of Area D in order to follow the projected line of the west side of the bastion. The Civil War ditch was identified at a depth of approximately 17.8m aOD, sealed beneath 0.62m of post-medieval/modern build-up. The ditch [1093] measured approximately 6.4m wide by 1.7m deep and portrayed a similar profile to ditch [1087] to the south (Figs 3-5 and 9, Section 16; Plate 5). At the base and sides of the ditch, a series of similar primary and secondary deposits denoting periodic erosion, with a combined thickness of up to 0.5m, were identified (1089-1092). The fills comprised mid brown grey clay sand with varying amounts of shale pebbles, with the latest deposit (1089) containing frequent water-rolled cobbles. The upper fill (1088) measured up to 1.5m thick and comprised mid brown silt clay with tip lines indicative of deliberate backfilling, as noted above.

Area F

Area F measured approximately 12m by 9.5m and was positioned c 25m to the north-east of Area E in order to ascertain the northern limit of the projected line of the

bastion and the western extent of a later mill pond. The Civil War ditch was located at a depth of approximately 18.0m aOD, sealed beneath c 1.0m of post-medieval/modern overburden. The ditch [1103] measured approximately 7m wide by 1.9m deep and had a primary fill (1101) of silt clay containing occasional small stones and rare charcoal flecks on its southern edge (Figs 3, 4 and 9, Section 18; Plate 6). This was sealed by black grey silt clay (1102), probably derived from natural silting. This layer was overlain by two deposits of deliberately backfilled material, (1099) and (1100), from the slighting of the internal bank.

Area G

Area G was trapezoidal in plan and measured approximately 30m by 14m. It was positioned 25m south-east of Area F to investigate the east side of the bastion and its relationship to the mill pond. The remnant of a heavily truncated ditch [1124] was identified at the base of the pond at approximately 16.8m aOD, where only the primary deposits and basal profile up to 3.5m wide remained (Fig 10, Section 19). The ditch fills (1112, 1115-1117, 1123 and 1125) were firmly compacted mid to dark grey silt clays with occasional to moderate small stones and rare charcoal flecks. Due to truncation and slumping of the mill pond at this point, the later fills of the ditch were absent in this area.

Trench 16 a-c

Trench 16 (Figs 3 and 4) was positioned in the car park to the east of Fair Lane to locate the continuation of the Civil War ditch on the eastern side of the development area. Due to difficulties in identifying the ditch due to various restrictions, three trenches were machine-excavated (distinguished by suffixes a, b and c). The first trench, Trench 16a, was excavated on the projected line of the ditch as established in Trench 12, but owing to the oblique angle of the trench in relation to the ditch and other constraints, it was not identified at first. It was only during subsequent excavation in Area I (immediately to the south-east) that a stony deposit interpreted as being of natural origin in Trench 16a was re-interpreted as the upper fill of the Civil War ditch. Following the initial misinterpretation of the Civil War ditch in Trench 16a, Trench 16b was excavated to the north in search of the ditch. When no trace of the ditch was found here either, it was thought that there may have been another bastion in this area, so Trench 16c was excavated further to the north, in line with the northern edge of the bastion to the west of the former mill pond. It was not until Area I was opened up that the line of the ditch was established.

Area I

Area I measured approximately 7m square (Figs 3 and 4) and was evaluated under watching brief conditions during the construction of a haul road immediately to the east of Trench 16a. The Civil War ditch was found on a similar alignment to the ditch identified in Trench 12, having been misinterpreted in Trench 16a (see above).

The ditch [1144] was found at a depth of approximately 18.9m aOD, sealed beneath 0.50m of modern overburden and tarmac surfaces. It measured 5.5m wide by 2.5m deep and had a deeper, more concave profile than observed elsewhere on the site (Fig 11, Section 22; Plates 7 and 8). The primary fill (1145) comprised shale pebbles in a sand clay matrix. This was overlain by mid orange brown silt clay and a grey silt clay, (1146) and (1147) respectively. These deposits were overlain by backfilled material from the former internal bank, which consisted primarily of mid orange brown sand clay (1148) with frequent shale pebbles and sherds of 18th century pottery.

6.3 The mill pond

The mill pond (Fig 3) associated with St Catherine's Mill (SMR 98), which once stood on the north side of St Catherine's Street, was identified in Trenches 6 and 7 and Areas C, F and G. The pond, which contained a sequence of water-lain and modern infill deposits up to 2.0m thick, was once fed by a leat diverted off the Tawelan Brook (SMR 45).

Trenches 6 and 7

Trenches 6 and 7 (Figs 3 and 4) were positioned to locate the mill pond. Due to the instability of the edges in Trench 6, a 1.5m wide baulk was retained 7.5m from the south-west end of the trench. Owing to the distinct differences either side of the baulk, it is clear that the west edge of the pond [605] lay immediately underneath the baulk, with the mill pond fill, comprising dark brown/black clay silt (606), extending for the remainder of the trench to the east. In Trench 7, overlying the natural substrate of stony orange brown silt clay (705), was a water-lain deposit (704) identical to (606). In both trenches the pond was between 1.2m and 2m deep.

Area C

Area C measured 24m by 14.5m (Figs 3 and 4) and was positioned immediately to the north of Trenches 6 and 7 in order to investigate the relationship between the mill pond and the Civil War ditch. However, extensive truncation by the mill pond and a large concrete storm drain that ran along the north edge of the area had removed any evidence there may have been for the ditch.

The west edge of the pond was located near the centre of the area, with water-lain deposits extending to the west for a distance of *c* 17m. A small sondage was excavated by machine to establish the depth of the pond deposits. The pond [1151] was approximately 1.0m deep and the west edge had a relatively steep slope and a generally flat base. The primary fill (1017) was light yellow grey clay silt with pebbles and cobbles, overlain by secondary deposits of yellow to grey clay silts, (1015) and (1016), and a later sequence of mixed orange grey to brown clay silts containing gravel inclusions, (1021) and (1027) respectively. A small amount of 17th-century pottery was recovered from one of the secondary fills (1015). It was not possible to extend the trench further to the east to find the east edge of the pond due to the presence of sewers, drains and live services.

Area F

With the aim of locating the northern edge of the bastion and to determine its relationship with the mill pond, Area F was positioned *c* 35m to the north of Area C, in the estimated position of the apex of the bastion. The apex was missed by *c* 10m, but the east return of the bastion and the mill pond were located. At this point, the western edge of the pond [1098] was identical in profile to that observed in Area C, but was shallower, at 0.62m depth (Fig 9, Section 18). The fills, (1106), (1105), (1104) and (1097) in order of deposition, were generally similar to those in Area C, comprising clay silts, with the primary deposit (1106) containing more pebbles. Various artefacts dating from the 18th to early 20th centuries were found within fills (1106) and (1097).

Area G

Area G was positioned immediately to the north of Area C. The Civil War ditch had almost entirely been removed by the excavation of the mill pond, although traces of the ditch [1124] did survive near the pond's west edge (see Section 6.1 above). The pond [1129], which had a depth of *c* 1.2m and a width of at least 20.5m, was filled with deposits that displayed episodes of silting and dredging, with the west edge of the pond gradually shifting eastwards over time (Fig 10, Section 19). The primary fill (1122) comprised a firmly compacted mid brown clay silt with occasional small pebbles. This was overlain by successive fills of mid grey brown to dark black clay silts with occasional small- to medium-sized pebbles, (1121), (1120), (1113), (1111) and (1110), all similar to the pond fills identified in Trenches 6, 7 and Areas C and F.

6.4 Later post-medieval features

A small number of archaeological features were found scattered across the site, in

Trenches 3/4 and 5, and Areas B, G and H, which probably post-date the construction and deliberate slighting of the Civil War ditch and in the case of one feature, pre-dated the mill pond.

Trench 3/4

In Trench 3/4, to the north of the Civil War ditch, there was a re-cut ditch [314]/[317] and a gully [312] (Figs 3-5 and 6, Section 1). The gully [312], which was aligned north-west to south-east and measured 0.60m wide by 0.15m deep, was filled with mid grey silt (313). It partly cut the upper fill of the Civil War ditch [306] and contained 16th- to 19th-century pottery sherds. The gully was overlain by a possible buried plough soil (309), which sequentially was truncated by ditch [314]. The ditch was situated c 6m to the north of and parallel to the Civil War ditch and measured 4.2m wide by 0.62m deep. It had a broad concave profile, with gradual sides and concave to flat base, filled with compacted dark grey silt clay (315); the re-cut [317] was filled with a similar deposit (316). Both fills contained fragments of recent demolition rubble and sherds of 17th- to 18th-century pottery.

Trench 5

At the south-east end of Trench 5 (Fig 4), part of a small pit [513] was found at a depth of approximately 17.7m aOD, sealed beneath 1.2m of post-medieval/modern overburden. It cut a possible buried soil horizon (515) that comprised mid grey brown/orange brown silt clay and overlay the natural. The pit was only partially exposed in plan as it continued outside the limit of excavation. It measured at least 0.43m in diameter by 0.23m deep and had gradual to steep sides with a fill of compacted mid grey brown silt clay (514).

Area B

Area B, which measured approximately 25m by 10.5m (Figs 3-5), was located inside the bastion to investigate if there were any structures relating to the its use in the Civil War defence of the town. Three features were identified, a gully and two ditches, at c 0.70-0.82m below modern ground level.

The earliest feature, gully [1031], was sinuous in plan and was aligned approximately north-west to south-east. It was over 15m long, had a width of 0.54m and depth of 0.16m and was filled with mid brown grey silt clay (1030) with occasional small- to medium-sized pebbles and rare charcoal flecks.

The two parallel ditches, [1045] and [1047], measured between 1.1-1.7m wide by 0.1-0.33m deep. They had similar, shallow concave profiles, with fills of compacted

orange grey silt clay, (1044) and (1046) respectively, the latter containing small, rounded and sub-rectangular cobbles up to 0.08m in diameter. Sherds of 17th- to 18th-century pottery were recovered from both ditches, as well as glass, bone and tile fragments from ditch [1047].

The gully may have functioned as a drain, possibly associated with properties fronting St Catherine's Street to the south. The two ditches, which are on the same alignment as ditch [314] in Trench 3/4, are probably the remains of the post-medieval field/property boundary shown on the 1834 town plan of Carmarthen (Fig 13).

Area G

In the excavated sondage in Area G, the truncated remains of a partially excavated feature [1118] were observed at the base of the mill pond, truncating the Civil War ditch [1124]. The feature, which extended beyond the excavated area, was filled with compacted mid grey silt clay (1119) and measured at least 2m wide by over 0.42m deep and had a gradual sloping western edge (Fig 10, Section 19).

7 FINDS

7.1 Pottery by Paul Blinkhorn and Paul Courtney

The pottery assemblage from Trenches 3/4 and 5 comprised 11 sherds with a total weight of 739g. It was all of post-medieval date and suggests activity from the earlier 16th to late 17th century. The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*. The sherds were all generally fairly large and in good condition, suggesting that they are reliably stratified, and subject to little transportation or attrition before deposition.

Table 1: Pottery occurrence by number and weight (in g) of sherds per context by fabric type

Trench	Context	Feature Type	NDGT		GRE		MNW		Date
			No	Wt	No	Wt	No	Wt	
3/4	307	Civil war ditch	3	369					E16thC
3/4	313	Gully	1	43	2	153			M16thC
3/4	315	Post-med pit			3	143	1	13	L17thC
5	515	Buried soil	1	18					E16thC
Total			5	430	5	269	1	13	

The following fabrics were noted:

NDGT: *North Devon Gravel-tempered wares* (5 sherds, 430g). Fine to coarse earthenware, usually with an internal green glaze, occurring in a range of utilitarian forms. Moderate to dense sub-angular quartz up to 2mm. Early 16th–19th century (McCarthy and Brooks 1988, 467).

GRE: *Red Earthenwares* (5 sherds, 296g). Fine sandy earthenware, usually with a brown or green glaze, occurring in a range of utilitarian forms. Such 'country pottery' was first made in the 16th century and in some areas continued in use until the 19th century.

MMW: *Manganese mottled wares* (1 sherd, 13g). *c* late 17th–18th century. A uniform buff-fired fabric in a moderately sorted matrix. The inclusions are occasional sub-angular and rounded black ironstone up to 0.6mm. This ware is characterised by its brown 'tiger striped' manganese glaze.

The pottery assemblage from the mitigation areas comprised 125 sherds, weighing 1,850g. They were examined using a x35 binocular microscope. The Civil War ditch contexts are tabulated below (Table 2) with their approximate ceramic dating. A sherd from a slip ware dish (CMBW) in context 1050, a fill in Area A, is likely to date after *c* 1670. The basal fill of the Civil War ditch in Area G contained late 18th- to early 19th-century pottery, denoting truncation from the later mill pond.

IC SERIES

(This uses a four figure code and common name.)

Table 2: Summary of medieval pottery (*c* 1100-1500) from the mitigation areas

Context	Context description	Fabric	Sherds	Wt (g)
1046	Fill of gully	DGTU	1	3
1050	Civil War ditch fill	DGTU	1	10
1050	Civil War ditch - fill on side	GLAJ	1	12
1081	Civil War ditch fill	DGTU	1	19
1085	Civil War Ditch basal fill	DGTU	1	4
1086	Civil War Ditch primary fill	GLAJ	1	6
1142	Hollow	MALO	1	5

The following fabrics were noted:

DGTU: *Dyfed Gravel-Tempered un-glazed Wares* (3 sherds, 17g). Unglazed cooking pots/storage jars with abundant siltstone gravel inclusions up to 3mm. Kiln waste has been published from Newcastle Emlyn (Early and Morgan 2004). However, it was almost certainly produced at various centres in south-west Wales. ?Late 12th-15th century. (Papazian and Campbell 1992, 56; O'Mahoney 1985 and 1995, 9-11).

GLAJ: *Glamorgan-type jugs* (2 sherds, 18g). Green-glazed jugs (wheel-thrown) in iron rich fabric with inclusions of quartz, sandstone and red iron minerals. Colouration varies but mostly reduced grey cores with oxidised reddish surfaces. Similar jugs are also found in Chepstow (Vince 1991, 101-2: fabric Hg; Papazian 1990; Papazian and Campbell 1992, 65 and fig.30: fabric Kenfig-A). These derive from the Vale of Glamorgan on petrological grounds, and Cardiff with its 'Crockerton' suburb is a potential source. Exact dating of this fabric-type is uncertain but most widespread in 13th-14th century.

IBRW: *Iberian Red Micaceous (Merida) Ware* (1 sherd, 20g). A single unglazed sherd from a jar handle in an orange, highly micaceous fabric imported from the western coast of the Iberian peninsula. This ware is most common in the late 15th and early 16th centuries but rare examples do occur as early as the 13th century and into the 17th century (Hurst et al. 1986, 69-73; Papazian and Campbell 1992, 22 and fig.5).

MALO: *Malvern, oxidised ware* (1 sherd, 5g). This ware is oxidised orange was shipped down the Severn from the Malvern region. Inclusions include quartz and occasional Malvernian rock fragments. A single unglazed and worn sherd was recovered from context 1142 (Vince 1977 and 1985, 48-52). 15th-16th centuries. The increasing centralisation of pottery production and the increasing eclectic combination of various fabrics, glazes and decorative techniques means that classification is sometimes arbitrary, especially with small sherds.

BSYS: *Bristol/Staffordshire-type Yellow Slip Wares* (2 sherds; 2g). Finely potted yellow glazed wares with a fine buff body and red slip decoration (trailed, combed or feathered). Occasionally they use white slip on red slip for a reverse effect. Common forms include globular mugs, posset pots and chamber pots. Bristol or Staffordshire, c 1675-c 1780 (Barton 1961; Dawson 1979; Barker 1993 and 2007)..

CMBW: *Coal Measures Buffware (fine)* (1 sherd, 5g). A single wheel-thrown dish in a Coal Measures buff fabric, with white slip-trailed horizontal bands on an overall red slip (interior only) with evidence of sgraffito (cutting away of slips) technique from 1050. Probably Staffordshire or Bristol, c 1670-1720.

CMPD: *Coal Measure Press-moulded dishes* (2 sherds, 26g). These comprise press moulded dishes in a buff Coal Measure clay fabric with crimped rims and decorated by trailed/ combed/joggled white slip applied on a red slip base (Barker 1993 and 2007). Potential sources include Bristol, Shropshire/Staffordshire, Buckley in N.E. Wales and Lancashire, c 1675-c 1780 (though some production nationally into 19th century).

Table 3: Summary of post-medieval (c 1550-1800) pottery from the mitigation areas

Context	Context description	Fabric	Sherds	Wt (g)
1015	Mill pond upper fill	LGRE	1	45
1015	Mill pond upper fill	NDGT	5	171
1028	Pond Layer?	CMPD	1	10
1028	Pond Layer?	CREA	1	2
1028	Pond Layer	EWSG	1	16
1028	Pond Layer?	LGRE	2	13
1028	Pond Layer?	NDGT	3	9
1029	Pond Layer?	LGRE	1	1
1029	Pond Layer?	NDGF	1	1
1029	Pond Layer?	NDGT	5	45
1046	Fill of Gully	BSYS	1	1
1046	Fill of Gully	IBRW	1	20
1046	Fill of Gully	LGRE	1	8
1046	Fill of Gully	NDGT	1	2
1046	Fill of Gully	NDGT	1	2
1050	Civil War ditch-fill on side	CMBW	1	5
1050	Civil War ditch-fill on side	LGRE	4	83
1050	Civil War ditch-fill on side	NDGF	1	6
1050	Civil War ditch-fill on side	NDGT	14	350
1050	Civil War ditch-fill on side	SDRE	1	49
1051	Civil War Ditch fill	ETGE	3	3
1051	Civil War Ditch fill	LGRE	1	7
1051	Civil War Ditch fill	NDSC	3	77
1059	Make up Layer	BSYS	1	1
1059	Make up Layer	LGRE	1	33
1061	Civil War ditch upper fill	NDGT	2	187
1070	Civil War ditch upper fill	CPMD	1	16
1071	Civil War ditch secondary fill	CREA	1	5
1083	Civil War ditch secondary fill	NDGT	1	3
1085	Civil War Ditch basal fill	LGRE	1	48
1085	Civil War Ditch basal fill	NDGT	1	42
1085	Civil War Ditch basal fill	SDRE	1	12
1086	Civil War Ditch primary fill	FRECH	1	28
1088	Civil War ditch secondary fill	LGRE	1	8
1112	Civil War Ditch basal fill	CREA	1	8
1115	Civil War Ditch basal fill	NDGT	1	35
1137	Make up Layer	LGRE	1	37
1137	Make up Layer	NDGT	1	13
1142	Hollow	NDGF	1	1
1142	Hollow	NDGT	1	23

CREA: *Creamware* (3 sherds, 15g). Cream or yellowish coloured glaze on white earthenware fabric produced from about c 1740 (NCS 1984; Miller and Huenter 2001). After c 1780 it was largely replaced by pearlwares. This ware was used for table and teawares (cups, tankards, saucers, plates, teapots etc). A rim sherd from context 1071 was from a Whieldon-type moulded dish with powdered Manganese colouring of c 1760-80. A sherd from context 1112 was from a mug or jug decorated with Mocha decoration, probably dating from c 1770-90.

ETGE: *English Tin Glazed Earthenware* (3 sherds, 3g). Off-white to buff fabric with white tin-lead glaze. Major production centres included Liverpool, Brislington, Bristol and London. Provenance is extremely difficult due to movement of specialist potters and painters (Archer 1997; Good and Russett 1987, 41-2). The three sherds came from a single white glazed vessel probably an arbarello (ointment jar).

EWSG: *English White Saltglazed Stoneware* (1 sherd, 16g). White glazed vessels with white stoneware body used for tablewares. Produced c.1690-1820s but had been largely replaced by Creamware by the 1760s (Edwards and Hampson 2005).

FRECH: *Frechen Stoneware* (1 sherd, 28g). Grey stoneware with mottled brown glaze imported from Rhineland. The single rim sherd came from a flask, probably of Bellarmine type (Gaimster 1997).

LGRE: *Lead Glazed Red Earthenware* (14 sherds; 282g). Red earthenware with brown, lead glazes. Occasional inclusions include quartz sand, iron-mineral inclusions and very fine glistening particles (?mica but finer than in ORS derived wares). These wares may come from varied sources, most likely in Glamorgan and Somerset. 16th-18th centuries.

NDGF: *North Devon Gravel Free* (3 sherds, 8g). Similar to NDGT (see below) but without the coarse inclusions and generally used for jars. It has been found in Dissolution contexts at Haverfordwest Priory. 16th-18th century.

NDGT: *North Devon Gravel Tempered* (35 sherds, 880g). Coarsewares in red to grey gravel-tempered fabrics with green to brown glazes. The fabric is tempered with coarse gravel (siltstone and angular quartz) produced in Barnstaple and Bideford in North Devon. Two vessels in this fabric were found in Dissolution deposits at Cleeve Abbey (Allan 1994, 21). However, the main period of export around the Severn estuary seems to have been from the late 16th century onward. Some vessels may have been exported to Wales as late as the 19th century (Good and Russett 1987; Allan 1984, 129-32 and 148-9; Grant 2005). Mostly bowls but a baking tray and a possible pan rim from 1051.

NDSC: *North Devon Slip Coated* (5 sherds, 116g). Slip-coated North Devon vessels, generally but not always in a gravel-free fabric. This group includes sgraffito dishes and plain slipped or sgraffito decorated jugs. Late 16th-17th century, though harvest jugs were produced into the 19th century.

SDRE: *Slip Decorated Red Earthenware* (2 sherds, 61g). Wheel-thrown red earthenware (as LGRE) with white slip coated (?sgraffito) (context 1050) or trailed decoration (context 1085) over lead glaze on interior only. Potentially from various sources (as LGRE), 17th- mid 18th centuries.

Table 4: Summary of Industrial Period Wares c1800 from mitigation areas

Context	Context descr	Fabric	Sherds	Wt (g)
1028	Pond Layer?	JACK	1	36
1028	Pond Layer?	PORC	1	2
1044	Fill of Gully	DEWW	1	15
1044	Fill of Gully	PEAW	21	82
1046	Fill of Gully	DEWW	1	9
1059	Make up Layer	DEWW	2	37
1059	Make up Layer	FPOT	1	4
1059	Make up Layer	IDYW	1	8
1059	Make up Layer	PEAW	1	7
1059	Make up Layer	ROCK	1	1
1068	Make up Layer	PEAW	2	10
1068	Make up Layer	SPOR	1	3
1070	Civil War ditch upper fill	IDYW	1	34
1075	Fill of modern pit	DEWW	1	3
1112	Civil War Ditch basal fill	PEAW	3	10
1115	Civil War Ditch basal fill	PEAW	1	6
1138	Make up Layer	DEWW	1	9
1138	Make up Layer	IDYW	2	47
1138	Make up Layer	ROCK	1	4

It should be noted that the classification of whitewares (Creamware, Pearlware and Developed whitewares) is sometimes subjective, especially where sherds are small or damaged through heat or weathering, as they were produced at many centres and the recipes improved. Daylight was used for the examination of the more difficult sherds.

DEWW: *Developed White Wares* (6 sherds, 73g). True white-glazed white-earthenware used for wide range of decorative and utilitarian wares for use in kitchen, dining room/parlour, bathroom and bed room. Mostly transfer decorated but plain, painted and sponge decorated examples also occur. British manufacture. One sherd of grey-tinged ironstone ware from a heavy hexagonal plate/dish (mostly exported to USA) was recovered from context 1044. c 1830- present.

FPOT: *Flower pots* (1 sherd, 4g). Unglazed flower pot in red earthenware. 18th-early 20th century.

IDYW: *Industrial Yellow Ware* (4 sherds, 89g). Buff fabric with all-over yellow glaze, sometimes decorated with slip bands/lines or mocha (dendritic) slip decoration (Rickard 2006). End of 18th-20th century but largely replaced by white glazed bowls after c 1930 (Leibowitz 2002).

JACK: *Jackfield-type ware* (1 sherd, 36g). Teaware with glossy black glaze over reduced grey body. Made from 1740 onwards into 19th century but most common c 1750-70 (Barker and Halfpenny 1990:34-35).

PEAW: *Pearlware Blue* (28 sherds, 115g). Tinged white-glaze (from added manganese) on white earthenware body. This was used for tablewares: dishes, bowls, cups, jugs etc. They were usually decorated with transfer, painting or occasionally mocha. Nearly all the transfer designs were floral patterns or Chinese garden scenes. British, c 1780-1840 (NCS 1984; Miller and Hunter 2001).

PORC: *Porcelain* (1 sherd, 2g). Imported Chinese porcelain, foot-ring from tea bowl with trace of red enamel paint on interior. 18th-19th century.

ROCK: *Rockingham Ware* (2 sherds, 5g). Teawares in white fabric with streaky brown all-over glaze and moulded decoration. Manufactured for the lower end of the market c 1830-1930 (Claney 2004).

SPOR: *Semi-Porcelainous wares* (1 sherd, 3g). Fused whiteware fabrics but lacking translucency of true porcelain. Late 19th-20th century.

UNCL: *Unclassified* (1 sherd, 1g). A single sherd in a soft pink fabric with a trace of glaze from context 1046, uncertain if medieval or post-medieval.

Discussion

Of the 136 sherds found on the site from the two phases of investigation, only 7 sherds were certainly of medieval (pre-1500), or transitional period (c 1400-1600), all within later features, so therefore residual. The early-modern pottery (16th-mid 18th century) was dominated by North Devon wares imported from Barnstaple and Bideford. There were also vessels in Lead Glazed Red Earthenwares (LGRE), possibly from a number of sources in Somerset and Glamorgan. Unfortunately, these wares are mostly very difficult to provenance and date precisely.

7.2 Ceramic building material by Pat Chapman

Six small fragments, weighing 382g, come from fills (1028), (1046), (1059) and (1061). There are no measurable dimensions, so differences are by fabric alone. One fragment, from (1028), has been over-fired to cindery purple-brown, possibly for decorative purposes such as diaper or chequer patterns popular from the 16th century onwards. Two small fragments, from (1046) and (1059), made from coarse sandy clay, have been fired to a hard slightly mauve-brown colour, one with a trace of a very smooth surface. The other fragment from (1028) is hard fine silty clay, orange with cream streaks. Of the remaining two, both from (1061), one is in a hard fine sandy clay, dull orange in colour, while the other is made from a light silty slightly soft orange fabric. They are all handmade and well mixed, therefore predating the introduction of machine-made bricks at the beginning of the 19th century.

7.4 Clay pipes and bottle glass by Tim Upson-Smith

Two clay pipe bowl and five stem fragments were recovered from five different contexts during excavation at the old cattle market site, Carmarthen. The stems were dated using the diameter of the bore as outlined in Oswold 1975, 92-5. The bowl was also dated using the Oswold classification system.

The pipe bowl fragment from context (1139) is too fragmentary for close dating but appears to be late 17th/early 18th century in form. The pipe bowl fragment from context (1059) is also fragmentary although it retains a short length of stem, the bore diameter of which and the simple leaf pattern on the front of the bowl would suggest a 19th-century date.

Five stem fragments were also recovered, measuring between 20mm to 55mm in length; no mouth pieces were present in the assemblage. The stem fragments date between the mid 17th century and the 19th century.

The earliest of the stems, from one of the fills (1080) of the Civil War ditch in Area D, dates to the Civil War period and is quite abraded. The remaining four stem fragments post-date the Civil War period.

Three fragments of bottle glass were recovered from three different contexts (1028), (1044) and (1046). Only one of these fragments was diagnostic, the base from (1028), which dates to 19th century. The other fragments were un-diagnostic sherds of green bottle glass.

7.5 **Animal bone** by Karen Deighton

A total of 3.04kg of animal bone was recovered from two areas, Areas A and B, contexts (1050) and (1046) respectively, during the course of the excavation.

Preservation was reasonable, but fragmentation was moderate with some fresh breaks. Unfortunately, the nature of fragmentation precluded the collection of any metrical data. Bone surfaces were abraded and powdery to the touch, which could have obscured evidence of butchery and canid gnawing; no evidence of butchery, burning or canid gnawing was observed.

On examination, the bone from Area B, Ditch [1047] context (1046) proved to be a partial horse (*Equus*) skeleton. This consisted of vertebra, including a sacrum, pelvis, tibia, radius, femur and a humerus shaft. A single rib was also present. Some vertebra appeared to be fused together (osteoporosis), which indicates old age and possibly use as a traction animal. A proximal tibia and distal femur were fused, which suggests an animal of at least 3 years (Silver 1969). Acetabulum (hip sockets) were also fused, other epiphyses were absent. It would appear that the carcass had been dumped in the open field boundary ditch. A radius shaft, which possibly also belongs to a horse, was recovered from a backfill deposit (1050) of the Civil War ditch.

7.6 **Soil samples** by Karen Deighton

Seven soil samples were taken from Areas A, C, F and G to investigate the environmental potential of the mill pond and Civil War ditch.

Methods

All samples were processed by flotation with a 1mm mesh used for the collection of residues in a modified siraf tank. Once dried, the residues were stack-sieved using 1mm, 2mm and 3.5mm sizes sieves in order to collect and examine any surviving artefacts and ecofacts.

Results

No charred seeds or other ecofacts were retrieved from any of the seven samples; the only material recovered was coal fragments, totalling 98g, from Samples 1, 4 and 5.

9 DISCUSSION

No evidence was found for the presence of Roman, Saxon or medieval activity within the development area. Equally, no evidence was found in Area H pertaining to the documented site of St Catherine's Chapel and possible mill, which was thought to underlie the former Esso garage. A possible reason for the complete absence of any archaeological remains within this area could be the severe truncation noted within and around the garage footprint. The negative results are supported by the Phase 1 evaluation undertaken by CAP in 2006. Here, the evaluation identified scarping of up to 1m off the original ground level within Trench 1 (Fig 3), removing any surviving traces of the mill. The absence of the chapel within this area may also support the theory posed by James in 1980 that the chapel lay within the town walls (James 1980, 37 in Rosenberg 2007).

In contrast, the investigation was successful in confirming the precise line of the Civil War defences and the presence of a single bastion. To the west, the Civil War ditch would have extended outside of the development area for approximately 210m to join with the north-west corner of the western defences. The southern part of these defences survives as well-preserved earthworks known as '*The Bulwarks*' (Cover and Plate 1). Immediately to the east of the development and adjacent to Area I, the line of the ditch is evidenced by a subsidence crack in the wall of an adjacent property (Plate 8). The defences would then have continued for a further 200m until they joined the north-west corner of the Roman defences at St Francis Terrace (Fig 2).

Map regression did not identify any historic remains associated with the Civil War defences within the development area, suggesting that they were slighted soon after the Royalist defeat. This is supported by the archaeological evidence, where unmistakeable tip lines on the south side of the ditch demonstrate partial backfilling with bank-derived material. The step noted in two of the sections in the western part of the site may also reflect contemporary slighting of the northern face or alternatively two phases of construction. However, the broad date range of the pottery (16th to 19th centuries) does not allow for an accurate date to be assigned to the backfilling. The difference in ditch profile (flat to concave) identified across the site from west to east may reflect variations in compaction of the underlying bedrock and glacial gravel deposits.

It was originally thought that the northern line of the defences would incorporate two bastions at similar intervals to that suggested for '*the Bulwarks*' in the western

defences. This view was reinforced after a bastion was located in Areas D, E F and G, leaving sufficient space for an additional bastion to the east. However, given the relatively flat ground within this area compared to the '*The Bulwarks*', which allowed for unimpeded gun fire, the need for an additional bastion may have been unnecessary.

Previous excavations to the east of '*The Bulwarks*' also identified substantial ditches within the main defensive circuit, which were interpreted by the excavator as either the remains of an earlier defensive ditch or an internal, secondary line of defence (Harrington 2004). Although there were tentative indications of two phases of ditch construction within the western part of the former cattle market site, the lack of detailed excavation over the majority of the defensive circuit precludes any firm conclusion.

The investigations confirmed the presence of a mill pond, possibly associated with the documented site of St Catherine's woollen mill, shown on a map of 1786 (Fig 12) and a series of later maps. The excavated evidence showed that the pond, which was fed by a leat drawn off the Tawelan Brook, was quite an extensive feature, at least 70m long by 25m wide. The available map evidence shows a distinct change in shape between the 1834 town map (Fig 13) and a series of later maps from 1850 onwards, including an Ordnance Survey map of 1890 (Fig 14). Here, a clear splaying at its northern end is shown that was corroborated during the excavation. The excavation demonstrated that it post-dated the Civil War ditch and that it gradually silted up and retracted from west to east and south to north prior to its final abandonment and infilling in 1969.

The additional features found on the site, including a re-cut ditch running parallel and to the north of the Civil War ditch and two perpendicular gullies, almost certainly relate to a field boundary shown on an 1834 plan of Carmarthen (Fig 12) and possible drains associated with properties fronting St Catherine's Street to the south.

Due to later contamination issues and the paucity of viable environmental samples across the site, no evidence was found for crop or animal husbandry. The small amount of animal bone, which mostly came from a single horse carcass deposited in the 18th/19th-century field boundary ditch, has made no significant contribution to the understanding of the wider post-medieval economy of Carmarthen.

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APPENDIX Pottery catalogue

Area C

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1015	Mill pond-upper fill	NDGT	5	171	IG bowl(s) inc rim	
1015	Mill pond-upper fill	LGRE	1	45	bowl rim	splashed gl.

Date Range: 16th-18th century

Date of Deposition: 16th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1028	pond layer?	JACK	1	36	teapot base	
1028	pond layer?	CMPD	1	10	dish	slip trailed
1028	pond layer?	PORC	1	2	bowl foot	red paint
1028	pond layer?	LGRE	2	13	jar rim/IG sh	
1028	pond layer?	NDGT	3	9	IG	
1028	pond layer?	EWSG	1	16	pedestal foot	
1028	pond layer?	CREA	1	2	dish	

Date range: 16th-18th century

Date of deposition: 18th century or later (no 19th century wares)

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1029	pond layer?	NDGF	1	1	?	
1029	pond layer?	LGRE	1	1	IG	
1029	pond layer?	NDGT	5	45	bowl (s)	

Date range 16th-18th century

Date of deposition: Late 16th century or later

Area B

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1044	Fill of gulley	PEAW	1	7	dish rim	blue edged-scalloped & ridged
1044	Fill of gulley	DEWW	1	15	ironstone polygonal dish; complex HWs	moulding
1044	Fill of gulley	PEAW	20	75	HW vessel(s)-tureen or similar	moulding & polychrome painting

Date range: Late 18th-mid 19th century

Date of deposition: Mid 19th century or later (Ironstone)

CARMARTHEN TOWN CENTRE

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1046	Fill of gulley	DEWW	1	9	bowl or jar rim	blue sponge
1046	Fill of gulley	LGRE	1	8	?	
1046	Fill of gulley	BSYS	1	1	HW	slip trailed
1046	Fill of gulley	NDGT	1	2	IG	
1046	Fill of gulley	IRMW	1	20	jar handle	
1046	Fill of gulley	UNCL	1	1	glazed soft pink sh	med or post-med
1046	Fill of gulley	DGTU	1	3	c.pot	

Date range: 13th-19th century

Date of deposition: Mid 19th century or later (DEWW)

Area A

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1050	CW ditch - fill on side	DGTU	1	10	c. pot	
1050	CW ditch - fill on side	NDGT	14	350	baking tray; bowls; small handle; knife-finished rim poss. from large pan	
1050	CW ditch - fill on side	GLAJ	1	12	jug	green gl.
1050	CW ditch - fill on side	LGRE	4	83	bowl(s); jar rim	
1050	CW ditch - fill on side	NDSC	2	39	dishes	sgraffito
1050	CW ditch - fill on side	CMBW	1	5	?dish (wheel-thrown)	slip trailed bands
1050	CW ditch - fill on side	NDGF	1	6	?	
1050	CW ditch - fill on side	SDRE	1	49	dish	slip coated or ??sgraffito-worn

Date range: 13th-18th century

Date of deposition: After c1670 (CMBW)

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1051	Fill of CW ditch	ETGE	3	3	arbarello	white AOG
1051	Fill of CW ditch	LGRE	1	7	IG	greenish-brown lg
1051	Fill of CW ditch	NDSC	3	77	dish (shs fit)	sgraffito

Date range: 16th-mid 18th century

Date of deposition: 17th century or later

Area D

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1059	Make-up layer	BSYS	1	1	HW	
1059	Make-up layer	PEAW	1	7	dish	?gilt transfer
1059	Make-up layer	ROCK	1	1	?teaware	
1059	Make-up layer	DEWW	2	37	dish rims (2)	blue transfer -Chinois
F	Make-up layer	IDYW	1	8	HW	white & blue slip lines
1059	Make-up layer	LGRE	1	33	IG bowl?	brown gl.
1059	Make-up layer	FPOT	1	4	flower pot	

Date range: 16th-early 20th century

Date of deposition: Mid 19th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1061	Upper fill of CW ditch	NDGT	2	187	IG bowl(s)	

Date range: 16th-18th century

Date of deposition: 17th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1068	Make-up layer	PEAW	2	10	HW (blue dec); dish/bowl base	blue sponge (1 sh)
1068	Make-up layer	SPOR	1	3	dish rim - scalloped	plain white

Date range: Late 18th-early 20th century

Date of deposition: Mid 19th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1070	CW ditch upper fill	CMPD	1	16	dish rim	slip trailed
1070	CW ditch upper fill	IDYW	1	34	rim of jar	dark brown slip lines

Date range: 17th-early 20th century

Date of deposition: End of 18th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1071	CW ditch – secondary	CREA	1	5	dish rim	moulded & Manganese

Date range: c1760-80

Date of deposition: Ditto or later

CARMARTHEN TOWN CENTRE

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1075	Fill of modern pit	DEWW	1	3	HW- globular	Blue transfer- foliage

Date range: c1840-early 20th century

Date of deposition: Ditto

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1081	CW ditch - secondary fill	DGTU	1	19	c.pot	

Date range: ?late 12th-?15th century

Date of deposition: 17th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1083	CW ditch - secondary fill	NDGT	1	3	IG	

Date range: 16th-18th century

Date of deposition: Ditto

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1085	CW ditch- basal fill	NDGT	1	42	IG bowl	ext sooting
1085	CW ditch- basal fill	LGRE	1	48	jar rim	int bown gl.
1085	CW ditch- basal fill	DGTU	1	4	c.pot	
1085	CW ditch - basal fill	SDRE	1	12	HW ?jar	slip trailing

Date range: ?late 12th-18th century

Date of deposition: 17th century or later

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1086	CW ditch primary fill	GLAJ	1	6	jug	patchy green gl.
1086	CW ditch primary fill	FRECH	1	28	flagon rim with handle stub	brown gl.

Date range: ?late 12th-17th century

Date of deposition: 17th century or later

Area E

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1088	Secondary fill of CW ditch	LGRE	1	8	IG (sandy fabric	

Date range: ?late 16th-mid 18th century

Date of deposition: 17th century or later

Area G

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1112	Basal fill of CW ditch	PEAW	1	5	FW	

Date range: c1780-1840

Date of deposition: After c1780

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1115	Basal fill of CW ditch	NDGT	1	35	bowl base	
1115	Basal fill of CW ditch	PEAW	1	6	bowl rim	floral-painted

Date range: c 16th century-c1840

Date of deposition: After c1780

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1112	Basal fill of CW ditch	PEAW	2	5	dish base; ?sh	?-green painted dec.
1112	Basal fill of CW ditch	CREA	1	8	mug or jug	mocha (black on yellow) on ext

Date range: c1740-c1840

Date of deposition: After c1780

Area H

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1137	Make-up layer	LGRE	1	37	IG bowl base	sooting under base
1137	Make-up layer	NDGT	1	13	IG bowl base	

Date range: c1740-c1840

Date of deposition: After c1780

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1138	Make-up layer	ROCK	1	4	tea pot	moulding
1138	Make-up layer	DEWW	1	9	dish	blue transfer-chinois
1138	Make-up layer	IDYW	2	47	jar (shs join)	white & blue slip

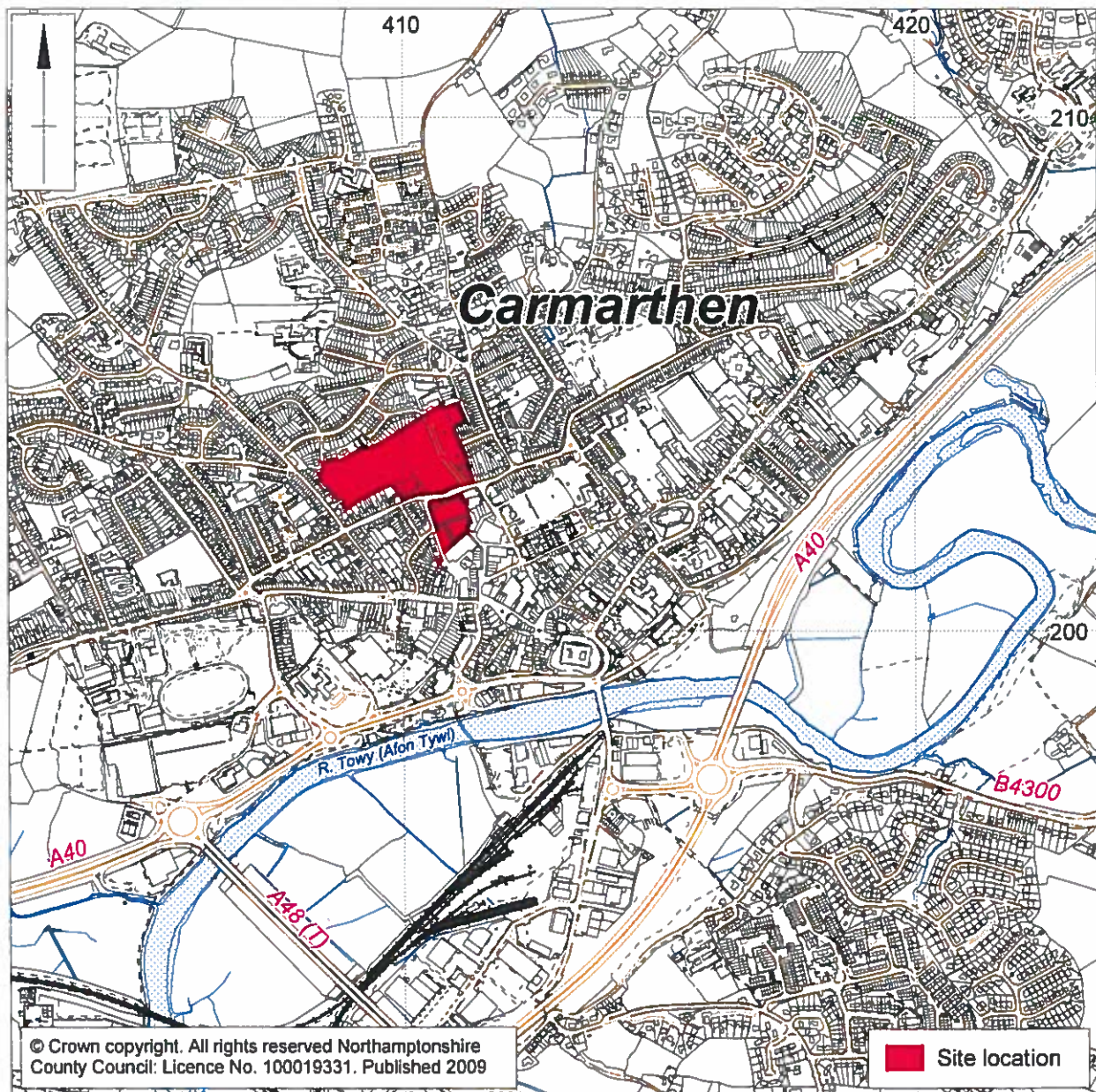
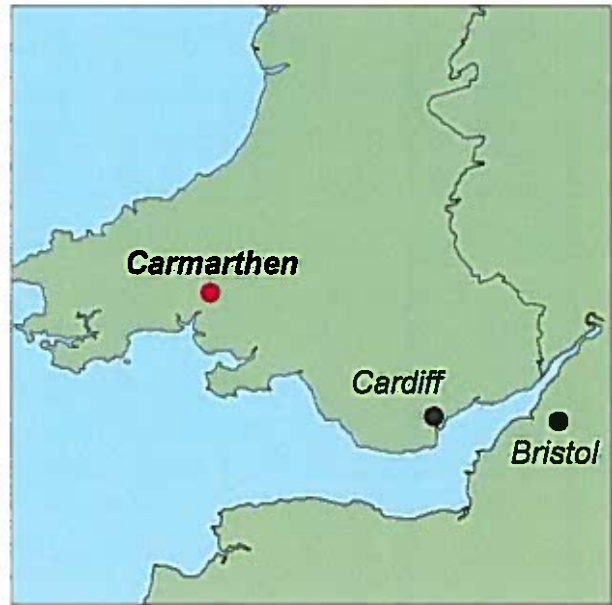
Date range: End of 18th century-early 20th century

Date of deposition: After c1840

Context	Context descr	Fabric	Sherds	Wt (g)	Form	Decoration
1142	Poss hollow cut	MALO	1	5	?	unglazed
1142	Poss hollow cut	NDGT	1	23	IG bowl	
1142	Poss hollow cut	NDGF	1	1	HW ?jar AOG	

Date range: 15th-18th century

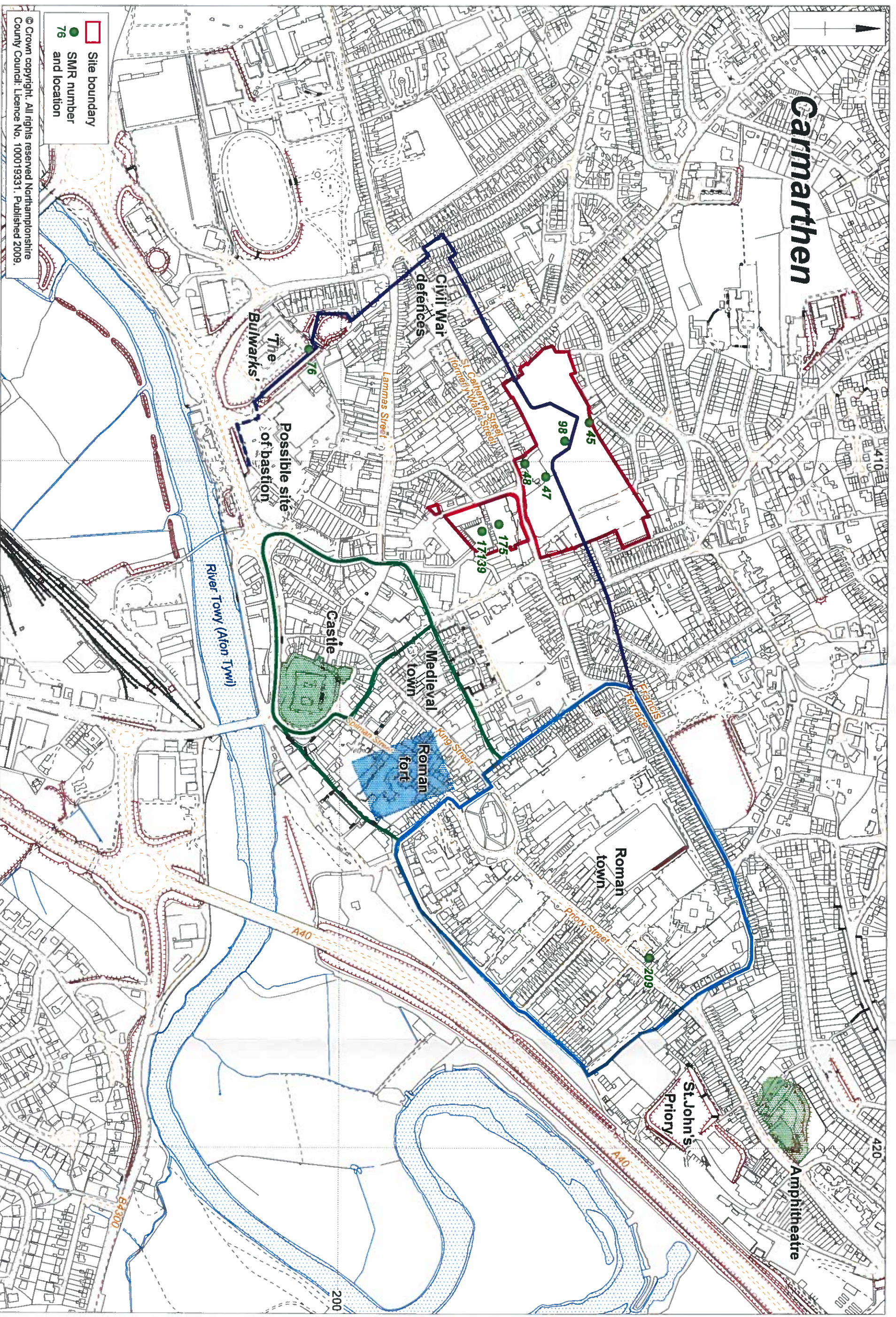
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Scale 1: 12,500

Site location Fig 1

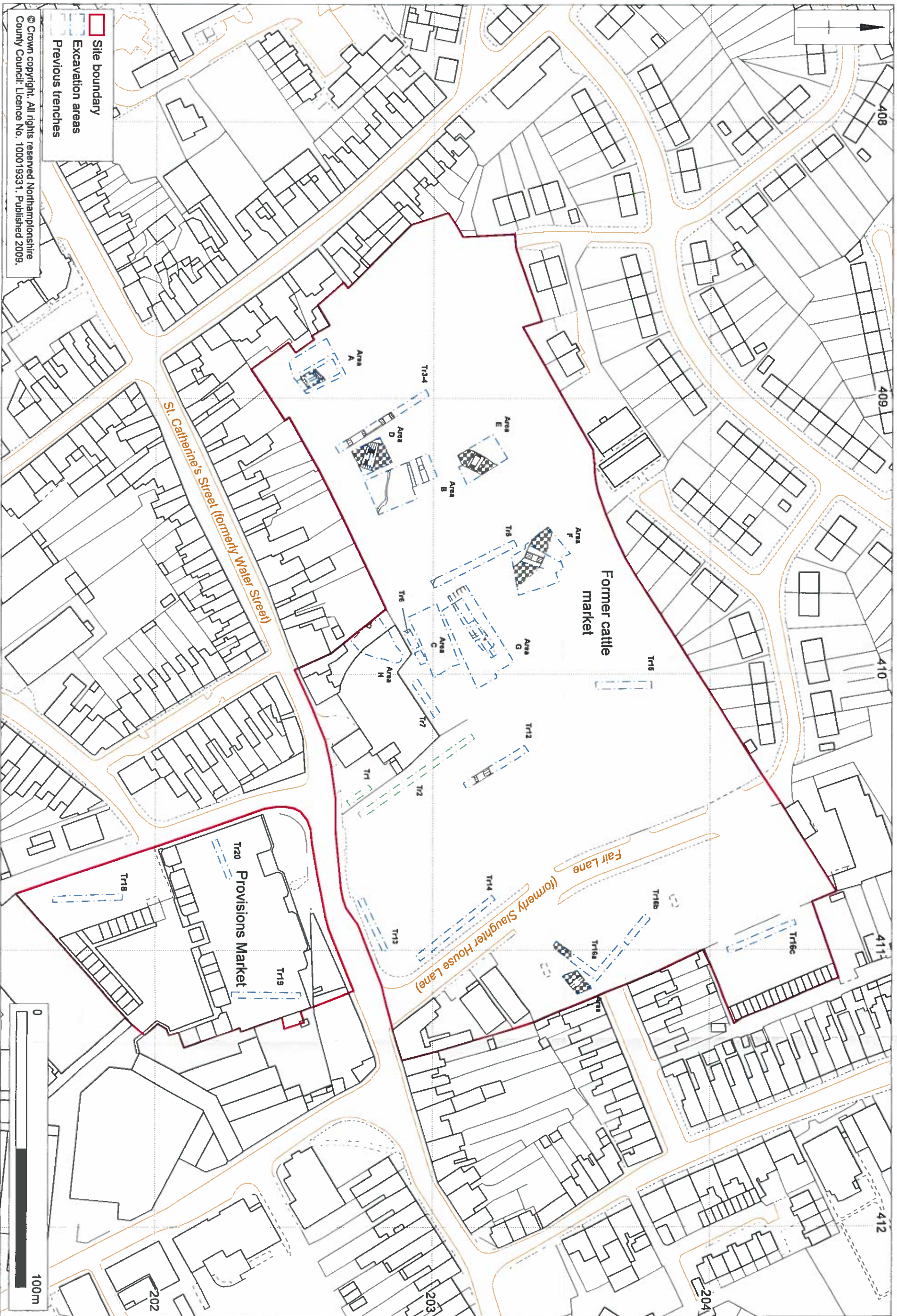
Carmarthen



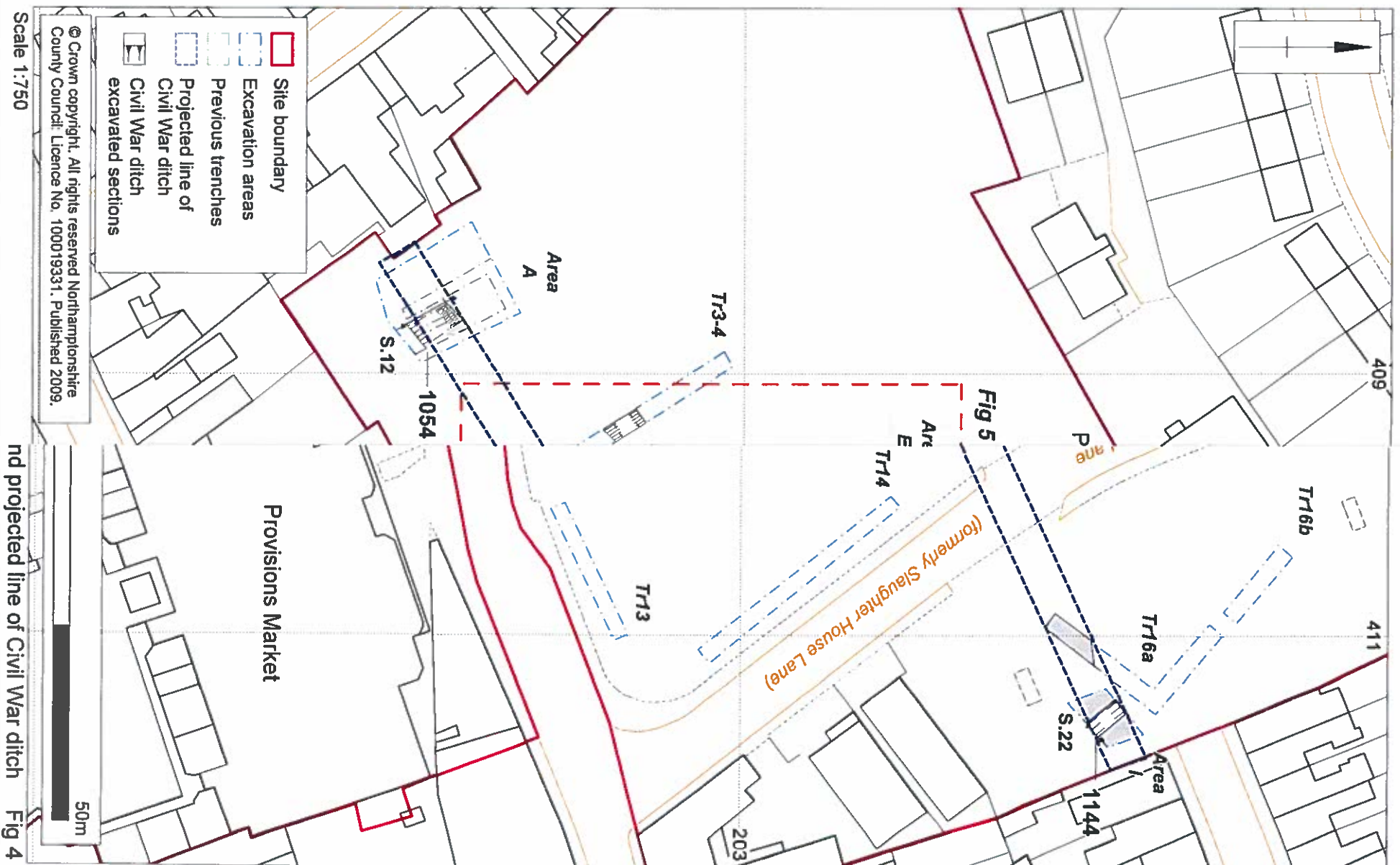
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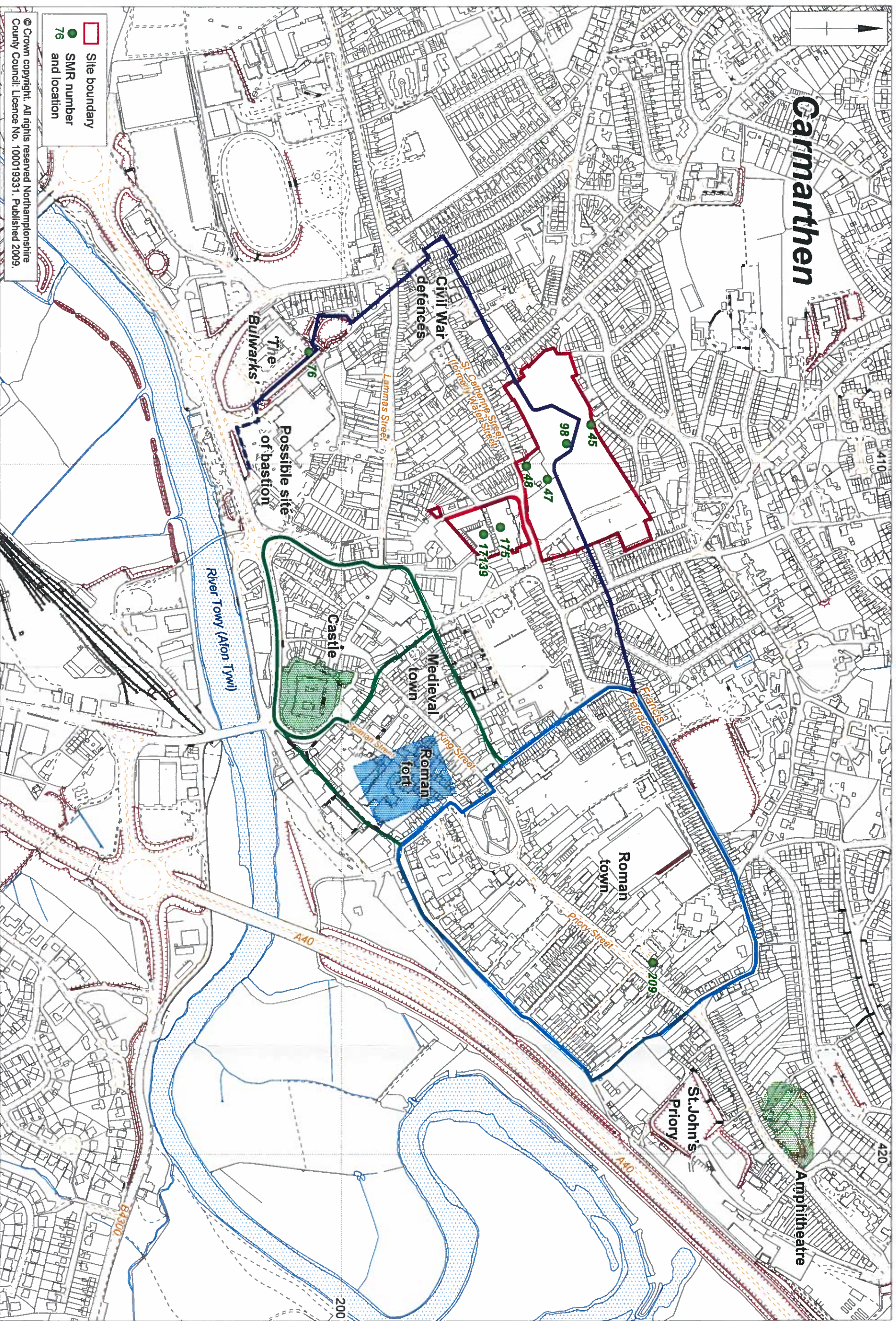
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The Roman and medieval towns, Civil War defences and SMR locations Fig 2



Trial trenches and excavation areas Fig 3

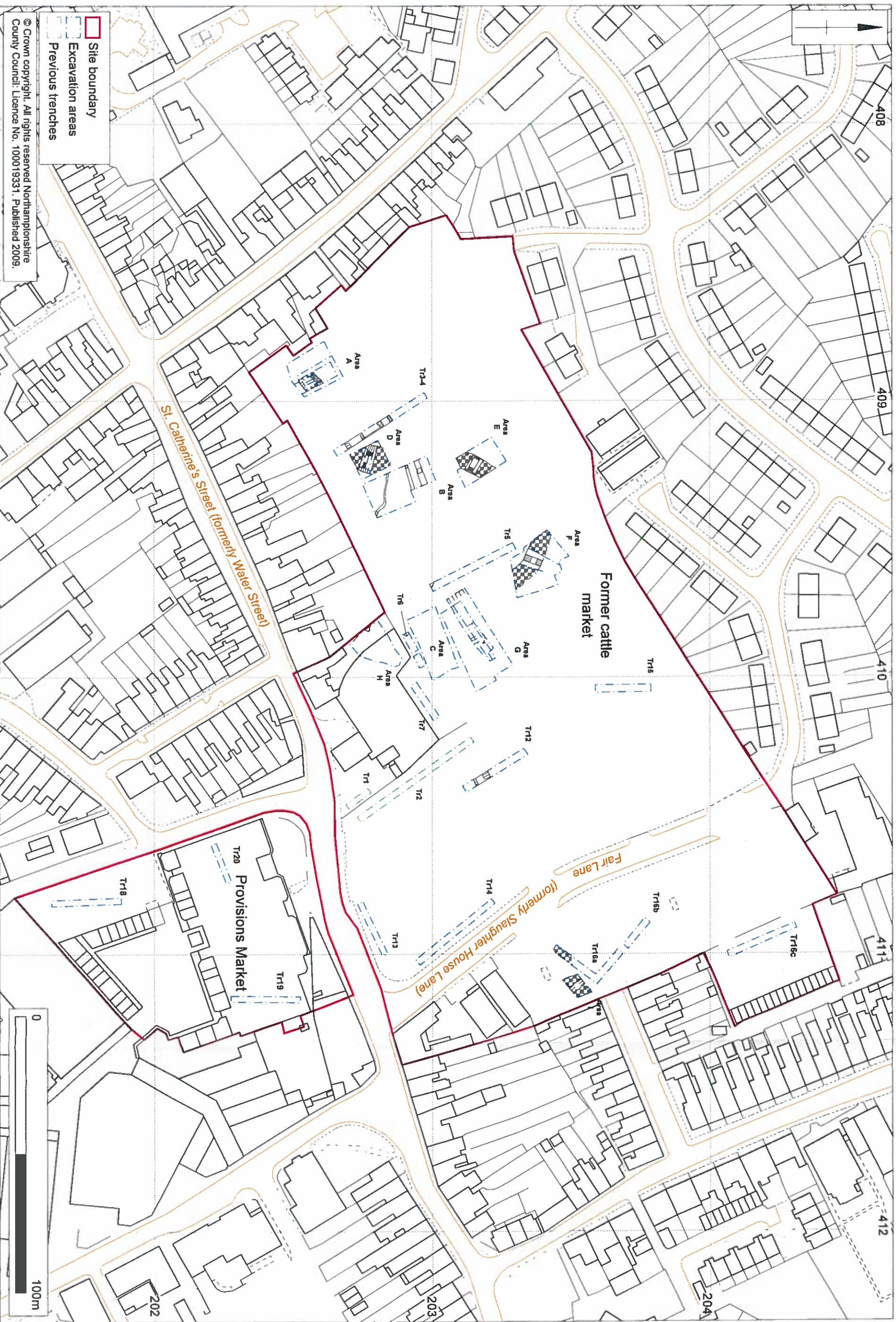




Scale 1: 5000

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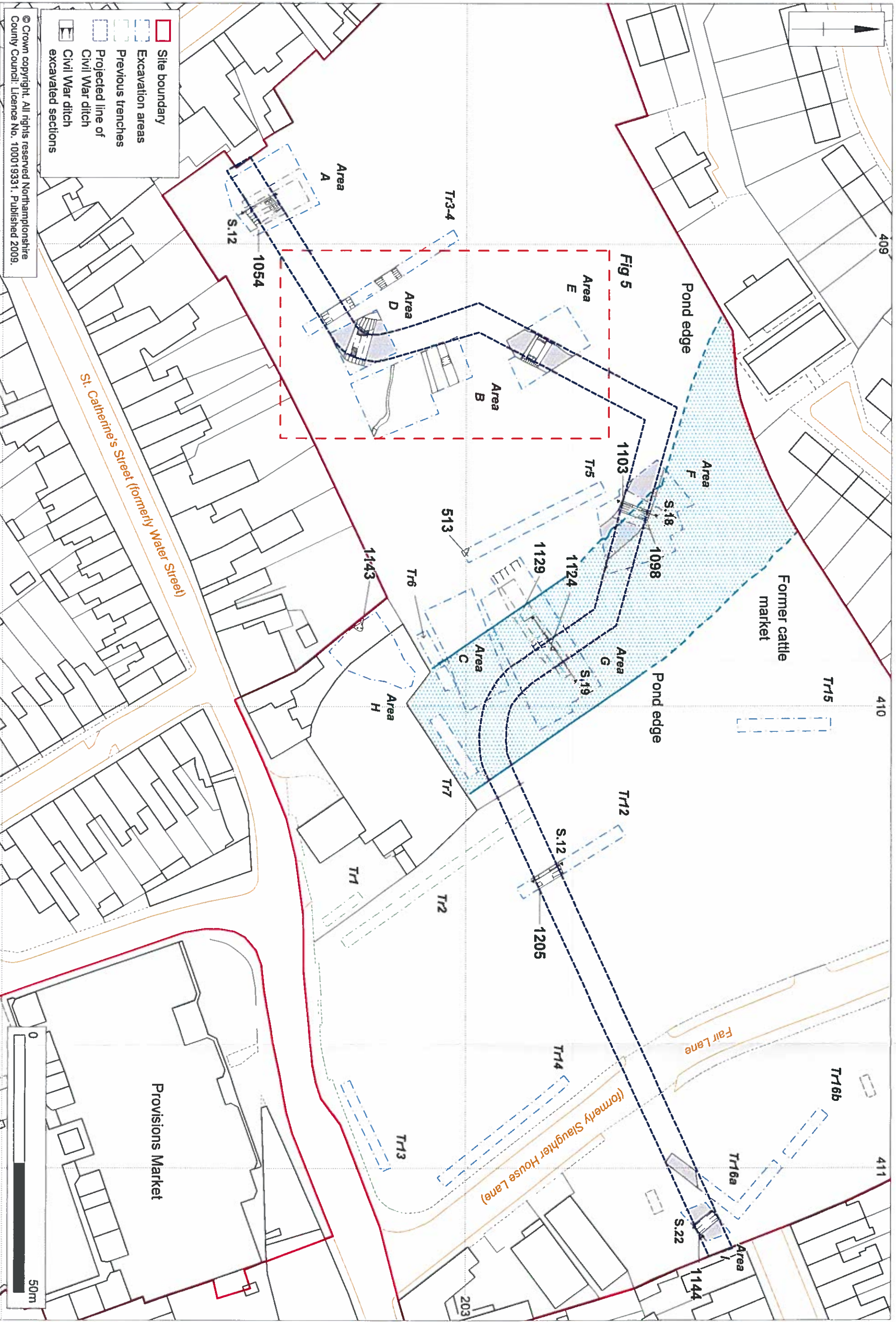
The Roman and medieval towns, Civil War defences and SMR locations Fig 2



Scale 1:1250

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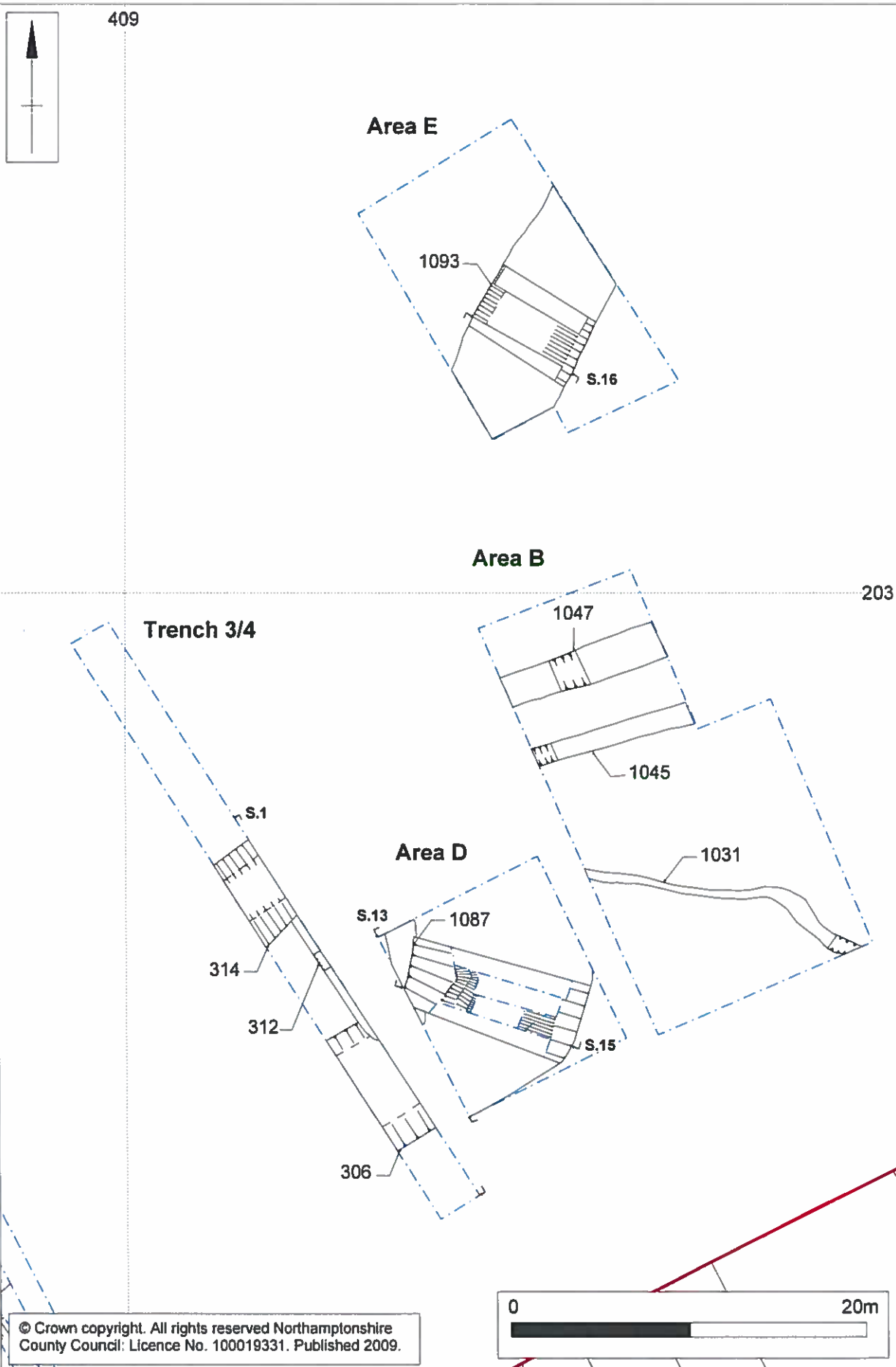
Trial trenches and excavation areas Fig 3



Scale 1:750

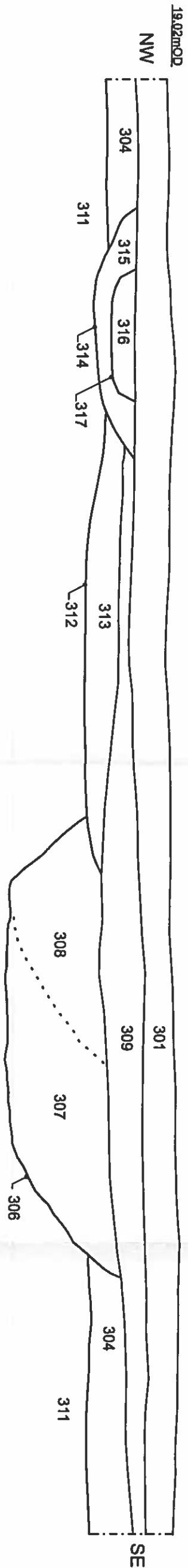
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Excavation areas and projected line of Civil War ditch Fig 4

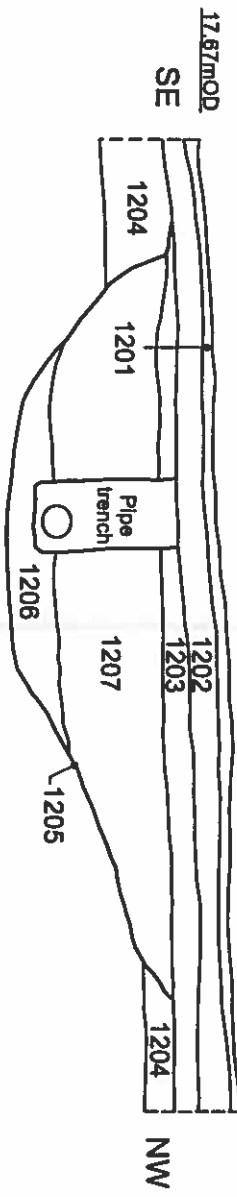


Detail of excavated areas Fig 5

Trench 3/4, Section 1

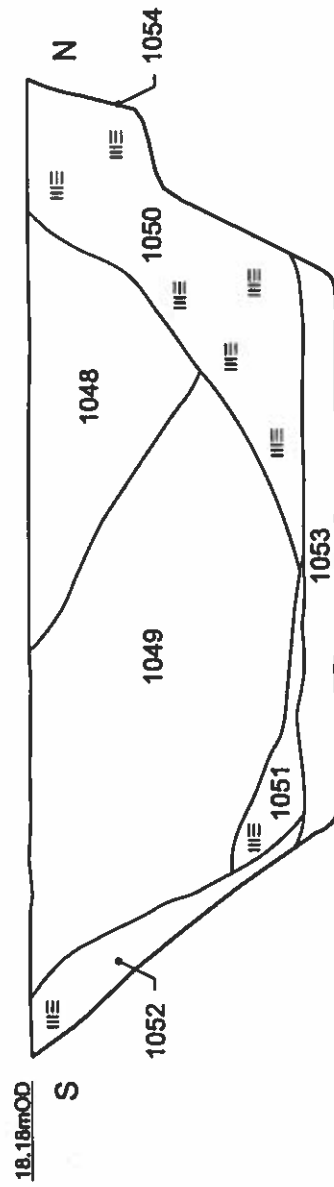


Trench 12, Section 3



Sections 1 and 3 through Civil War ditch, trenches 3/4 and 12 Fig 6

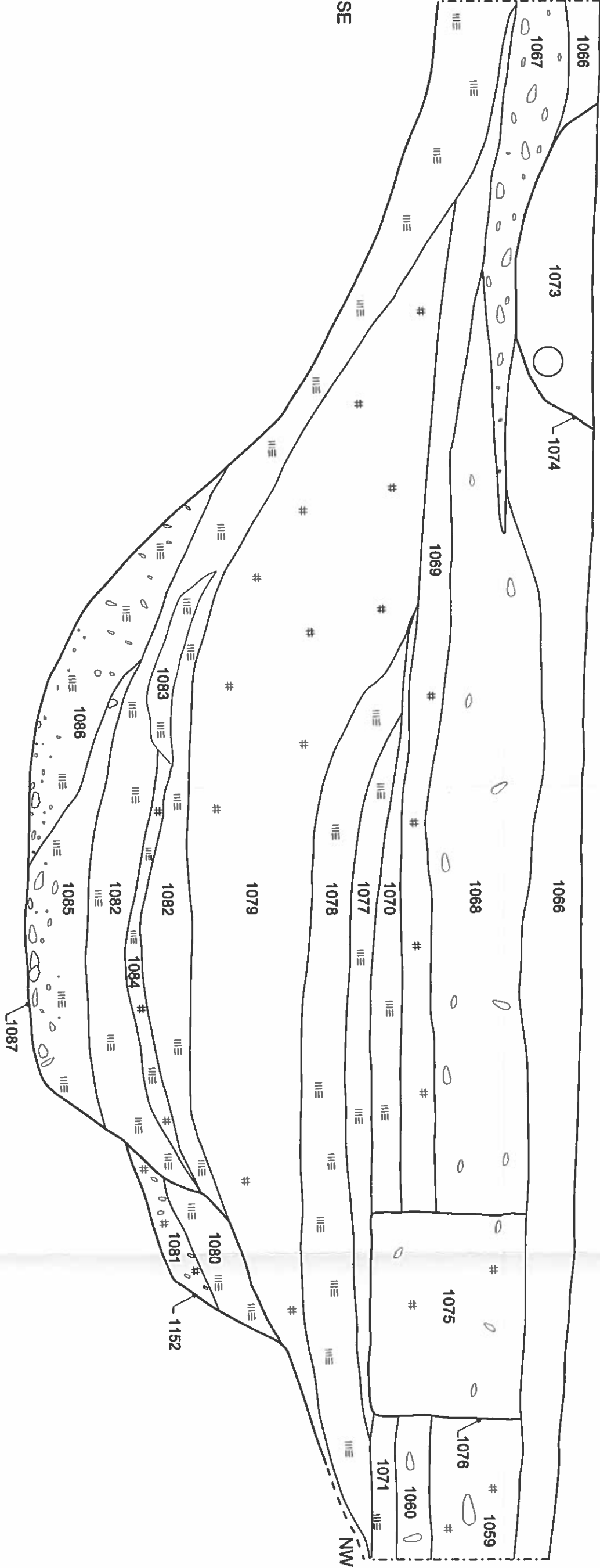
Area A, Section 12



Section 12 through Civil War ditch, Area A Fig 7

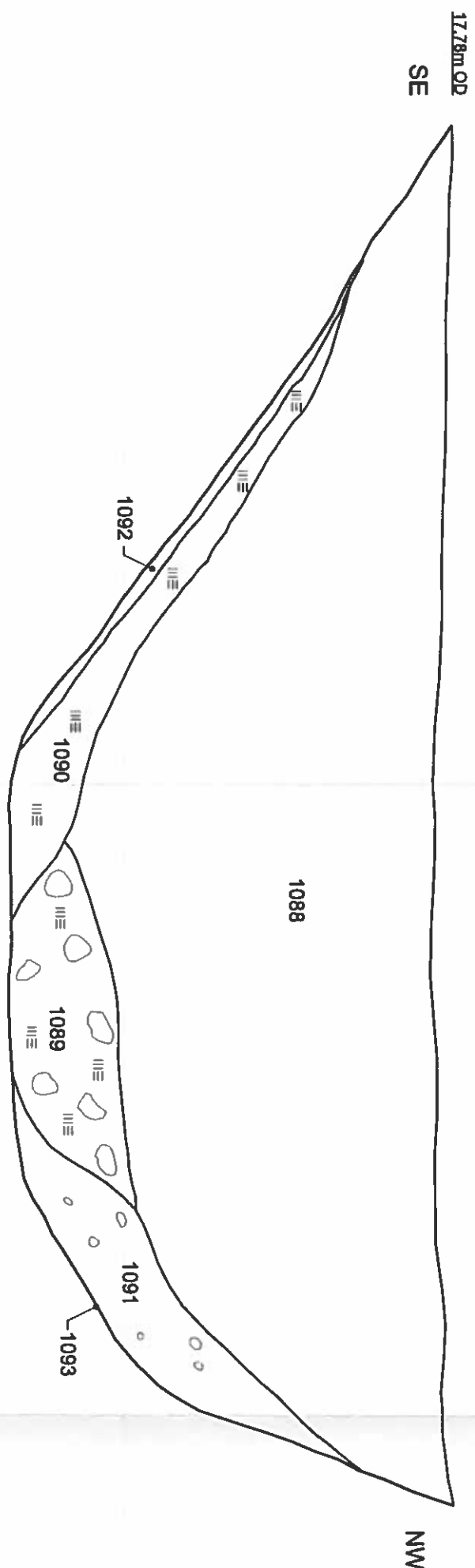
Area D, Sections 13 and 15

18.72mOD

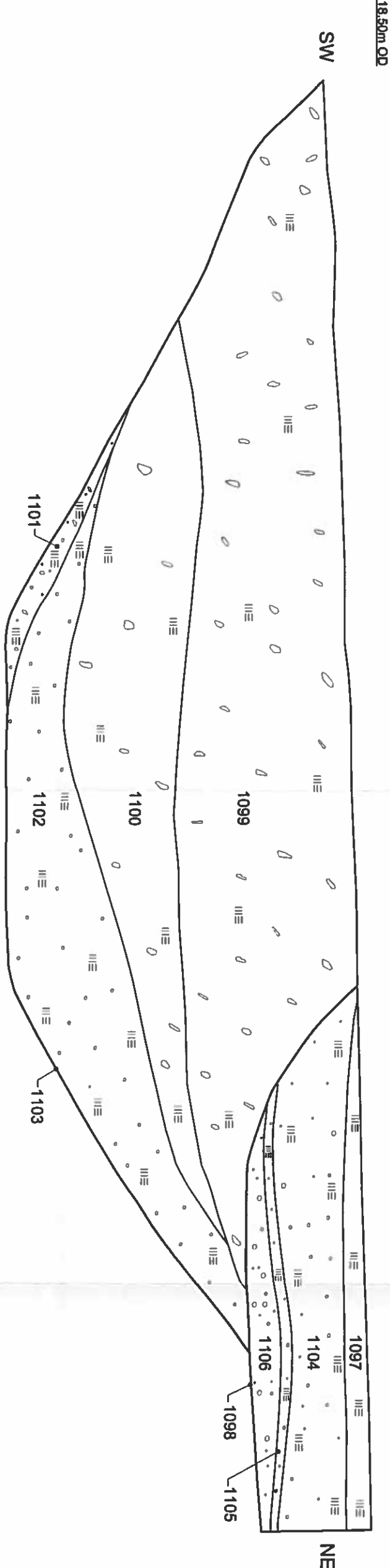


Composite of sections 13 and 15 through Civil War ditch, Area D Fig 8

Area E, Section 16

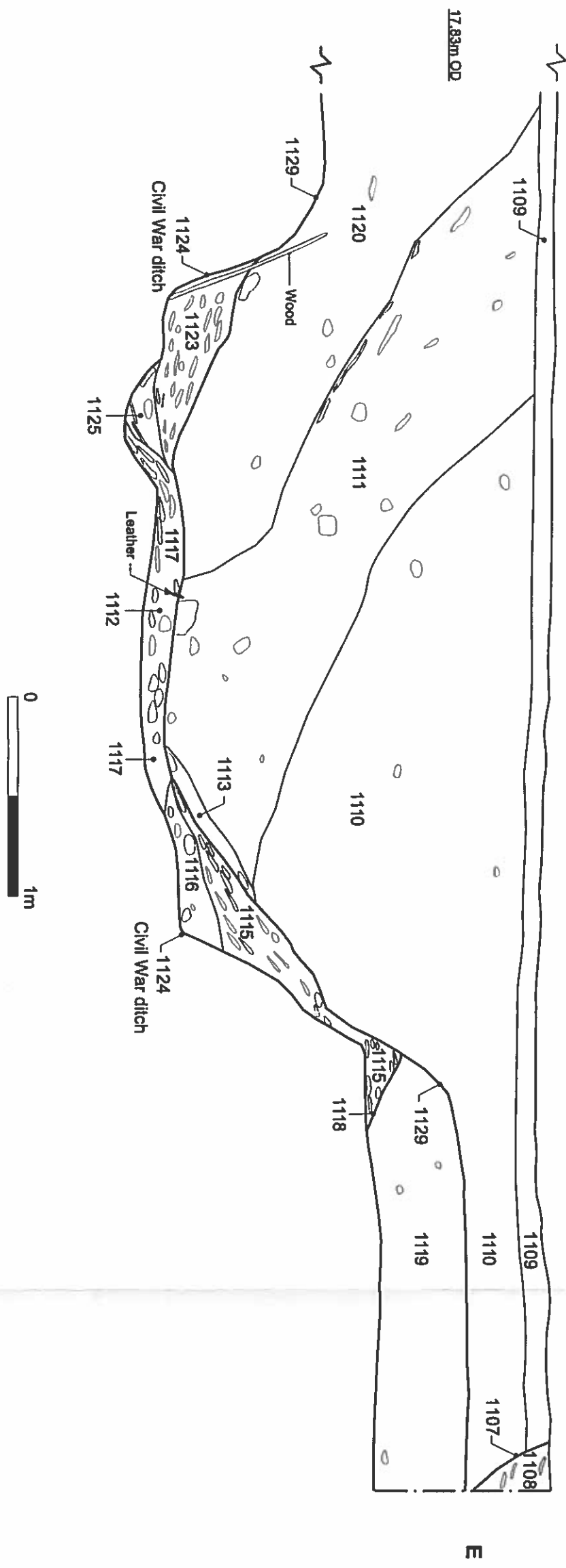
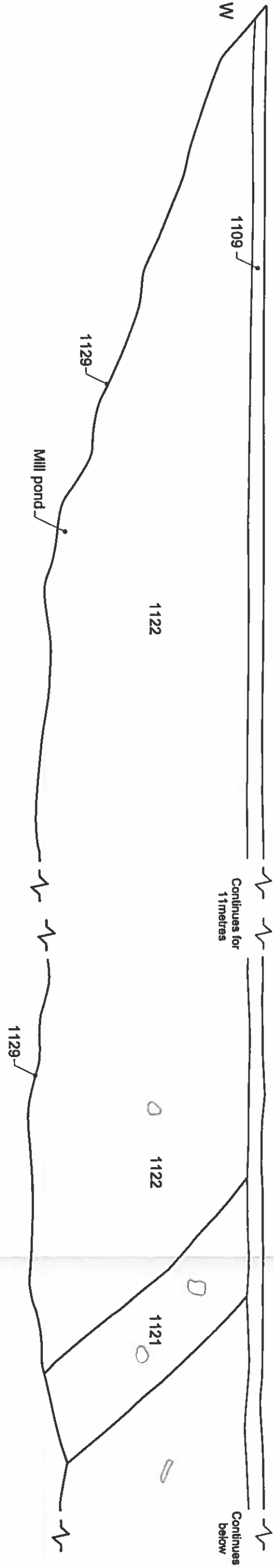


Area F, Section 18

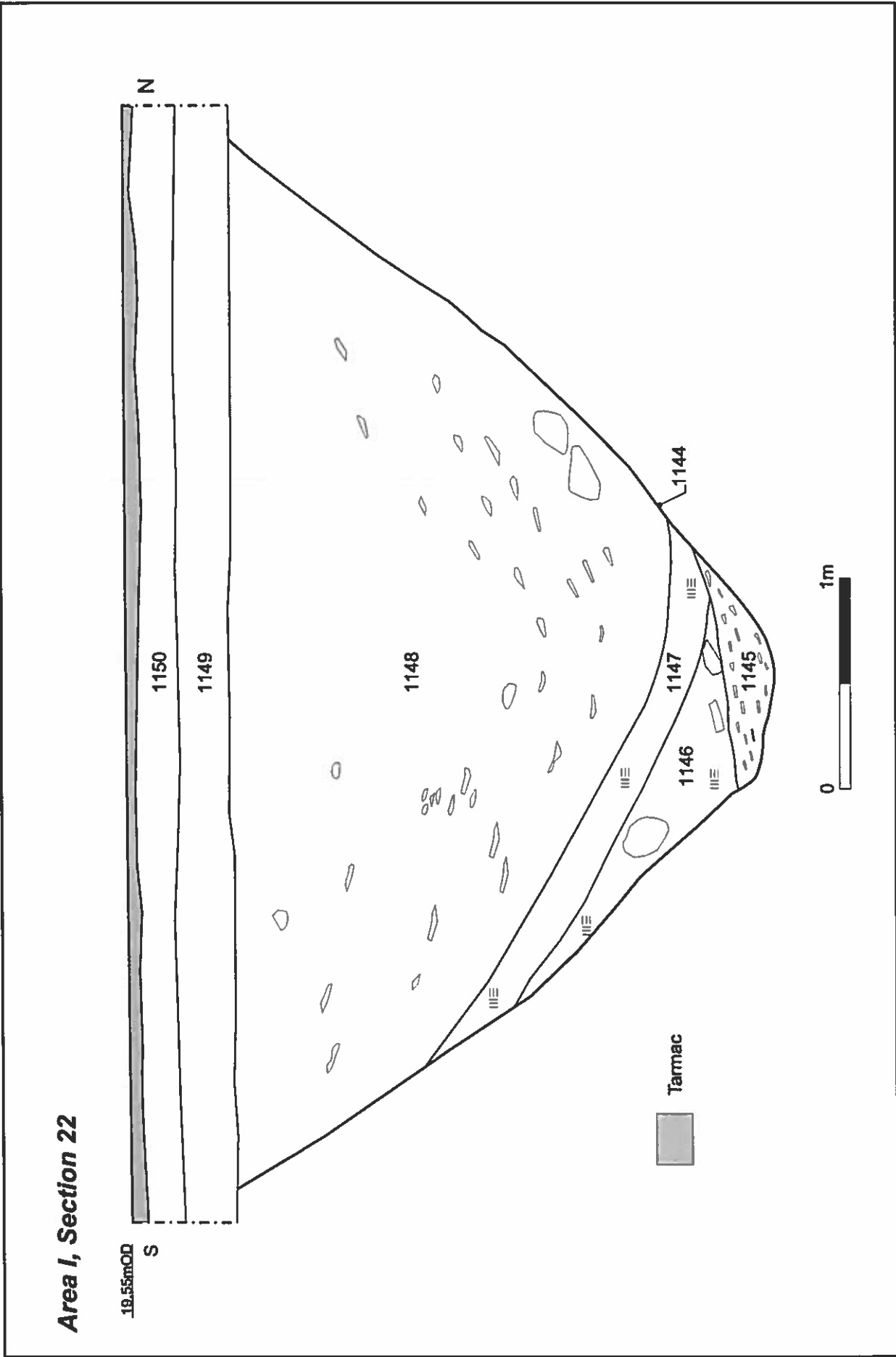


Sections 18 and 16 through Civil War ditch, Areas F and E Fig 9

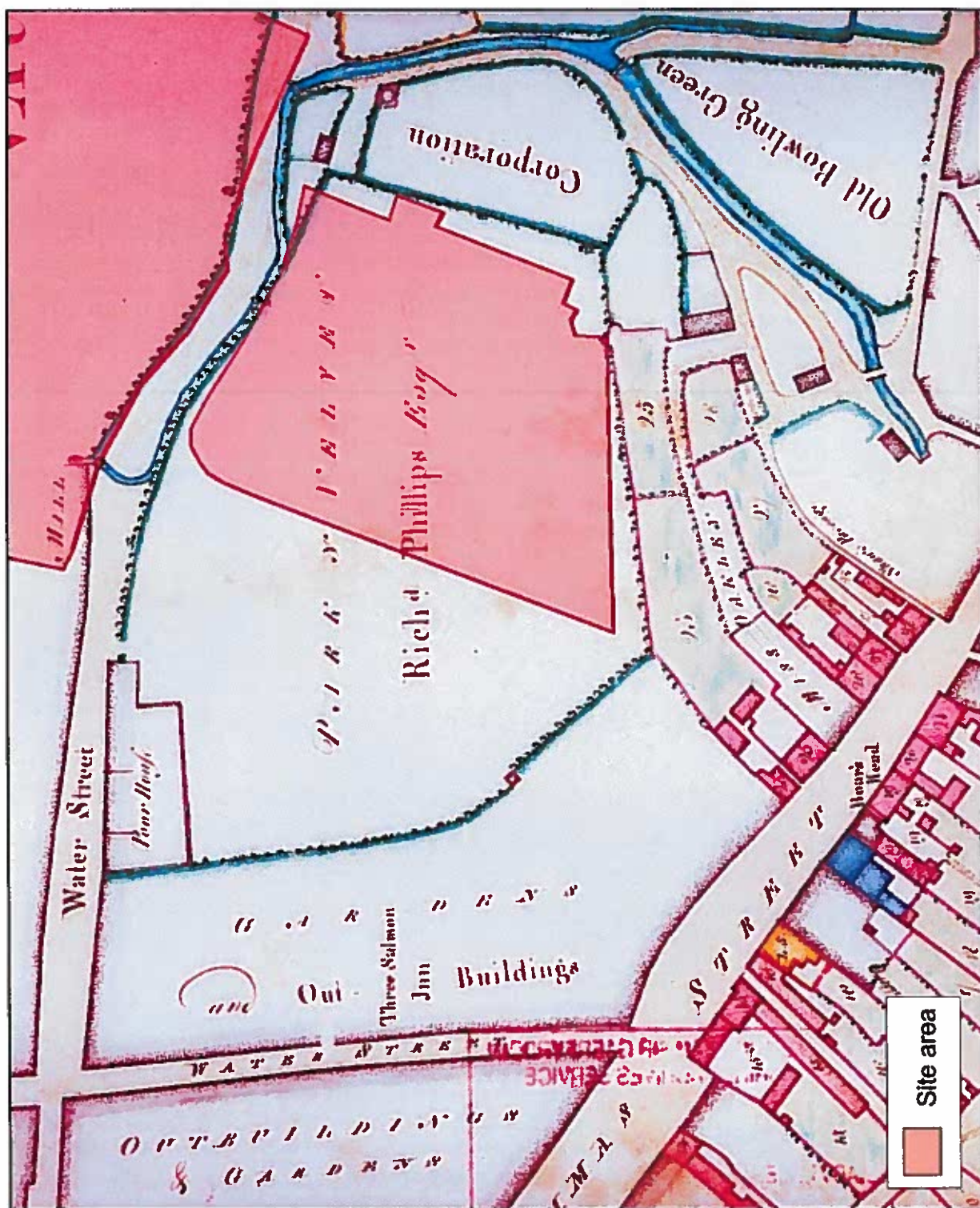
Area G, Section 19



Section 19 through mill pond and remnant of Civil War ditch, Area G Fig 10

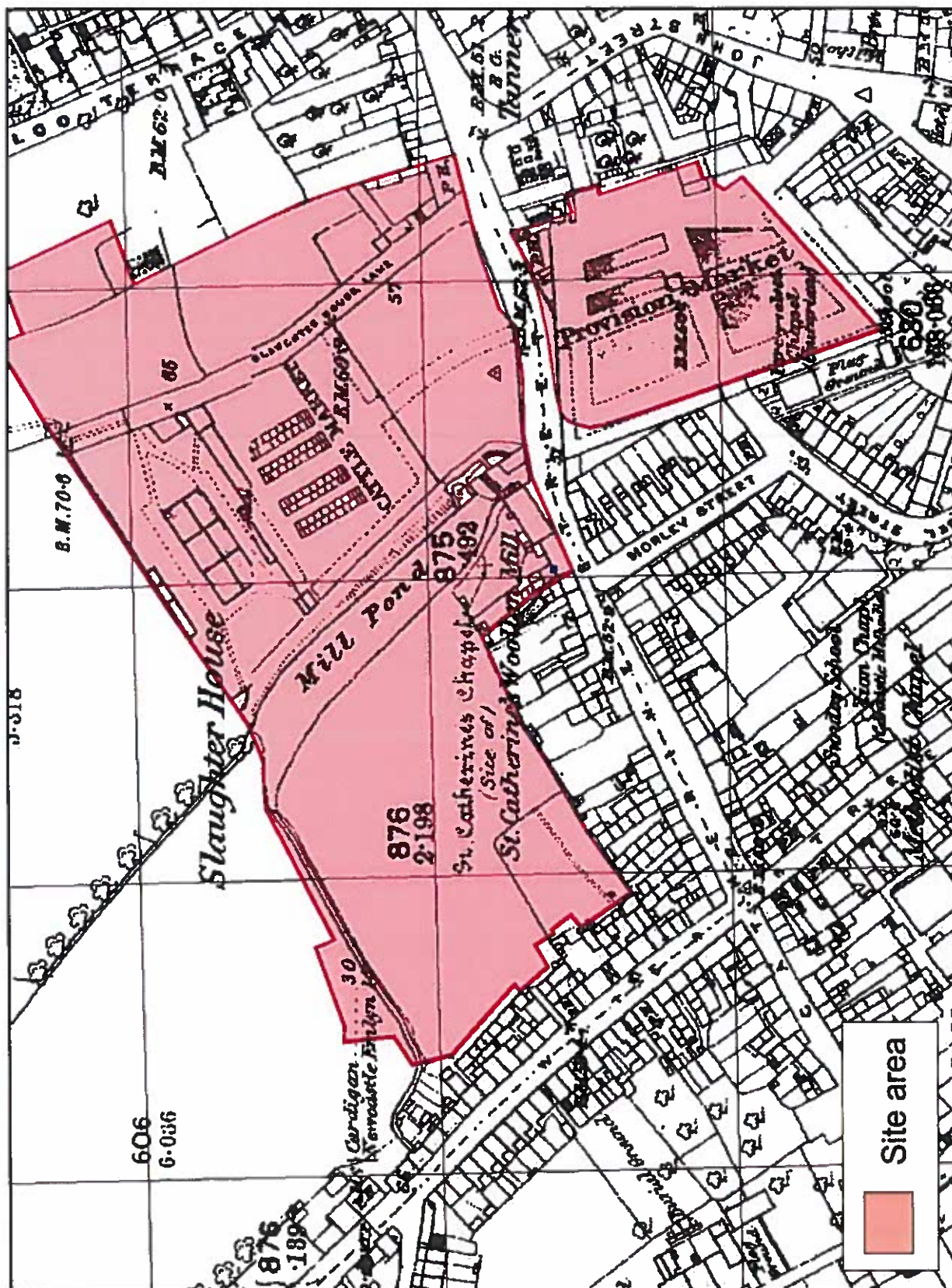


Section 22 through Civil War ditch, Area I Fig 11



Detail of map of Carmarthen by T Lewis, 1786 Fig 12





Detail of Ordnance Survey map of Carmarthen, 1890 **Fig 14**



Plate 1: 'The Bulwarks,' Carmarthen, looking north

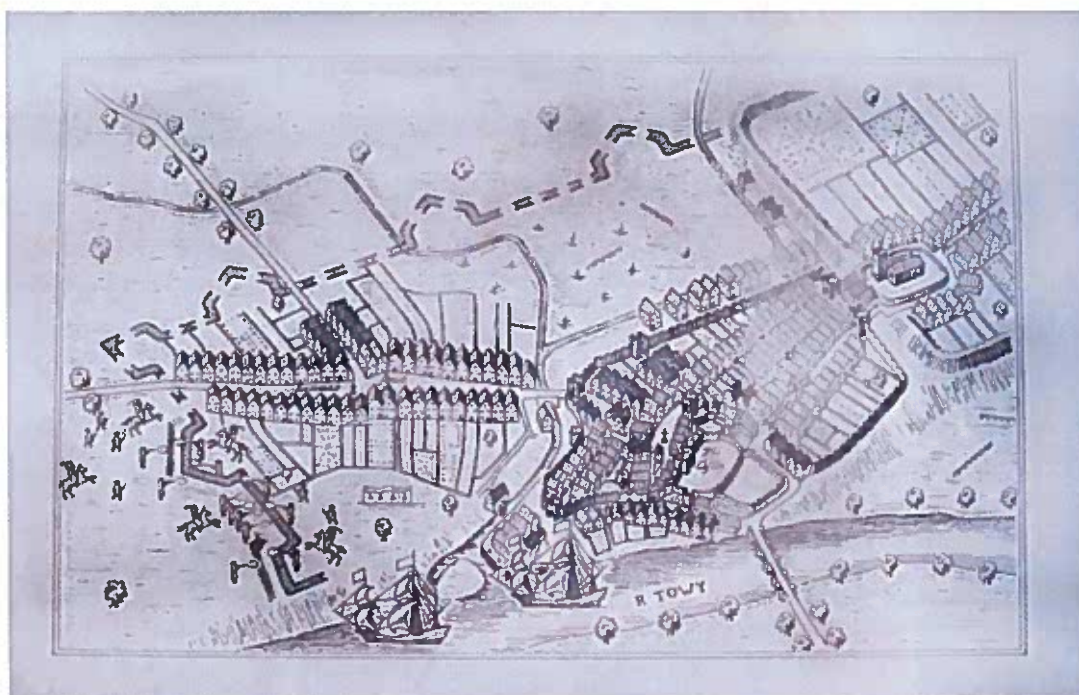


Plate 2: Artist's impression of the Civil War defences of Carmarthen (by Neil Ludlow)



Plate 3: Trench 12, the Civil War ditch [1205]



Plate 4: Area D, the Civil War ditch [1087]



Plate 5: Area E, the Civil War ditch [1093]



Plate 6: Area F, the Civil War ditch [1103]



Plate 7: Area I, the Civil War ditch [1144]



Plate 8: Subsidence crack in the wall of a property, immediately east of Area I



Plate 9: Trench 19, looking North



Plate 10: Trench 20, looking West



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