Archaeological Evaluation of land to the west of Wises Lane, South-West Sittingbourne, Kent

Phases 2A and 2C

Site Code: WLS2-EV-23

NGR Site Centre: 588260 163800

Planning Application Number: 17/505711/HYBRID

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SWAT ARCHAEOLOGY

Swale and Thames Archaeological Survey Company

The Office, School Farm Oast, Graveney Road

Faversham, Kent ME13 8UP

Tel: 01795 532548 or 07885 700 112

info@swatarchaeology.co.uk www.swatarchaeology.co.uk

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Archaeological Evaluation of land to the west of Wises Lane, South-West Sittingbourne, Kent

Phases 2A and 2C

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Abstract

Swale & Thames Survey Company (SWAT Archaeology) were commissioned to undertake an archaeological evaluation on Land to the west of Wises Lane, South-West Sittingbourne, Kent (Phases 2A and 2C). The archaeological programme was monitored by the Principal Archaeological Officer at Kent County Council.

The archaeological evaluation (Phases 2A and 2C) has investigated the extents of the proposed development area using 76 trenches each measuring up to 25m in length.

Archaeological remains were exposed in 24 Trenches, however most of those remains that were identified are not thought to be significant comprising cultivated and developed agricultural soils and a series of linear features, thought to form a part of a field system thus suggesting that this part of PDA falls within wider Late Iron Age and Roman agricultural landscape.

A course of three trackways were investigated and broadly dated to the same Period. First trackway in northwest-southeast alignment is a continuation of the same feature investigated during Phase 1A excavation. Second potential trackway in north-south alignment was identified in Trench 23 and is thought that this trackway is branching-off at the T-junction of the first one and runs to the south towards potential settlement there as indicated by geophysical survey. Third trackway in northeast-southwest alignment was revealed in Trench 71 and is thought that this branch runs to the north-east towards another potential settlement there.

A significant pit was revealed in Trench 91, feature contained metallurgical waste (iron slag) adhered to lumps of baked soil. An oval enclosure of not yet determined function was revealed to the south in Trenches 95 and 56.

Additionally colluvium deposits were identified within southern extent of Phase 2C and tested by excavating a series of geological trial holes. An interesting three throw hole was identified under hill wash deposit in Trench 46 and its backfill produced several worked flint pieces including pick or axe dated to Mesolithic Period. Couple of undated but thought to be Late prehistoric pits were exposed under colluvium in test-pit 53A.

The archaeological evaluation has been successful in fulfilling the primary aims and objectives of the Specification and has assessed the archaeological potential of land intended for development. The results from this work will be used to aid and inform the Principal Archaeological Officer of any further archaeological mitigation measures that may be necessary in connection with any future development proposals.

Archaeological Evaluation of land to the west of Wises Lane, South-West Sittingbourne, Kent

Phases 2A and 2C

NGR Site Centre: 588260 163800

Site Code: WLS2-EV-22

1 INTRODUCTION

1.1 Project Background

1.1.1 Swale & Thames Survey Company (SWAT Archaeology) were commissioned to undertake an archaeological evaluation on land to the west of Wises Lane, South-West Sittingbourne, Kent. (Phases 2A and 2C) (Figure 2).

1.1.2 The land has planning consent (Swale Borough Council (Ref. 17/505711/HYBRID) for the following. outline planning permission for up to 595 dwellings including affordable housing; a 2- form entry primary school with associated outdoor space and vehicle parking; local facilities comprising a Class A1 retail store of up to 480 sq. m GIA and up to 560 sq. m GIA of "flexible use" floor space that can be used for one or more of the following uses – A1 (retail), A2 (financial and professional services), A3 (restaurants and cafes), D1 (non-residential institutions); a rugby clubhouse/community building up to 375 sq. m GIA, 3 standard RFU sports pitches and associated vehicle parking; a link road between Borden Lane and Chestnut Street/A249; allotments: and formal and informal open space incorporating SUDS, new planting/landscaping and ecological enhancement works; and full planning permission for the erection of 80 dwellings including affordable housing, open space, associated access roads vehicle parking, associated services, infrastructure, landscaping and associated SUDS.

1.1.3 A Condition 66 of the hybrid consent states the following:

Before the submission of reserved matters for any phase (excluding Phase 1A), the applicant (or their agents or successors in title) shall secure and have reported a programme of archaeological field evaluation works for that phase, in accordance with a specification and written timetable which has been submitted to and approved by the local planning authority.

1.1.4 On the basis of the present archaeological information. KCCHC advising Swale Borough Council recommended that the proposed development should be subject to a programme of archaeological works in order to clarify the archaeological elements within the site.

1.1.5 The evaluation was carried out in accordance with an archaeological Written Scheme of Investigation (WSI) prepared by SWAT Archaeology (2022), prior to the commencement of works.

1.1.6 The evaluation is the first stage of the programme of archaeological works and addresses part i) of the planning condition only. Its main aim is to clarify the presence/absence of archaeology and its significance. On the basis of the results of the evaluation, further archaeological works may be needed and could include excavation and/or watching brief and post excavation and publication.

1.2 Timetable

1.2.1 A timetable for the archaeological programme of works, to date, is provided below;

Task	***Dates***	***Personnel/Company***
Geophysical Survey	2022	Magnitude Surveys
Submission of the Written Scheme of Investigation	June 2022	SWAT Archaeology
Strip Map and Sample Programme (Phase 1A)	October 2022 –March 2023	SWAT Archaeology
Archaeological Evaluation: Fieldwork (Phase 1B)	December 2022	SWAT Archaeology
Archaeological Evaluation Report (Phase 1B)	December 2022	SWAT Archaeology
Archaeological Evaluation: Fieldwork (Phase 2B)	May 2023	SWAT Archaeology
Archaeological Evaluation: Fieldwork (Phase 2C)	May/ June 2023	SWAT Archaeology
Archaeological Evaluation: Fieldwork (Phase 2A)	June/ July 2023	SWAT Archaeology
Archaeological Evaluation Report (Phase 2B)	June 2023	SWAT Archaeology
Archaeological Evaluation Report (Phases 2A and 2C)	This document	SWAT Archaeology

Table 1 *Timetable for the archaeological programme of works*

1.3 Site Description, Topography and Geology

1.3.1 The PDA (Proposed Development Area) is centered on NGR 588260 163800 (Figure 1) and is situated on open ground of approximately 47.47 ha in area, located on the open fields adjoining the built-up edge of south-west Sittingbourne, in Kent. The south boundary is bounded by Cryalls Lane, Dental Close to the north and Wises Lane. Ground levels are relatively level and a height of approximately 30-40m above Ordnance Datum (aOD).

1.3.2 The Geological Survey of Great Britain (http:// www.bgs.ac.uk) shows that the site is set on Head deposits Clay and Silt overlaying the bedrock geology of Seaford Chalk Formation and Thanet Formation of Sand, Silt and Clay.

1.4 Scope of Report

1.4.1 This report has been produced to provide initial information regarding the results of the archaeological evaluation. The results from this work will be used to aid and inform the Principal Archaeological Officer (KCC) of any further archaeological mitigation measures that may be necessary in connection with any future development proposals.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

2.1.1 The Proposed Development Area (PDA) is located close to a number of archaeological sites which are identified on the KCCHER database.

2.2 HER Records

2.2.1 Archaeological investigation and the initial work on site was an Geophysical Survey by Magnitude Surveys Ltd has been carried out and the results showed that the area was potentially low on archaeological features although a parcel of land to the south of Phase 1A did show a high density of archaeological features.

2.2.2 Follow on archaeological work by Wessex Archaeology was to investigate the archaeological and non-archaeological features identified in the geophysical survey and 28 trenches measuring 30m by 1.8m were set out using GPS and 11 of the trenches were found to contain archaeological features and deposits with two concentrations in the central and southern areas of the Site.

2.2.3 Artefacts recovered from the Wessex archaeological work include 32 sherds of Prehistoric pottery recovered from features in Trenches 3, 8, 13, 20 and 13 Middle Bronze Age sherds from a natural/palaeochannel 2004. Roman pottery was retrieved from Trenches 23, 27, 28 with most from Trench 28. Ceramic building material, Flint, Animal bone and Other Finds were

also recovered and can be accessed in the Wessex Archaeology Report (Land at Southwest Sittingbourne, Kent Phase 1A (Archaeological Evaluation) dated October 2018).

3 AIMS AND OBJECTIVES

3.1 General Aims

3.1.1 The specific aims of the archaeological fieldwork were set out in a Written Scheme of Investigation (SWAT Archaeology 2022) as stated below;

- *6.1 The primary objective of the archaeological evaluation is to establish or otherwise the presence of any potential archaeological features which may be impacted by the proposed development. The aims of this investigation are to determine the potential for archaeological activity and in particular the earlier prehistoric period and also any Roman, medieval and later archaeological activity.*
- *6.2 The programme of archaeological work should be carried out in a phased approach and will commence with evaluation through trial trenching. This initial phase should determine whether any significant archaeological remains would be affected by the development and if so, what mitigation measures are appropriate. Such measures may include further detailed archaeological excavation, or an archaeological watching brief during construction work or an engineering solution to any preservation in situ requirements.*

(SWAT Archaeology 2022: Section 6)

3.2 General Objectives

3.2.1 The general objectives of the archaeological fieldwork were therefore:

- To determine the presence or absence of archaeological features, deposits, structures, artefacts, or ecofacts within the specified area;
- To establish, within the constraints of the evaluation, the extent, character, date, condition, and quality of any surviving archaeological remains;
- To place any identified archaeological remains within a wider historical and archaeological context in order to assess their significance; and
- To make available information about the archaeological resource within the site by reporting on the results of the evaluation.

4 METHODOLOGY

4.1 Introduction

4.1.1 All fieldwork was conducted in accordance with the methodology set out in the Specification (SWAT 2022) and carried out in compliance with the standards outlined in the Chartered Institute for Archaeologists' Standards Guidance for Archaeological Evaluations (CIfA 2014).

4.2 Fieldwork

4.2.1 76 evaluation trenches were excavated (Figure 3). Each trench was initially scanned by a metal detector for surface finds prior to excavation. Excavation was carried out using a mechanical excavator fitted with a toothless ditching bucket, removing the overburden to the top of the first recognisable archaeological horizon, under the constant supervision of an experienced archaeologist.

4.2.2 Where appropriate, trenches, or specific areas of trenches, were subsequently hand-cleaned to reveal features in plan and carefully selected cross-sections through the features were excavated to enable sufficient information about form, development, date, and stratigraphic relationships to be recorded without prejudice to more extensive investigations, should these prove to be necessary. All archaeological work was carried out in accordance with KCC and CIfA standards and guidance. A complete photographic record was maintained on site that included working shots; during mechanical excavation, following archaeological investigations, and during back filling.

4.2.3 On completion, the trenches were made safe and left open in order to provide the opportunity for a curatorial monitoring visit. Backfilling was carried out once all recording, surveying, and monitoring had been completed.

4.3 Recording

4.3.1 A complete drawn record of the evaluation trenches comprising both plans and sections, drawn to appropriate scales (1:20 for plans, 1:10 for sections) was undertaken. The plans and sections were annotated with coordinates and OD heights.

4.3.2 Photographs were taken as appropriate; providing a record of excavated features and deposits, along with images of the overall trench to illustrate their location and context. The record also includes images of the site overall. The photographic record comprises digital photography. A photographic register of all photographs taken is contained within the project archive.

4.3.3 A single context recording system was used to record the deposits. A full list is presented in Appendix 1. Layers and fills are identified in this report thus (100), whilst the cut of the feature is shown as [100]. Context numbers were assigned to all deposits for recording purposes. Each number has been attributed to a specific trench with the primary number(s) relating to specific trenches (*i.e*. Trench 1, 101+, Trench 2, 201+, Trench 3, 301+, etc.).

5 RESULTS

5.1 Introduction

5.1.1 The Trenches were mechanically excavated under archaeological supervision. Trenches were positioned to cover the entire proposed development area.

5.1.2 The site, as shown on Figure 3, provides the trench layout while further Figures illustrates the results for each individual archaeological evaluation trench along with representative soil sequence sections. Plates consist of photographs of features and selected trenches that have been provided to supplement the text.

5.1.3 Individual trench results are discussed below.

5.2 Stratigraphic Deposit Sequence

5.2.1 A relatively consistent stratigraphic sequence was recorded across the majority of the Site comprising topsoil and colluvium sealing intact subsoil, which overlay the natural geological deposits. The topsoil generally consisted of dark organic brown clay sand silt with frequent roots and occasional building material (bricks, tiles, etc), overlying the subsoil/ colluvium which consisted of light to mid brown-orange clay sand silt with moderate small rounded stones and occasional chalk flecks. Natural geology comprised bedrock geology of Chalk sealed by superficial clay and silts. In most of the areas the natural geology (xx03) was sealed-off by subsoil/ colluvium (xx02).

5.3 Archaeological Narrative – Positive Trenches

Trench 22 (Figures)

5.3.1 Trench 22 was placed in north-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.45metres in depth. It exposed natural geology context (2203) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed linear ditch. Feature [2204] comprised WNW-ESE aligned linear cut with moderately sloping sides and concave base. It measured 0.9metres in width and 0.2metres in depth and was filled by context (2205) comprising firmly compacted orange-grey clay-sand-silt with infrequent pebbles.

Trench 23 (Figures)

5.3.2 Trench 23 was placed in north-eastern part of the site in E-W alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (2303) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed oval pit and potential trackway. Pit [2304] comprised sub-oval cut with moderate sides and uneven, slightly concave base. It measured 1.05metres in width and 0.18metres in depth and was filled by (2305) comprising pale orange-grey clay-sand-silt with infrequent pebble and angular flints. Feature [2306] comprised vast shallow linear cut in NNE-SSW alignment. It had shallow sides and flat uneven base and was filled by (2307) comprising pale orange-grey clay-sand-silt with infrequent pebbles, angular stones, manganese and occasional charcoal flecks. It measured 5.1metres in width and 0.21metres in depth.

Trench 24 (Figures)

5.3.3 Trench 24 was placed in north-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.44metres in depth. It exposed natural geology context (2403) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed two ditches and Holloway. Feature [2404] comprised WNW-ESE aligned linear cut with moderate sides and concave base. It measured 0.72metres in width and 0.25metres in depth and was filled by context (2405) comprising firmly compacted orange-grey clay-sand-silt with infrequent iron pan and round pebbles. Ditch [2408] was NW-SE aligned linear cut with steep sides and concave base. It measured 0.64metres in width and 0.18metres in depth and was filled by context (2409) which was firmly compacted mid brownish grey sandy silt with fair amount of subangular stones up to 150 mm and occasional manganese. Fill derived as result from gradual overtime silting process. Feature was capped and truncated by vast Holloway. Feature [2410] comprised wide but shallow NW-SE aligned linear cut with gradual break of slope at top, moderately sloped concave sides and gradual break of slope at base leading to flat base. It measured 9metres in width and 0.23metres in depth and was filled by context (2411) comprising firmly compacted orange-brown clay-sand-silt with moderate manganese and occasional angular stones.

Trench 25 (Figures)

5.3.4 Trench 25 was placed in north-eastern part of the site in E-W alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (2503) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed linear ditch and trackway. Feature [2504]

comprised WNW-ESE aligned linear cut with steep sides and flat base. It measured 1.1metres in width and 0.25metres in depth and was filled by (2505) comprising firmly compacted brown-grey clay sand silt with infrequent manganese and charcoal flecks.

Trench 27 (Figures)

5.3.5 Trench 27 was placed in north-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (2703) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed modern service trench in NNE-SSW alignment.

Trench 28 (Figures)

5.3.6 Trench 28 was placed in north-eastern part of the site in E-W alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (2803) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed oval pit. Feature [2804] comprised sub-oval cut with moderate sides and concave base

Trench 29 (Figures)

5.3.7 Trench 29 was placed in north-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (2903) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed ditch [2904] comprising WNW-ESE aligned linear cut with moderate sides and concave base. It measured 0.77metres in width and 0.23metres in depth and was filled by context (2905) comprising firmly compacted orange-grey clay-sand-silt with infrequent iron pan and round pebbles.

Trench 31 (Figures)

5.3.8 Trench 31 was placed in north-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.51metres in depth. It exposed natural geology context (3103) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed south eastern edge of a Holloway. Feature [3104] comprised WNW-ESE aligned linear cut which was not excavated in this trench. It measured 7metres in width and 0.25metres in depth and was filled by context (2405) comprising firmly compacted orange-grey clay-sand-silt with chalk flecks.

Trench 32 (Figures)

5.3.9 Trench 32 was placed in north-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (3203) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed two ditches and Holloway. Feature [3204] comprised NW-SE aligned linear cut with moderate sides and concave base. It measured 0.8metres in width and 0.2metres in depth and was filled by context (3205) comprising firmly compacted orange-grey clay-sand-silt with infrequent iron pan and round pebbles. Ditch [3206] was NW-SE aligned linear cut with moderate sides and concave base. It measured 0.78metres in width and 0.19metres in depth and was filled by context (3207) which was firmly compacted mid brownish grey sandy silt with fair amount of subangular stones up to 150 mm and occasional manganese. Fill derived as result from gradual overtime silting process. Both features were capped by 7-9metres wide Holloway. Feature [3208] comprised wide but shallow NW-SE aligned linear cut with gradual break of slope at top, moderately sloped concave sides and gradual break of slope at base leading to flat base. It measured 9metres in width and 0.16metres in depth and was filled by context (3211) comprising firmly compacted orange-brown clay-sand-silt with moderate manganese and occasional angular stones.

Trench 53 (Figures)

5.3.10 Trench 53 was placed in south-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.51metres in depth. It exposed colluvium capping natural geology context (5303) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Two geological test-pits were dug to assess the colluvium and exposed Pit [5304] which was oval in plan with gradual break of slope at top, steep convex sides and gradual break of slope at base leading to flat base. It measured 2metres by 2 metres and 0.6metres in depth and was filled by two fills. Primary deposit (5305) was moderately compacted mid redish brown clayey silt with occasional subangular stones up to 40 mm. Fill derived as result from collapse of feature side. It was capped by [5306] comprising moderately compacted mid brownish grey loamy silt with occasional angular and subangular stones up to 90 mm and occasional manganese. Fill derived as result from gradual overtime silting processes.

Trench 56 (Figures)

5.3.11 Trench 56 was placed in north-western part of the site in NNE-SSW alignment and measured 12.5metres in length by 1.8metres in width and 0.46metres in depth. It exposed natural geology context (5603) comprising firmly compacted yellow to orange-grey clay-silt with

infrequent pebbles and flint gravel. Trench has exposed curvilinear ditch [5604] comprising linear cut in NW-SE alignment with steep sides lading to concave base. It measured 1.8metres in width and 0.75metres in depth and was filled by a sequence comprising five deposits. Primary fill (5605) was firmly compacted, mid greyish brown clayey silt 90% with occasional flint and worked flint. Next in turn was fill (5606) which was firmly compacted mid orangey brown clayey silt 90%. Another fill (5607) was firmly compacted mid orangey brown clayey silt. That was capped by (5608) comprising firmly compacted dark violet brown (manganese) mottled with light grey, silt. At the base context is light grey with brown mottling. Inclusions were subangular and angular flint of size less than 150mm. few worked flint were recovered from this context. Material was derived from the surrounding area where vegetation was present. Lastly it was sealed-off by top fill (5609) which comprised firmly compacted mid orangey brown silty 90% loam with occasional angular and subangular nodular flint of size less then 100mm, few worked refuse flakes and small lumps of burnt earth.

Trench 58 (Figures)

5.3.12 Trench 58 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (5803) comprising firmly compacted yellow to orange-grey clay-silt with infrequent pebbles and flint gravel. Trench has exposed ditch [5804] in NE-SW alignment. Feature comprised NE-SW aligned linear cut with moderate sides and concave base. It measured 0.9metres in width and 0.2metres in depth and was filled by context (5805) comprising firmly compacted orange-brown clay-sand-silt with infrequent angular stones. Pit [5806] comprised sub-circular cut with shallow sides and flat slightly uneven base. It measured 3.1metres in width and 0.16metres in depth and was filled by context (5807) comprising firmly compacted brown-grey to orange-grey clay-sand-silt with infrequent angular stones and chalk flecks.

Trench 63 (Figures)

5.3.13 Trench 63 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (6303) comprising firmly compacted yellow to orange-grey clay-silt with frequent pebbles and flint gravel. Trench has exposed Ditch [6304] comprising linear shape in plan in NE-SW alignment with steep irregular sides and undercut on east part of south side, leading to a flat base. It measured 2.2metres in width and 0.59metres in depth and was filled by a sequence comprising 6 deposits. The lowest stratigraphically was fill (6305) and comprised firmly compacted, mid yellowish brown silt with occasional manganese and iron spots. Next was (6306) which comprised firmly compacted, mid brownish grey clayey silt with frequent

manganese and iron spots, occasional angular and subangular nodular flint of size less than 150mm. Archaeological inclusions comprised worked flint including serrated blade, and rare burnt flint - pot boilers. That was capped by (6307) which was firmly compacted mid orangey brown silty 90% loam with occasional flint. Next in turn was (6308) which comprised firmly compacted light grey mottled mid brown sandy silt with occasional flint, moderate iron manganese spots and rare small burnt flint. Large mammal molar was recovered but it disintegrated into powder when lifted up the ground. Subsequently it was capped by (6309) which was firmly compacted mid greyish brown silty 90% loam with frequent manganese spots and moderate angular and subangular nodular flint of size less than 150mm. A number of worked flints were recovered alongside occasional burnt flint-pot boilers. Lastly it was capped on top by (6310) comprising firmly compacted mid orangey brown silty 90% loam with abundant nodular flint of size less than 150mm, occasional burnt flint and numerous worked flints. Also a gravelled trackway 6312 was exposed in this trench. Linear spread of medium-size angular stones in NW-SE alignment measured 4metres in width.

Trench 64 (Figures)

5.3.14 Trench 64 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (6403) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has exposed Ditch [6404]/ [6406] in NW-SE alignment. Feature had moderately sloping sides and concave base and measured 1-1.2metres in width and 0.26metres in depth and was filled by context (6405)/ (6406) which was firmly compacted orange-grey clay-sand-silt with moderate angular stones. A patch of flint gravel, potentially remains of a trackway, occupying small hollow was recorded as [6410] and was truncated by Pit [6408] comprising sub-circular cut with shallow sides and uneven base. It measured 3.07metres in width and 0.1metres in depth and was filled by (6409) which was firmly compacted orange grey clay sand-silt with infrequent pebbles and moderate angular stones.

Trench 65 (Figures)

5.3.15 Trench 65 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (6503) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has exposed Ditch [6504] comprising NE-SW aligned linear cut with moderate sides and concave base. It measured 1metre in width and 0.25metres in depth and was filled by (6505) comprising firmly compacted orange-grey sand-silt with infrequent angular stones. Trackway [6506] comprised NW-SE aligned linear cut with shallow sides and

undulated base. It measured 9metres in width and 0.27metres in depth and was filled by (6507) comprising firmly compacted brown-grey sand-silt with moderate manganese and angular stones. Discussed above Holloway was truncated and capped by later metaled trackway [6508] comprising shallow linear cut in NW-SE alignment backfilled with flint aggregate.

Trench 67 (Figures)

5.3.16 Trench 67 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (6703) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles, flint gravel and large patches of frequent flint gravel. Trench has exposed Ditch [6704] comprising NE-SW aligned linear cut with moderate sides and concave base. It measured 1.13metres in width and 0.28metres in depth and was filled by (6705) comprising firmly compacted orange-grey sand-silt with moderate angular stones. Another Ditch was [6706] comprising NE-SW aligned linear cut with moderate sides and concave base. It measured 0.97metres in width and 0.21metres in depth and was filled by (6705) comprising firmly compacted orange-grey sand-silt with moderate angular stones and occasional manganese.

Trench 70 (Figures)

5.3.17 Trench 70 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (7003) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles, flint gravel and large patches of frequent flint gravel with silt. Trench has exposed Ditch [7004] comprising NW-SE aligned linear cut with shallow sides and concave base. It measured 2.15metres in width and 0.18metres in depth and was filled by (7005) comprising firmly compacted orange-grey sand-silt with moderate angular stones.

Trench 71 (Figures)

5.3.18 Trench 71 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (7103) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has exposed potential metalled trackway so a 9.6metres long extension perpendicular to linear feature was excavated to better investigated exposed remains. Trackway [7104] comprised NE-SW aligned linear cut with shallow sides and undulating/ uneven base. It measured 9.2metres in width and 0.17metres in depth and was filled by (7105) which was a mixture of sand-silt and flint gravel with medium size aggregate. Additionally two geological test-pits were excavated in this trench to ensure consistency of

exposed parent material and to dismiss potential colluvium deposit capping archaeology underneath.

Trench 72 (Figures)

5.3.19 Trench 72 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (7203) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has exposed Ditch [7204] comprising N-S aligned linear cut with moderately sloping western side and shallow eastern side gradually breaking into slightly concave base. It measured 1.4metres in width and 0.29metres in depth and was filled by (7205) which was softly compacted dark brown silt with occasional subangular and angular flint of size less then 90mm. A few fragments of pottery sherds and worked flint pieces were recovered from this context. Oval Pit or Ditch terminus [7206] comprised SW terminus of the NE-SW aligned small ditch with moderate sides and slightly concave base. It measured 0.55metres in width and 0.15metres in depth and was filled by (7207) which was firmly compacted mid reddish brown with occasional light grey mottling, silt with occasional angular stones. Ditch [7208] comprised SSW-NNE aligned linear cut with near vertical sides and flat base. It measured 0.92 metres in width and 0.19metres in depth and was filled by (7209) which was softly compacted mid brown silt with occasional angular flint of size less than 100mm. At the base flint gravel (angular and subangular of size less than 100m, average size 50mm). Two refuse flint flecks were recovered from this context.

Trench 91 (Figures)

5.3.20 Trench 91 was placed in north-western part of the site in WNW-ESE alignment and measured 7metres in length by 1.8metres in width and extension measured 9.5metres in length and 3.6 metres in width. Trench was 0.52metres deep. It exposed natural geology context (9103) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has confirmed the course of metaled trackway 9108 revealed in Trench 63 and exposed Pit [9104] comprising NE-SW aligned oval cut with sharp break of slope at the top, near vertical concave sides and gradual break of slope at base leading to stepped base comprising gently sloping flat shelves with a deeper concave area in the middle. It measured 0.95metres in diameter and 0.47metres in depth and was filled by a sequence comprising 3 deposits. Lowest was (9105); soft mid reddish brown silty gravel with rare charcoal flecks, frequent angular and subangular stones up to 100mm, frequent burnt earth (material surrounding earthen kiln structure). Fill derived as result from deliberated backfill. Next in turn was context (9106); firmly compacted very dark greyish brown loamy silt with frequent

charcoal flecks, occasional angular, rounded and subangular flint up to 20 mm. Fill derived as result from deliberated backfill and was capped on top by (9107) comprising compacted brownish grey loamy gravel with angular, rounded and subangular flint stones up to 100mm and occasional pot sherds. All fills derived as result from deliberated backfill.

Trench 92 (Figures)

5.3.21 Trench 92 was placed in north-western part of the site in WNW-ESE alignment and measured 7.2metres in length by 1.8metres in width and 0.46metres in depth. It exposed natural geology context (9203) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel and patches of frequent gravel in silt matrix. Trench has exposed Ditch [9204] comprising N-S aligned linear cut with moderately sloping sides gradually breaking into slightly concave base. It measured 2.04metres in width and 0.2metres in depth and was filled by (9205) which was softly compacted dark brown silt with occasional subangular and angular flints.

Trench 93 (Figures)

5.3.22 Trench 93 was placed in north-western part of the site in WNW-ESE alignment and measured 10metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (9303) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has exposed Ditch [9304] comprising E-W alignment linear cut with shallow sides and concave base. Feature was very poorly visible as its fill looks almost like natural. It measured 1.8metres in width by 0.23metres in depth and was filled by (9305) which was dry hard sunbaked on top otherwise soft, mid brown silt with moderate angular and subangular nodular flint of size less than 100mm, very rare burnt flint. A bag of struck flint and flakes together with few abraded small sherds of pot was recovered. Frequent bioturbations consisted of earthworm pipes, small roots and dead mid roots. Holloway [9306] comprised NW-SE aligned linear cut with shallow to moderate sides leading to the flat base. Feature was very poorly visible as its fill looks almost like surrounding natural which is slightly more reddish.

Trench 94 (Figures)

5.3.23 Trench 94 was placed in north-western part of the site in NNW-SSE alignment and measured 10.6metres in length by 1.8metres in width and 0.51metres in depth. It exposed natural geology context (9403) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel and patches of frequent flint gravel. Trench has exposed Ditch [9404] comprising NE-SW aligned linear cut with shallow sides and concave base. It

measured 0.97metres in width and 0.17metres in depth and was filled by (9405) which was firmly compacted mid brown sandy silt with occasional flints.

Trench 95 (Figures)

5.3.24 Trench 95 was placed in north-western part of the site in NE-SW alignment and measured 10.6metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (9503) comprising firmly compacted yellow to orange-grey clay-silt with moderate pebbles and flint gravel. Trench has confirmed potential ring ditch investigated in Trench 56.

5.4 Archaeological Narrative – Negative and unexcavated Trenches

Trench 21 (Figures)

5.4.1 Trench 21 was placed in north-eastern part of the site in WNW-ESE alignment and measured 20metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (2103) comprising firmly compacted yellow to orange-grey clay-silt with frequent pebbles and flint gravel. No archaeological cuts, artefacts or deposits were exposed here.

Trench 26 (Figures)

5.4.2 Trench 26 was placed in north-western part of the site in NNW-SSE alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (2603) comprising firmly compacted yellow to orange-grey clay-silt with frequent pebbles and flint gravel. No archaeological cuts, artefacts or deposits were exposed here.

Trench 30 (Figures)

5.4.3 Trench 30 was placed in central part of the site in E-W alignment but couldn't be excavated due to badger exclusion zone.

Trench 33 (Figures)

5.4.4 Trench 33 was placed in central part of the site in N-S alignment but couldn't be excavated due to badger exclusion zone.

Trench 34 (Figures)

5.4.5 Trench 34 was placed in north-eastern part of the site in E-W alignment and measured 25metres in length by 1.8metres in width and 0.51metres in depth. It exposed natural geology context (3403) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles and flint gravel. No archaeological cuts, artefacts or deposits were exposed here.

Trench 35 (Figures)

5.4.6 Trench 35 was placed in north-eastern part of the site in N-S alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (3503) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 36 (Figures)

5.4.7 Trench 36 was placed in north-eastern part of the site in NNW-SSE alignment and measured 21metres in length by 1.8metres in width and 0.54metres in depth. It exposed natural geology context (3603) comprising firmly compacted yellow to orange-grey clay-silt with frequent pebbles and flint gravel. No archaeological cuts, artefacts or deposits were exposed here.

Trench 37 (Figures)

5.4.8 Trench 37 was placed in north-western part of the site in NNE-SSW alignment and measured 28metres in length by 1.8metres in width and 0.5metres in depth. It exposed natural geology context (3703) comprising firmly compacted yellow to orange-grey clay-silt with frequent pebbles and flint gravel. No archaeological cuts, artefacts or deposits were exposed here.

Trench 38 (Figures)

5.4.9 Trench 38 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (3803) comprising firmly compacted yellow to orange-grey clay-silt with frequent pebbles and flint gravel. No archaeological cuts, artefacts or deposits were exposed here.

Trench 39 (Figures)

5.4.10 Trench 39 was placed in central part of the site in E-W alignment but couldn't be excavated due to badger exclusion zone.

Trench 40 (Figures)

5.4.11 Trench 40 was placed in central part of the site in N-S alignment but couldn't be excavated due to badger exclusion zone.

Trench 41 (Figures)

5.4.12 Trench 41 was placed in south-central part of the site in E-W alignment but couldn't be excavated due to badger exclusion zone.

Trench 42 (Figures)

5.4.13 Trench 42 was placed in south-eastern part of the site in N-S alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (4203) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 43 (Figures)

5.4.14 Trench 43 was placed in south-eastern part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.55metres in depth. It exposed natural geology context (4303) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 44 (Figures)

5.4.15 Trench 44 was placed in south-eastern part of the site in N-S alignment and measured 25metres in length by 1.8metres in width and 0.54metres in depth. It exposed natural geology context (4403) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 45 (Figures)

5.4.16 Trench 45 was placed in south-eastern part of the site in E-W alignment but couldn't be excavated due to a large spoil heap present.

Trench 46 (Figures)

5.4.17 Trench 46 was placed in south-eastern part of the site in N-S alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (4603) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 47 (Figures)

5.4.18 Trench 47 was placed in south-eastern part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.55metres in depth. It exposed natural geology context (4703) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. Parent material was capped by colluvium therefore three geological test-pits were excavated here to evaluate sealing deposit. No archaeological cuts, artefacts or deposits were exposed here.

Trench 48 (Figures)

5.4.19 Trench 48 was placed in south-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (4803) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. Parent material was capped by colluvium therefore two geological test-pits were excavated here to evaluate concealing deposit. No archaeological cuts, artefacts or deposits were exposed here.

Trench 49 (Figures)

5.4.20 Trench 49 was placed in south-eastern part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (4903) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. Parent material was capped by colluvium therefore two geological test-pits were excavated here to evaluate hill-wash deposit. No archaeological cuts, artefacts or deposits were exposed here.

Trench 50 (Figures)

5.4.21 Trench 50 was placed in south-eastern part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (5003) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. Parent material was capped by colluvium therefore a geological test-pit was excavated at its southern end to evaluate concealing deposit. No archaeological cuts, artefacts or deposits were exposed here.

Trench 51 (Figures)

5.4.22 Trench 51 was placed in south-eastern part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (5103) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. Parent material was capped by colluvium therefore a geological test-pit was excavated here to evaluate hill-wash deposit. No archaeological cuts, artefacts or deposits were exposed here.

Trench 52 (Figures)

5.4.23 Trench 52 was placed in south-eastern part of the site in NNE-SSW alignment and measured 20metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (5203) comprising firmly compacted yellow to orange-grey clay-silt with occasional

pebbles. Two natural features were tested but no archaeological cuts, artefacts or deposits were exposed here.

Trench 54 (Figures)

5.4.24 Trench 54 was placed in southern-central part of the site in N-S alignment but couldn't be excavated due to a badger exclusion zone.

Trench 55 (Figures)

5.4.25 Trench 55 was placed in south-eastern part of the site in NNE-SSW alignment and measured 20metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (5503) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 56 (Figures)

5.4.26 Trench 56 was placed in south-eastern part of the site in NNE-SSW alignment but couldn't be excavated due to a large spoil heap present.

Trench 57 (Figures)

5.4.27 Trench 57 was placed in north-western part of the site in E-W alignment and measured 25metres in length by 1.8metres in width and 0.54metres in depth. It exposed natural geology context (5703) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 59 (Figures)

5.4.28 Trench 59 was placed in north-western part of the site in E-W alignment and measured 25metres in length by 1.8metres in width and 0.51metres in depth. It exposed natural geology context (5903) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 60 (Figures)

5.4.29 Trench 60 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.53metres in depth. It exposed natural geology context (6003) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 61 (Figures)

5.4.30 Trench 61 was placed in north-western part of the site in E-W alignment and measured 18metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology

context (6103) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 62 (Figures)

5.4.31 Trench 62 was placed in north-western part of the site in NNW-SSE alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (6203) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 66 (Figures)

5.4.32 Trench 66 was placed in north-western part of the site in NE-SW alignment and measured 20metres in length by 1.8metres in width and 0.57metres in depth. It exposed natural geology context (6603) comprising firmly compacted yellow to orange-grey clay-silt with frequent flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 68 (Figures)

5.4.33 Trench 68 was placed in north-western part of the site in NW-SE alignment and measured 25metres in length by 1.8metres in width and 0.54metres in depth. It exposed natural geology context (6803) comprising firmly compacted yellow to orange-grey clay-silt with occasional pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 69 (Figures)

5.4.34 Trench 69 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.51metres in depth. It exposed natural geology context (6903) comprising firmly compacted yellow to orange-grey clay-silt with frequent flint gravel and pebbles at eastern half of this trench. No archaeological cuts, artefacts or deposits were exposed here.

Trench 73 (Figures)

5.4.35 Trench 73 was placed in north-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (7303) comprising firmly compacted yellow to orange-grey clay-silt with frequent flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 74 (Figures)

5.4.36 Trench 74 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology

context (7403) comprising firmly compacted yellow to orange-grey clay-silt with frequent flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 75 (Figures)

5.4.37 Trench 75 was placed in north-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.5metres in depth. It exposed natural geology context (7503) comprising firmly compacted yellow to orange-grey clay-silt with frequent flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 76 (Figures)

5.4.38 Trench 76 was placed in south-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (7603) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 77 (Figures)

5.4.39 Trench 77 was placed in south-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (7703) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 78 (Figures)

5.4.40 Trench 78 was placed in south-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.48metres in depth. It exposed natural geology context (7803) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 79 (Figures)

5.4.41 Trench 79 was placed in south-western part of the site in NW-SE alignment and measured 25metres in length by 1.8metres in width and 0.53metres in depth. It exposed natural geology context (7903) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 80 (Figures)

5.4.42 Trench 80 was placed in south-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology

context (8003) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 81 (Figures)

5.4.43 Trench 81 was placed in south-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.56metres in depth. It exposed natural geology context (8103) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 82 (Figures)

5.4.44 Trench 82 was placed in south-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (8203) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here

Trench 83 (Figures)

5.4.45 Trench 83 was placed in south-western part of the site in NW-SE alignment and measured 25metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (8303) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 84 (Figures)

5.4.46 Trench 84 was placed in south-western part of the site in NW-SE alignment and measured 25metres in length by 1.8metres in width and 0.53metres in depth. It exposed natural geology context (8403) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 85 (Figures)

5.4.47 Trench 85 was placed in south-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (8503) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 86 (Figures)

5.4.48 Trench 86 was placed in south-western part of the site in WNW-ESE alignment and measured 25metres in length by 1.8metres in width and 0.51metres in depth. It exposed natural geology

context (8603) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 87 (Figures)

5.4.49 Trench 87 was placed in south-western part of the site in NNE-SSW alignment and measured 25metres in length by 1.8metres in width and 0.54metres in depth. It exposed natural geology context (8703) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 88 (Figures)

5.4.50 Trench 88 was placed in south-western part of the site in NW-SE alignment and measured 25metres in length by 1.8metres in width and 0.47metres in depth. It exposed natural geology context (8803) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 89 (Figures)

5.4.51 Trench 89 was placed in south-western part of the site in NW-SE alignment and measured 25metres in length by 1.8metres in width and 0.52metres in depth. It exposed natural geology context (8903) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 90 (Figures)

5.4.52 Trench 90 was placed in south-western part of the site in NNE-SSW alignment and measured 20metres in length by 1.8metres in width and 0.49metres in depth. It exposed natural geology context (9003) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

Trench 96 (Figures)

5.4.53 Trench 96 was placed in south-western part of the site in NNE-SSW alignment and measured 12metres in length by 1.8metres in width and 0.53metres in depth. It exposed natural geology context (9603) comprising firmly compacted yellow to orange-grey clay-silt with occasional flint gravel and pebbles. No archaeological cuts, artefacts or deposits were exposed here.

6 FINDS

6.1 Overview

6.1.1 A relatively small assemblage of archaeological finds comprising pottery sherds, worked lithics, CBM and Iron Slag was retrieved during the course of archaeological evaluation. Catalogues are presented in appendices.

6.2 Pottery

6.2.1 Pottery sherds were sparsely distributed across evaluation area and their distribution increased significantly within northern part of Phase 2A, mainly along 50yds stretch of NW-SE aligned trackway and at the junction area.

6.2.2 Recovered material comprised mostly small sized sherds. A couple of rims, but none of any depth, with no full or significantly large part profiles or substantial schemes of decoration.

6.2.3 Majority of the material was dated after 1550BC and more likely around 50 AD and not later than 75 AD. Two small glauconitic sherds from Trench 93 were broadly IA. The glauconitic sandy ware typically occurs in Greensand areas from around 1000 BC onwards, but generally only gets exported beyond its area of manufacture after 200 BC. Much depends on how close, or otherwise, the site is in relation to any areas of Greensand soils. If close by, the glauconitic sherds could date widely. If imported, then more commonly between 200 BC and 60 AD, which could offer a tighter focus for both these sherds between 200 BC and 50 AD, if associated.

6.2.4 Another notable 'Belgic' style grog tempered wares comprised 2 everted rims, the form all but identical, in (9105) and (9106) of [9104], potentially dating widely. 1 fresh everted flint tempered rim also in (9105). Some of the sherds in [6504] and (9105) and (9106) of [9104], show notably very similar fabrics and buff surfaces. The latter trait might be expected to occur more commonly after around 0 AD than significantly before, though this potential dating implication should be reviewed against any local and site-based trends which may be able to be established for this assemblage.

6.3 Lithics

6.3.1 The major concentration of lithics retrieved during the course of evaluation derived from northern extent of Phase 2A. Implements were collected mainly at two trackways junction and towards an oval enclosure thought to be associated with industrial activity.

6.3.2 Several deeply buried flint pieces were retrieved from southern extent of Phase 2C. Few notable although residual early prehistoric pieces derived from colluvium test-pits in Trenches 46, 48 and 49.

6.3.3 Further notable early prehistoric pieces derived from Trenches 58, 64 and 92. Possible microburin style flake fragments, M>EN was produced by feature 6406 in Trench 64 and fragment of bladelet, M>EN was retrieved from feature 9204. The latter was described as rare in assemblage.

6.3.4 All this material was made using flint. Prominent amongst the remnant cortexes were examples of dirty looking rough buff types. A few examples of thin dark grey-black or greeny grey-black cortxes were noted, along with some smooth strong white cortexes. Much of the raw material was of average quality at best, though some better quality flint was also present, the matrices of these often of mixed black and grey flint, with few cherty inclusions or flaws.

6.3.5 Given the likely Later Prehistoric date of the majority of the flintwork present, it would be presumed that the raw materials that were used during that time had been gathered as close to their place of use as was possible. The Earlier Prehistoric flintwork may well have employed better quality raw material that was either carefully selected from the resource available locally, or obtained from slightly further afield, perhaps in areas of chalk geology.

6.4 Iron Slag

6.4.1 The collected ironworking waste fragments (565g in total weight) were subjected to visual macroscopic and magnetic analysis. The detailed breakdown is presented in Appendix 6.

6.4.2 The presence of in-situ iron-slag is always a reliable indicator of on-site or nearby industrial activity, including iron smithing, and provides a valuable source of information about the kind of ore used, the furnace type and the type of technology implemented during the iron-smelting process.

6.4.3 Ironworking waste collected during the course of archaeological evaluation provided reliable evidence for iron production having been carried out with shaft-type furnaces using non-tapping technology. This method was probably used beyond the Roman Period. The ironworks are likely located on-site or in the vicinity certainly housed iron-smelting structures and an associated smithy.

7 ENVIRONMENTAL

7.1 Overview

7.1.1 No bulk soil samples were acquired during the course of evaluation.

8 DISCUSSION, CONCLUSIONS AND RECOMMENDATION

8.1 Introduction

8.1.1 The archaeological evaluation (Phases 2A and 2C) on land to the west of Wises Lane, South-West Sittingbourne, Kent, has investigated the extents of the proposed development area using 76 trenches each measuring up to 25m in length.

8.1.2 It has to be mentioned that several proposed evaluation trenches were not excavated and some were re-positioned from their original locations due to badger exclusion zones and due to hedgerow protection buffer.

8.1.3 Archaeological remains were exposed in 24 Trenches, however most of those remains that were identified are not thought to be significant comprising cultivated and developed agricultural soils and a series of linear features, thought to form a part of a field system thus suggesting that this part of PDA falls within wider Late Iron Age and Roman agricultural landscape.

8.1.4 A course of three trackways were investigated and broadly dated to the same Period. First trackway in northwest-southeast alignment is a continuation of the same feature investigated during Phase 1A excavation. Second potential trackway in north-south alignment was identified in Trench 23 and is thought that this path is branching-off at the T-junction of the main one and runs to the south towards potential settlement there as indicated by geophysical survey. Third trackway in northeast-southwest alignment was revealed in Trench 71 and is thought that this branch runs to the north-east towards another potential settlement there.

8.1.5 A significant pit was revealed in Trench 91, feature contained metallurgical waste (iron slag) adhered to lumps of baked soil. An oval enclosure of not yet determined function was revealed to the south in Trenches 95 and 56.

8.1.6 Additionally colluvium deposits were identified within southern extent of Phase 2C and tested by excavating a series of geological trial holes. An interesting three throw hole was identified under hill wash deposit in Trench 46 and its backfill produced several worked flint pieces including pick or axe dated to Mesolithic Period. Couple of undated but thought to be Late prehistoric pits were exposed under colluvium in test-pit 53A.

8.2 Discussion

8.2.1 Three trackways were revealed within northern extent of Phases 2A and 2C. The main track in NW-SE alignment was revealed in Trenches 25, 24, 32, 31, 65, 93, 64, 91 and 63 and is thought to be a continuation of the same feature investigated during Phase 1A SMS investigation.

8.2.2 There was no finds retrieved from trackway and/ or side ditches within Phase 2C however in its further run through Phase 2A the distribution of finds increased and from Trench 65 through 93, 91 and 63 retrieved dating evidence point out Late Iron Age and Early Roman Period.

8.2.3 Areas to the north and to the south of main trackway in Area 2C contain insignificant field ditches potentially of the same period suggesting that these remains are part of a wider agricultural landscape.

8.2.4 Another trackway in NE-SW alignment was identified in northern extent of Phase 2A (Trench 71). Feature is branching-off and heading towards potential settlement to the northeast.

8.2.5 Potential third trackway in almost N-S alignment was revealed in Trench 23. Feature is heading to the south towards potential settlement there indicated by geophysical survey. (Figure)

8.2.6 Colluvium deposits identified on the slope within Phase 2C south were thoroughly tested by excavating a series of geological test pits which hasn't revealed any significant archaeological features underneath. Couple of large undated pits were revealed at southern end of Trench 53 (TP 53 A) and a tree throw hole at northern end of Trench 46. Additionally residual but notable flintwork was exposed during test pit excavation in Trenches 46, 48 and 49. It is worth mentioning that three throw hole in Trench 46 produced pick or axe dated to the Mesolithic Period.

8.2.7 A significant oval enclosure was revealed in Trenches 56 and 95. Feature contained frequent lumps of baked soil thus suggesting that this enclosure may have once contained kilns or crop driers inside, however no furnace lining was found during the course of investigation.

8.2.8 A Pit revealed in Trench 91 contained iron slag fragments adhered to lumps of baked clay. A definite furnace walls (lining) were found during the course of investigation but these findings were not only limited to this one discrete feature but several other fragments of metallurgical waste were found between the stones comprising metalled surface of a main trackway.

8.2.9 Infrequent abraded Bronze Age potsherds were found across proposed development area similarly to recent archaeological evaluation at proposed Rugby Club (Phase 2E) and to recently completed SMS investigation in Phase 1A. This indicates protracted agricultural land use since Bronze Age and throughout Iron Age and Roman Period.

8.3 Conclusion

8.3.1 The archaeological investigation has been successful in fulfilling the primary aims and objectives of the Specification and has assessed the archaeological potential of land intended

for development. The results from this work will be used to aid and inform the Principal Archaeological Officer of any further archaeological mitigation measures that may be necessary in connection with any future development proposals.

8.3.2 Significant archaeological remains were identified within northern extent of Phase 2A and those remains comprise oval enclosure exposed in Trenches 56 and 95, metaled trackways and a refuse Pit in Trench 91 containing metallurgical waste.

8.3.3 The discovery of refuse Pit in Trench 91 and slag fragments between the stones comprising trackway surface in Trenches 64 and 63 and 91 suggest that iron bloomery furnaces and associated smithy may have been present on-site or in the surrounding area.

8.3.4 The investigation has confirmed the absence of any archaeological remains in southern part of Phase 2A and almost entire absence within southern part of Phase 2C of the proposed development area apart from features revealed in geological test-pits in Trenches 46 and 53.

8.3.5 A number of worked lithics were retrieved during colluvium test-pitting in southern part of Area 2C but majority have had a dull edges and break outs thus suggesting that they are residual in evaluated hill wash deposit.

8.4 Recommendation

8.4.1 There is no recommendation for further work within southern extent of Phase 2A. Further works in Phase 2C to be decided by Principal Archaeological Officer.

8.4.2 Further work that should take place is recommended for northern extent of Phase 2A but only in small open strip areas targeting oval enclosure in Trenches 95 and 56 and trackways junction and refuse pit revealed in Trench 91. The provision should be given to enlarge initially proposed areas if significant archaeological findings will be exposed.

8.4.3 The ultimate scope and extend of further mitigation measures will be decided by Principal Archaeological Officer separately in due course.

9 ARCHIVE

9.1 General

9.1.1 The Site archive, which will include paper records, photographic records, graphics and digital data, will be prepared following nationally recommended guidelines (SMA 1995; CIfA 2009; Brown 2011; ADS 2013).

9.1.2 All archive elements will be marked with the site/accession code, and a full index will be prepared. The physical archive comprises 1 file/document case of paper records and A4 graphics. The Site Archive will be retained at SWAT Archaeology offices until such time it can be transferred to a Kent Museum.

10 ACKNOWLEDGMENTS

10.1.1 SWAT would like to thank the Client for commissioning the project. Thanks are also extended to Simon Mason, Principal Archaeological Officer at Kent County Council, for his advice and assistance.

10.1.2 Peter Cichy, Bartek Cichy and Dan Leaver from SWAT Archaeology carried out the archaeological fieldwork; illustrations and drone photography were produced by Bartek Cichy. The report was written by Peter Cichy and on behalf of the client project was directed by Dr Paul Wilkinson MCIfA, FRSA of SWAT Archaeology.

11 REFERENCES

ADS 2013. Caring for Digital Data in Archaeology: a guide to good practice, Archaeology Data Service & Digital Antiquity Guides to Good Practice

Brown, D.H., 2011. Archaeological archives; a guide to best practice in creation, compilation, transfer and curation, Archaeological Archives Forum (revised edition)

Chartered Institute for Archaeologists, 2009, Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives, Institute for Archaeologists

Chartered Institute for Archaeologists, 2014, Standard and guidance: for field evaluation.

Chartered Institute for Archaeologists, 2014, Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives.

Department of the Environment, 2010, Planning for the Historic Environment, Planning (PPS 5) HMSO.

English Heritage 2002. Environmental Archaeology; a guide to theory and practice of methods, from sampling and recovery to post-excavation, Swindon, Centre for Archaeology Guidelines

English Heritage, 2006, Management of Research Projects in the Historic Environment (MoRPHE).

SMA 1993. Selection, Retention and Dispersal of Archaeological Collections, Society of Museum Archaeologists

SMA 1995. Towards an Accessible Archaeological Archive, Society of Museum Archaeologists

Archaeological Desk-Based Assessment in Advance of the Proposed Development of Land at New Haine Road, Ramsgate, Thanet, Kent. SWAT Archaeology December 2020

SWAT Archaeology 2022 Specification for an Archaeological Evaluation of Land to the west of Wises Lane, South-West Sittingbourne, Kent

12 APPENDIX 1 – HER FORM

Site Name: Land to the west of Wises Lane, South-West Sittingbourne, Kent **Phases 2A and 2C**

SWAT Site Code: WLS2-EV-22

Site Address: As above

Summary. *Swale & Thames Survey Company (SWAT Archaeology) were commissioned to undertake an archaeological evaluation on Land to the west of Wises Lane, South-West Sittingbourne, Kent (Phases 2A and 2C). The archaeological programme was monitored by the Principal Archaeological Officer at Kent County Council.*

The archaeological evaluation (Phases 2A and 2C) has investigated the extents of the proposed development area using 76 trenches each measuring up to 25m in length.

Archaeological remains were exposed in 24 Trenches, however most of those remains that were identified are not thought to be significant comprising cultivated and developed agricultural soils and a series of linear features, thought to form a part of a field system thus suggesting that this part of PDA falls within wider Late Iron Age and Roman agricultural landscape.

A course of three trackways were investigated and broadly dated to the same Period. First trackway in northwest-southeast alignment is a continuation of the same feature investigated during Phase 1A excavation. Second potential trackway in north-south alignment was identified in Trench 23 and is thought that this trackway is branching-off at the T-junction of the first one and runs to the south towards potential settlement there as indicated by geophysical survey. Third trackway in northeast-southwest alignment was revealed in Trench 71 and is thought that this branch runs to the north-east towards another potential settlement there.

A significant pit was revealed in Trench 91, feature contained metallurgical waste (iron slag) adhered to lumps of baked soil. An oval enclosure of not yet determined function was revealed to the south in Trenches 95 and 56.

Additionally colluvium deposits were identified within southern extent of Phase 2C and tested by excavating a series of geological trial holes. An interesting three throw hole was identified under hill wash deposit in Trench 46 and its backfill produced several worked flint pieces including pick or axe dated to Mesolithic Period. Couple of undated but thought to be Late prehistoric pits were exposed under colluvium in test-pit 53A.

The archaeological evaluation has been successful in fulfilling the primary aims and objectives of the Specification and has assessed the archaeological potential of land intended for development. The

results from this work will be used to aid and inform the Principal Archaeological Officer of any further archaeological mitigation measures that may be necessary in connection with any future development proposals.

Further work is recommended for Phase 2A

District/Unitary: Swale Borough Council

Period(s): prehistory, Bronze Age, Late Iron Age, Roman, Post-medieval

NGR (centre of site to eight figures) NGR 588260 163800

Type of Archaeological work: Archaeological Evaluation

Date of recording: May-July 2023

Unit undertaking recording: Swale and Thames Survey Company (SWAT Archaeology)

Geology: Seaford Chalk Formation and Thanet Formation of Sand, Silt and Clay

Title and author of accompanying report: Peter Cichy (2023) Archaeological Evaluation of Land to the west of Wises Lane, South-West Sittingbourne, Kent (Phases 2A and 2C)

Location of archive/finds: SWAT. Archaeology. Graveney Rd, Faversham, Kent ME13 8UP

Contact at Unit: Paul Wilkinson

Date: 17/08/2023 / Revised 1 November 2023

Pete Knowles

Lithics

Consultation and Curation

Summary Report: Lithics Analysis and Geoarchaeological Interpretation for an Archaeological Evaluation (Phase 2A) on Land to the West of Wises Lane, Sittingbourne, Kent (NGR TQ 88316 63868)

Report by: Mr. Peter Knowles BSc (Hons) Ph.D. (student) 19th June 2023

Plate 1: Trench 75, on land north-west of School Lane, Sittingbourne

1 Introduction

1.1 Non-Technical Summary

1.1.1 During the archaeological evaluation on land to the west of Wises Lane, Sittingbourne, angular flints were found in the subsoil of several trenches and a discrete cluster in one trench (75) (Plates: 1&2). The flints were analysed on-site, to ascertain if they could be Palaeolithic. The analysis confirmed that they were naturally fractured, a review of the basal geology at the site confirms that it is underlain by chalk and the clusters of flint have likely accumulated through natural (colluvial) processes (Historic England, 2015).

1.2 Topographic & geological context

1.2.1 The evaluation area for Phase2A (SWAT, 2023) lies on the northern dip slope of the North Downs, the center of Sittingbourne is ~2.5km to the east, the A249 trunk-road ~400m to the North-West.

1.3 Bedrock Geology

1.3.1 The underlying bedrock geology across the Site is cretaceous chalk, mapped by the BGS (http:// www.bgs.ac.uk) as the Seaford Chalk Formation – Chalk a sedimentary bedrock formed between 89.8 and 83.6 million years ago during the Cretaceous period. Also, on the north of the site, there are remnant patches Thanet Formation - Sand, silt and clay sedimentary bedrock formed between 59.2 and 56 million years ago during the Palaeogene period.

1.4 Superficial Geology

1.4.1 The BGS maps areas of Head - Clay and silt, these sedimentary superficial deposits formed between 2.588 million years ago and the present day, during the Quaternary and early Holocene period.

Plate 2: Trench 75, angular flint

1.5 Lithics

1.5.1 Approximately seventy pieces of flint were retained during the evaluation, these had been recovered from the subsoil of Trench, 71 and 75 (plate 2). They varied in size and morphology, flat flakes ~2-3cm^2, angular chunks ~5-10cm^3. There was a mixture of staining and patination, general stained white, some were patinated with a glossy lustre.

1.5.2 On initial inspection these flakes and chunks appear to represent debitage and flake tools, further analysis showed that they didn't exhibit any of the feature associated with anthropogenically modified flint: conchoidal rings, fissures, bulbs of percussion or prepared platforms.

1.5.3 The flints were likely eroded from the underlying upper chalk with accumulations occurring due to colluvial slope process, they have been subsequently thermally fractured due to freezing and thawing. The flints all exhibited characteristic fracturing by frost: pot-lid, frost-pitting and columnar or starch fracture (Shepherd, 1972).

1.5.4 Whilst the context and concentration of flints in Trench 75 was relatively discrete, this is not uncommon, and these types of flint are very common in the subsoil around the North Downs.

1.5.5 Similarly, patinated and fractured flints were noticed in the spoil heaps of other trenches whilst walking across the site, and particularly the spoil heaps next to bore holes.

2 Conclusion

2.1.1 The flints found in Trench 75, have not been humanly modified, they have likely been eroded from the underlying chalk ridge to the south, they have subsequently been fractured during thermal process (freeze thawing). The site has low Palaeolithic potential.

3 References

Historic England (2015). *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record*

Shepherd, W. (1972). *Flint: its origin, properties and uses*. Transatlantic Arts.

SWAT (2023). *Specification for an Archaeological Evaluation of Land at the Proposed Western Link Road including the Chestnut Street Roundabout to the west of Wises Lane, South-West Sittingbourne, Kent*

Catalogues of the pottery, ceramic building materials and copper alloy objects, recovered during an archaeological evaluation at Wises Lane, Sittingbourne, Kent

Site Code: WLS2-EV-23

Analyst: Paul Hart
Last updated: 03.08.2023

For: Swale and Thames Archaeology Survey Company

Contents

1. Period Codes employed

Period	*Code*	*Date (circa)*			
Later Prehistoric	LP	1550	-	50	BC
Middle Bronze Age	MBA	1550	-	1350	BC
Mid to Late Bronze Age	MBA-LBA	1350	-	1150	BC
Earliest Iron Age	EIA	1000/900	-	600	BC
Iron Age	IA	1000/900 BC	-	50	AD
Mid to Late Iron Age	MLIA	200	-	50	BC
Late Iron Age	LIA	50	-	0	BC
Latest Iron Age	LIA-ER	0	-	50	AD
Early Roman	ER	50	-	150	AD
Early Medieval	EM	1050	-	1200	AD
Post-Medieval	PM	1525	-	1750	AD
Late Post-Medieval	LPM	1750	-	1900	AD
Modern	MOD	1900+			AD

Dating

> : To/or later.
/ : Or/or indicting a preference within a broader range.

2. Quantification and spot-dating of the pottery assemblage

2.1. Methodology

The sherds were examined in good light using a hand lens of x10 magnification and were catalogued on a context, total quantity, bulk weight (calculated to the nearest gram), period, ware type, estimate of the number of vessels per ware, condition and date preference basis. They are listed in date order from the earliest to the latest. No information about the contexts or their stratigraphic relationships was known unless stated. In the notes, the pieces are typically plain or less diagnostic body sherds unless stated otherwise.

All dates given are *circa*.

It should also be noted that:

- All form and decorative pieces are noted and described in the catalogue and their presence is highlighted by the inclusion of the word 'DRAW' (which does not mean that such pieces necessarily need to be drawn for archive level reporting or for publication).
- The material has been bagged by period and separated into DRAW-ables (which do not necessarily need to be drawn for archive or final site reports or publication) and body sherds.

2.2. Abbreviations used in 2.3.

Wear

F : Fresh/fairly fresh
L : Light
M : Moderate
H : Heavy
C : Chipped
S : Splintered/Shattered (1 or both original surfaces missing)

Dating

> : To/or later
/ : Or/or indicting a preference within a broader range

2.3. Catalogue: Quantification and spot-dating of the pottery

Context					***Total sherds***	***Total weight***
Contxt	Information on the nature of the context if known.					
Start	**Likely commencement date of the context based on the pottery evidence.**					
End	**Likely end date of the context based on the pottery evidence.**					
Dating	**Implications.**					
Notes	Highlighting elements, wares and issues of particular note.					
Count	*Period*	*Ware*	*Vessels*	*Wear*	*Date preference*	
(6310) [6304]					**3 sherds**	**2 g**
Contxt						
Start	**Likely after 1550 BC.**					
End	**Unclear, potentially residual.**					
Dating	**Could date widely, broadly MBA>LIA-ER.**					
Notes						
Count	*Period*	*Ware*	*V*	*W*	*Date preference*	
3	MBA>LIA-ER	Flint tempered	1	S	1550 BC - 50 AD	
	Small shattered fragments.					
(6405) [6404]					**5 sherds**	**9 g**
Contxt						
Start	**Likely after 1550 BC and potentially after 25/50 AD, but consider the nature of the context and the vertical distribution, if relevant and possible.**					
End	**Unclear, residual.**					
Dating	**The flint tempered could date widely. The grog tempered could also date widely, though is more likely to be 'Belgic', considering that there is a precedence for such in the site assemblage. If so, its oxidised surface is more likely to occur after 15 BC. The slightly sandy sherd probably dates MLIA>ER and could be an example of a LIA-ER>ER 'silty', 25-75 AD if so.**					
Notes	Small sized often splintered sherds and fragments.					
Count	*Period*	*Ware*	*V*	*W*	*Date preference*	
2	MBA>MLIA	Flint tempered	1	H	1550-50 BC	
	Small sherd and fragment, ?coarse, patchy oxidised exterior.					
2	?LIA-ER>ER	?'Belgic' style grog tempered	1	S M	0-75 AD	
	Small sherd and fragment, oxidised ?exterior, sparse fine grits ?flint.					
1	MLIA>/?LIA-ER>ER	Sparse flint tempered fine sandy	1	M	?25-75 AD	
	Small, slightly sandy, with sparse fine grits probably flint, exterior brownish.					
(6407) [6406]					**5 sherds**	**5 g**
Contxt						
Start	**Likely after 1550 BC.**					
End	**Unclear, potentially residual.**					
Dating	**Could date widely, broadly MBA>LIA-ER.**					
Notes						
Count	*Period*	*Ware*	*V*	*W*	*Date preference*	
5	MBA>LIA-ER	Flint tempered	1	S	1550 BC - 50 AD	
	Small shattered fragments, reduced.					
(6410)					**3 sherds**	**8 g**
Contxt						
Start	**Likely after 1550 BC and potentially after 1000 BC.**					
End	**Unclear, but nothing certainly later than 50 AD and possibly by 75 BC.**					
Dating	**Little specific data. Broadly MBA>LIA-ER, the fresher sherds perhaps more likely/commonly IA. The lack of any 'Belgic' grogged could suggest nothing need date after 75 BC, though this is a minimal collection and the relationship of the 'fresher' looking elements to the context is questionable.**					
Notes	All small, 1 at least residual and, given the size and quantity, the rest might be too.					

Count	*Period*	*Ware*	*V*	*W*	*Date preference*
1	MBA>MLIA	Flint tempered	1	H	1550-50 BC
	Small, thick, orange exterior.				
1	MBA>LIA-ER	Flint tempered	1	L	1550/1000 BC - 50 AD
	Small, medium-walled, smoothed surfaces.				
1	MBA>LIA-ER	Flint tempered	1	L	1550/1000 BC - 50 AD
	Fragment.				

[6504] T65			**6 sherds**		**33 g**
Contxt					
Start	**Likely after 125 BC and just possibly after around 0 AD.**				
End	**Nothing certainly after 75 AD.**				
Dating	**Little specific data and the fabric could date widely, though the buff surfaces may be more common after around 0 AD than before. Notably similar to some sherds within [9104] and see the comments about this in [9104].**				
Notes	Akin in fabric and surface colour to a rim in (9105) and body sherds in (9106), both of [9104].				
Count	*Period*	*Ware*	*V*	*W*	*Date preference*
6	MLIA>ER	'Belgic' style grog tempered	1	C L	125 BC/?0-75 AD
	Small thick-walled body sherds, largest with an incised horizontal linear groove, grey-black core with mostly fine black grog, buff surfaces.				

(6509) [6508]			**2 sherds**		**7 g**
Contxt					
Start	**Likely after 100 BC.**				
End	**Unclear, residual.**				
Dating	**Likely after 125 BC and more common after 75 BC.**				
Notes					
Count	*Period*	*Ware*	*V*	*W*	*Date preference*
2	MLIA>ER	'Belgic' style grog tempered	1	H	125 BC - 75 AD
	Small thick reduced body and scrap.				

(7205) [7204]			**12 sherds**		**50 g**
Contxt					
Start	**Depending upon the nature of the context, more likely after 50 BC and potentially after 25 AD.**				
End	**Unclear, all are residual to some degree, though nothing certainly later than 75 AD.**				
Dating	**All somewhat worn and potentially residual to a degree, with the latest element 25-75 AD. 1 'Belgic' vessel is broadly 50 BC - 75 AD and if these are associated with each other and some or all of the flint tempered present, then it would suggest a focus for the group between 25-50 AD. The associations are unclear however, given all are somewhat residual. Consider the nature of the context and the vertical distribution, if relevant and possible.**				
Notes	All somewhat worn. 6 from possibly the same 'Belgic' vessel, with a small bead rim and strongly curving body with a cordon at the ?shoulder, likely 50 BC - 75 AD. 1 strongly oxidised strongly gritted flint tempered is not more significantly worn than the 'Belgic', but seems less likely to be 'Belgic' given its colour, preferably <50 BC at present, though could date later perhaps (something to consider if an association can be proved, which is unlikely). 1 silty ware 25-75 AD. DRAW: 1 rim and cordoned body, ?same vessel and no conjoining vessel profile (not worth drawing).				
Count	*Period*	*Ware*	*V*	*W*	*Date preference*
2	IA/?<MLIA	Flint tempered	1	M	1000-50 BC/50 AD
	Small sherd and fragment, medium-walled, strong fine to medium temper, orange throughout.				
3	IA	Flint tempered	1	S H	1000 BC - 50 AD
	Small, reduced, medium to thinnish, splintered, moderate at most fine to medium temper.				
6	LIA>ER	'Belgic' style grog tempered	?1	C M	50 BC - 75 AD
	1 medium sized strongly curving body sherd with cordon at the ?shoulder. Rest small, including 1 bead rim. Medium-walled, grey-black surfaces with brown interior, mostly fine black grog.				

	DRAW (not worth drawing).				
1	LIA-ER>ER	Silty + sparse flint/grit	1	M	25-75 AD
	Small, thickish, light brown, sparse fine flint/grit.				
(9105) [9104]				**8 sherds**	**107 g**
Contxt					
Start	**Likely after 125 BC, potentially after 75 BC and just possibly after 0 AD (review).**				
End	**Likely by 50 AD.**				
Dating	**None need be significantly residual and most could be broadly contemporary, the conjunction of the rims and fabrics suggesting a date between 125 BC and 50 AD, the dominance of the grog tempered fabrics more likely after 75 BC. The grog tempered rim shows buff surfaces, which might be expected to occur more commonly after around 0 AD than significantly before, though this should be reviewed against any local and site-based trends which may be able to be established for this assemblage.**				
Notes	Mostly 'Belgic' style grog tempered fabrics, the majority thick-walled and all with smoothed surfaces. 1 comparatively largeish panel from an everted rim (of very limited depth) is likely from a storage jar of Thompson (1982) C6-1 type. This is a long lived form (Thompson 1982, 256-267), which is all but identical to a reduced grogged rim in (9106), while the buff surfaced thick-walled fabric is akin to sherds in [6504] and (9106). 1 small thick flint tempered everted rim, plus an associated sherd, appears freshest of all and could be contemporary. DRAW: 2 rims (not worth drawing).				
Count	*Period*	*Ware*	*V*	*W*	*Date preference*
1	MLIA>LIA-ER	'Belgic' style grog tempered	1	C M	125 BC - 50 AD
	Small, thick, concave, reduced.				
1	MLIA>LIA-ER	'Belgic' style grog tempered	1	M	125 BC - 50 AD
	Small, medium-walled, reduced.				
2	MLIA>LIA-ER	Flint tempered	1	C F	125 BC - 50 AD
	Small thick everted rim and small body sherd, frequent small to medium temper, orange on rim top. DRAW (not worth drawing).				
4	MLIA>LIA-ER	'Belgic' style grog tempered	?1	C L	125 BC/?0-50 AD
	3 thick-walled medium sized rims, 2 conjoining to an everted rim with a tapering exterior edge and concave neck, broken above the shoulder (just below the return). Likely a Thompson (1982) type C6-1 storage jar, which could date widely. Mostly fine black grog, grey-black core and thin mostly buff to darker brown surfaces. 1 small body sherd with single horizontal groove potentially same vessel. DRAW (not worth drawing).				
(9106) [9104]				**6 sherds**	**58 g**
Contxt					
Start	**Likely after 125 BC, probably after 75 BC and just possibly after 0 AD (review).**				
End	**Unclear. Nothing certainly after 75 AD, though likely residual to some degree.**				
Dating	**Solely 'Belgic' style grog tempered sherds, which would be expected to dominate assemblages after 75 BC. The 1 rim present could date widely, while some buff surfaced body sherds might be expected to occur more commonly after around 0 AD than significantly before. The potential should be reviewed against any local and site-based trends which may be able to be established for this assemblage, however.**				
Notes	Notable scarred and potentially residual to some degree. 1 reduced 'Belgic' style everted rim, the form all but identical to an example in (9105); could date widely. Buff surfaced body sherds from a different vessel are akin to said rim in (9105), as well as other body sherds in [6504]. DRAW: 1 rim (not worth drawing).				
Count	*Period*	*Ware*	*V*	*W*	*Date preference*
3	MLIA>ER	'Belgic' style grog tempered	1	C M	125/75 BC - 75 AD
	2 conjoin to a medium sized thick-walled rim, tapering to the tip, concave neck, broken above the shoulder (just below the return), reduced, smoothed. 1 small body sherd likely relates. All scarred. DRAW (not worth drawing).				
3	MLIA>ER	'Belgic' style grog tempered	1	C M	125/75 BC/?0-75 AD
	Small body, buff surfaces, grey-black core with mostly fine black grog. Scarred.				

(9205) [9204]					**1 sherd**	**5 g**
Contxt						
Start	**After 3350 BC and perhaps more likely after 1550 BC.**					
End	**Unclear, residual.**					
Dating	**Could be MN or LP. Within the latter, the coarse oxidised fabric is more likely to be MBA>MBA-LBA or EIA.**					
Notes						
Count	*Period*	*Ware*	*V*	*W*	*Date preference*	
1	MN/MBA>MLIA	Flint tempered	1	H	1550-600/50 BC	
	Small, thick, coarse, orange surfaces.					
(9305) [9304]					**2 sherds**	**9 g**
Contxt						
Start	**Potentially after 100 BC.**					
End	**Unclear, residual.**					
Dating	**If related, a date for both between 125 BC and 50 AD is likely. Consider the nature of the context and the vertical distribution, if relevant and possible.**					
Notes	1 small everted flint tempered rim, more likely MLIA>LIA-ER, considering also the presence of a 'Belgic' grog tempered, though both are worn and residual, with no associations guaranteed. The flint tempered has an orangey oxidised exterior, which is not typical on 'Belgic' material until after 15 BC at least and then is still typically confined to certain grog tempered vessels. DRAW: 1 small rim (not worth drawing).					
Count	*Period*	*Ware*	*V*	*W*	*Date preference*	
1	MLIA>LIA-ER	Flint tempered	1	C H	200/125-50 BC/0-50 AD	
	Small rim, everted with concave neck, occasional fine to medium flint, dull orange exterior and brown interior. DRAW (not worth drawing).					
1	MLIA>ER	'Belgic' style grog tempered	1	C H	125 BC - 75 AD	
	Small.					
(9307) [9306]					**2 sherds**	**2 g**
Contxt						
Start	**Likely after 1000 BC and potentially after 200 BC.**					
End	**Unclear, residual.**					
Dating	**Both broadly IA. The glauconitic sandy ware typically occurs in Greensand areas from around 1000 BC onwards, but generally only gets exported beyond its area of manufacture after 200 BC. Much depends on how close, or otherwise, the site is in relation to any areas of Greensand soils. If close by, the glauconitic sherd could date widely. If imported, then more commonly between 200 BC and 60 AD, which could offer a tighter focus for both these sherds between 200 BC and 50 AD, if associated, though no associations are guaranteed.**					
Notes	Scraps. The glauconitic sandy could be and probably is a Medway area product, though this is a minimal sample only.					
Count	*Period*	*Ware*	*V*	*W*	*Date preference*	
1	IA	Flint tempered	1	H	1000 BC - 50 AD	
	Small fragment.					
1	IA>ER/?MLIA>ER	Glauconitic sandy	1	S M	1000/?200 BC - 60 AD	
	Small shattered reduced scrap. ?Medway area.					
Totals					**55 sherds**	**295 g**

2.4. Comments

Mostly small sized sherds. A couple of rims, but none of any depth, with no full or significantly large part profiles or substantial schemes of decoration. Some notes follow.

'Belgic' style grog tempered wares

2 everted rims, the form all but identical, in (9105) and (9106) of [9104], potentially dating widely. 1 fresh everted flint tempered rim also in (9105).

Some of the sherds in [6504] and (9105) and (9106) of [9104], show notably very similar fabrics and buff surfaces. The latter trait might be expected to occur more commonly after around 0 AD than significantly before, though this potential dating implication should be reviewed against any local and site-based trends which may be able to be established for this assemblage.

Glauconitic sandy ware

The 1 tiny fragment in this ware, more likely a Medway area product, could date widely, between 1000 BC and 60 AD if a local product, though from 200 BC to 60 AD if imported. Consideration needs to be given as to whether there are any Greensand soils in close proximity to the site, or not.

3. Catalogues of the ceramic building materials

3.1. Catalogue of tile

Context	*Quantity*	*Weight*	*Fabric*	*Period*
(9305) [9304]	1	10 g	Slightly sandy	EM>/?PM>LPM
	Small thick fragment, oxidised with narrow black core, hard.			
(9108) T91	1	3 g	Sandy	EM>LPM
	Small, ill-sorted mostly medium sized coloured sand (clear, grey, pinkish, reddish and dark) and possible rounded ironstone, pale orange throughout.			
Totals	**1**	**10 g**		

3.2. Catalogue of daub

Context	*Quantity*	*Weight*	*Fabric*	*Pottery*
(5608) [5604]	6	33 g	Silty	
	Record on the bag as 'Burnt earth'. Rounded nodules, some flattish surfaces, 1 more medium sized and the rest small, sparse fine sand, orange throughout.			
(9105) [9104]	4	25 g	Silty	75 BC/?0-50 AD
	Small rounded lumps, some with flattish surfaces, fine silty, with some fine sand, orange throughout.			
Totals	**4**	**25 g**		

4. Catalogue of copper alloy objects

Context	*Quantity*	*Weight*	*Description*	*Period*
TR.65 Stone surface	1	4 g	Miscellaneous Cu alloy object	?/?LPM>MOD
	Capital 'I' shaped piece with concave sides, possibly broken from a strip of cut-out circles/discs?			
Totals	**1**	**4 g**		

5. Bibliography

Thompson I. 1982. *Grog-tempered 'Belgic' Pottery of South-eastern* England. BAR British Series 108.

A brief review catalogue of the worked lithics, plus catalogues of burnt flint 'potboilers' and slag, recovered during an archaeological evaluation at Wises Lane, Sittingbourne, Kent

Site Code: WLS2-EV-23

Analyst: Paul Hart
Last updated: 01.08.2023

For: Swale and Thames Archaeology Survey Company

Contents

1. Quantification and brief review of the worked lithics

1.1. Methodology

The information presented was based upon an initial brief review of the worked lithics. The artefacts were examined using a hand lens of x10 magnification and each was considered on its own merits. Details about the nature of the context and any pottery recovered, which informed the interpretation but not the dating of the individual pieces, were noted where known. No cataloguing of the physical traits of the artefacts was conducted at this stage. No overall summary and period-based listing and review is presented at this time.

The brief review format was adopted due to the need for rapid feed-back to aid the swift production of a site report. The material was unwashed, but only slightly dirty. It was not dirty enough that any significant detail was likely to have remained hidden. Due to the brief nature of this review, it would be recommended in any subsequent assessment report which may be written, that it would be ideal if all of the worked lithics were re-catalogued and considered more fully (including recording a selection of the prime physical traits, for preservation by record). For practical necessity however, such work could be focussed upon the more specifically diagnostic elements and any pieces that can be dated by a reliable contemporary relationship with pottery or associated contexts which are tightly dated.

All dates given throughout are *circa*.

1.2. The underlying geology and its implications

This is considered to primarily comprise deposits of 'brickearth' type soils (ie. clays, silts, sands, or combinations of such), with occasional areas of gravels (Peter Cichy *pers. comm.*). Brickearth geology typically does not produce those patinas that are frequently helpful in the identification of residual worked lithics that are otherwise undiagnostic of being so on their own merits. As such, it is considered that none of the worked lithics on this site can be guaranteed to be contemporary with their deposits or horizons on their own merits. The absence of strong obvious patinas also hinders the easy identification of those worked lithics that were re-used at a later date following their original creation and discard.

1.3. Period Codes employed

Period	*Code*	*Date (circa)*			
Mesolithic	M	9200	-	4000	BC
Neolithic	N	4000	-	2300	BC
First/Early/Earlier Neolithic	EN	4000	-	3350/3000	BC
Beaker Period	BK	2450	-	1750	BC
Bronze Age	BA	2100	-	1000/900	BC
Early Bronze Age	EBA	2100	-	1550	BC
Middle Bronze Age	MBA	1550	-	1350	BC
Mid to Late Bronze Age	MBA-LBA	1350	-	1150	BC
Earliest Iron Age	EIA	1000/900	-	600	BC
Early to Mid Iron Age	EMIA	600	-	350	BC

1.4. Abbreviations used in 1.5

Dating

>	:	To/or later
<	:	No later than
/	:	Or/or indicting a preference within a preceding broader range
?	:	Possibly
??	:	Just might be/very slight preference for

Key to abbreviations for notes

A	:	Advanced (patina).	nat	:	Natural.
abr	:	Abrupt (retouch).	nr	:	Near.
adj	:	Adjacent.	obv	:	Obviously.
adv	:	Advanced (patina).	oppos	:	Opposite.
ang	:	Angular.	P	;	Primary (flake).
B	:	Blade (flake) or Blue (patina).	PP	:	Platform preparation (abrasion).
back	:	Backed.	pat	:	Patina.
bifac	:	Bifacial (retouch).	plat	:	Platform.
BL	:	Bladelet (flake).	poss	:	Possible.
brk	:	Break.	prob	:	Probably.
BW	:	Blue-white (patina).	prx	:	Proximal (flake).
convx	:	Convex.	resid	:	Residual.
cortx	:	Cortex.	ret	:	Retouch.
dentic	:	Denticulate (retouch).	RM	:	Raw material.
dir	:	Direct (retouch).	RU	:	Re-use.
dist	:	Distal (flake).	S	:	Sort, Secondary (flake) or Strong (patina).
dors	:	Dorsal (flake).	sec	:	Section.
E	:	Early (patina).	SH	:	Short (flake).
eg	:	Example.	signif	:	Significant/ly.
exp	:	Expedient.	sm	:	Small.
fl	:	Flake.	SQ	:	Squat (flake).
frag	:	Fragment.	subseq	:	Subsequent.
G	:	Grey (patina).	term	:	Termination (flake).
incip	:	Incipient (cones of percussion).	T	:	Tertiary (flake).
inc	:	Including.	triang	:	Triangular.
inv	:	Inverse (retouch).	trunc	:	Truncating/truncated.
irreg	:	Irregular.	u-w	:	Use-wear.
L	:	Long (flake).	util	:	Utilised.
lat	:	Lateral (flake).	Unpat	:	Unpatinated.
lrg	:	Large.	V/v	:	Very.
M	:	Moderate (patina).	vent	:	Ventral (flake).
marg	:	Marginal (retouch).	W	:	White (patina).
med	:	Medium (size).	Y	:	Yellowish (patina).
mod	:	Moderate.			

NB. In the notes, the character of the retouch can be considered as small sized and marginal unless stated otherwise.

1.5. Catalogue: Quantification and brief review of the worked lithics

Context			**Total lithics**	**Total weight**
Context:	Information on the nature of the context if known.			
Pottery:	Date of any pottery present or the ceramic date of the context if known.			
Notes:	Elements and trends of initial interest.			
Summary:	**Dates and relationships to context.**			
Patinas:	Mostly unpatinated or yellowy sheen, relationships unclear given the brickearth geology.			
Class/Type	*Notes/Details*	*Period*	*Preference*	*Re-using*
(04) Colluvium			**3 lithics**	**100 g**
Context:				
Pottery:				
Notes:	.			
Summary:	**Little specific data. 1/2 could be MBA>EMIA+. Consider their horizons of recovery, if possible.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Lrg fl, much cortx, obliq brk truncates dist end, chips.			
Retouched				
?Denticulate/side scraper on natural			MBA>EMIA+	
	Fl-like pot-lid, 1 lat corrtx, other lat thin with some inv abr ret forming dentic-like edge.			
?Notch			??MBA>EMIA+	
	Sm thick fl, dist part brkn, multiple incip cones on plat. 1 notch with some apparent abras 1 lat oppos cortxd other.			
(5605) [5604]			**2 lithics**	**24 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data and all could be residual.**			
Waste		*Period*	*Preference*	*Re-using*
?Shatter/?natural				
?Utilised				
Flake – end scraper				
	Sm prim, dist brks. ?PP (unnecessary?), or from use? .			
(5608) [5604]			**4 lithics**	**44 g**
Context:				
Pottery:				
Notes:	1 decent looking medium sized flake, residual, rest small, 1 also possibly residual. 1 used natural, MBA>EMIA+.			
Summary:	**Little specific data. 1 possibly M>EBA, this residual, as potentially is another flake. 1 MBA>EMIA+, relationship to context unclear.**			
Waste		*Period*	*Preference*	*Re-using*
Flake			?M>EBA	
	Decent looking L fl, many pre and post Y pat chips, residual.			
Flake				
	Sm, chips and brks.			
Shatter				
Retouched				
End scraper			MBA>EMIA+	
	Sm fl-like nat, thickest cortxed 'prx' end shows sm area chippy scarring.			

(5804) [5804]			**1 lithic**	**7 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data, more likely MBA>EMIA+ if used, relationship unclear.**			
?Utilised		*Period*	*Preference*	*Re-using*
Flake – side scraper			??MBA>EMIA+	
	Sm, thick triang, 1 uncortxd lat sm area scars and chips.			

(5805) [5804]			**1 lithic**	**1 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data. Could be MBA>EMIA+, relationship unclear, though potentially residual.**			
Retouched		*Period*	*Preference*	*Re-using*
Misc. ret. flake				
	Sm, 1 dist corner short length inv semi-abr ret.			

[5806]			**3 lithics**	**24 g**
Context:				
Pottery:				
Notes:	Notable 1 small piece that looks like the broken proximal end of a potential primary long/narrow flake or blade with a strong chalk-soil type patina, with a couple of unpatinated ?retouched scars/chips on 1 lateral. Suspicious, however.			
Summary:	**Little specific data. 1 instance of a strong chalk-soil type patina on a possible struck flake, which would be a rare occurrence in the site assemblage if so.**			
Waste		*Period*	*Preference*	*Re-using*
?Flake				
	Chips.			
Retouched				
?Notch				
	Sm dist frag, dist end sm notch. .			
?Retouched				
Misc. ret. ?flake/natural			*MBA>EMIA+	??M>EBA
	Sm prim ?flake/?natural, appears like the snapped prx frag from a poss narrow fl/B, 1 lower lat showing an inv brk and some chips, the part hinging dist end some dir abras, all these and the fl showing an early strong BW pat. Other upper lat shows couple unpat dir semi-abr ?ret scars. *If so.			

(6306) [6304]			**5 lithics**	**269 g**
Context:				
Pottery:				
Notes:	Medium to large sized thick crude looking pieces and natural, plus 1 better looking large broken flake which could, but need not, date earlier.			
Summary:	**Majority likely MBA>EIA and MBA>EMIA+. Given the quantity, could be related to each other and the context, though no associations are guaranteed, given the underlying geology.**			
Waste		*Period*	*Preference*	*Re-using*
?Core			?MBA>EMIA+	
	Lrg thick ang chunk, some /fl removal scars.			
Retouched				
Adjacent hollow and side scraper on natural			MBA>EIA	
	Med sized fl-like nat, 1 'lat' an uneven straight edge and adj hollow of semi-abr ret.			
End scraper			MBA>EMIA+	
	Thick fl, broad steep cortxd dist end 2 short straight areas of dir abr ret.			
?Borer			MBA>EIA	
	Lrg thick ang nat, 1 triang sec pointed corner trimmed to a narrower thick blunt point by semi-abr uneven ret.			

?Utilised		*Period*	*Preference*	*Re-using*
Flake fragment				
	Lrg broad medial/dist frag from a lrg broad triang sec fl. Dist end truncated by dir scars, 1 cortxd lat, other lat abr chips along length.			
(6309) [6304]			**5 lithics**	**121 g**
Context:				
Pottery:				
Notes:	Nothing quality. Some simply worked tools.			
Summary:	**Little specific data. A couple, perhaps the majority, could be MBA>EMIA+. Relationships unclear given the geology.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	V sm, chips.			
Flake fragment				
	Sm, chips, prx brk.			
Retouched				
Concave side scraper		?BA>	??MBA>EIA	
	Med sized thick triang sec fl, 1 broad concave lat shows dir scarring/ret/u-w.			
?Hollow scraper			?MBA>EMIA+	
	Lrgish thick nat with a couple of sm shallow invasive fl scar removals creating a concave area on the 1 thin edge and the edge steepened with a little abr ret.			
Convex side scraper				
	V sm, 1 lat steep with cortx, other lat shows inv abr ret continuing around prx shouldr.			
(6310) [6304]			**15 lithics**	**327 g**
Context:				
Pottery:				
Notes:	2 potential <EBA pieces, . Several simple tools, including a piercer, MBA>EMIA+.			
Summary:	**Possible N>EBA and MBA>EMIA+ elements, former residual if so, relationship of the latter to the context unclear, though given their quantity there is some potential for them to be contemporary. No relationships guaranteed however, given the geology.**			
Waste		*Period*	*Preference*	*Re-using*
Flake - ?platform rejuvenation flake*			*??<EBA	
	Med sized, 1 thick lat with relict core edge. *<EBA if intentional. .			
2 flakes				
Flake				
	Sm, chips.			
Flake fragment				
	Dist, brks.			
Flake fragment				
	Thick SQ prim, dist brk, chips.			
?Core				
	Lrgish thick ang chunk, 1 brk and 1 BL sized removal scar (accidental?).			
Retouched				
Misc. ret. flake		?M>EBA	?N>EBA	
	Med sized, decent fl, dist brk, 1 lat irreg with cortx, other lat sm area dir abr ret and many brks. .			
Hollow scraper			MBA>EMIA+	
	Lrg nat, slightly fl-like, 1 inv concave end NEEDS WASH. 1 sm dir hollow of chippy abr ret.			
?Retouched				
?Notch/end scraper			MBA>EMIA+	
	Thick fl, dist end shows inv shallow concave semi-abr single notch scar and chips.			
?Piercer			?MBA>EMIA+	
	Sm thick shatter, 1 pointed end shows some ?ret scarring leading to point.			
Utilised				
Flake – hollow scraper (*RU*)			MBA>EMIA+	
	Sm, concave area 1 lat shows unpat abras.			
Flake – knife				
	Sm, 1 thin lat with abras, abr chips blunt dist end.			

Flake – knife			
?Utilised			
Flake – ?knife			
(6405) [6404]		**2 lithics**	**28 g**
Context:			
Pottery:			
Notes:			
Summary:	**Little specific data and relationship to context unclear.**		
Waste	*Period*	*Preference*	*Re-using*
Flake			
Sm, thin, chips and brks.			
Utilised			
Flake – naturally backed knife			
(6407) [640?6]		**9 lithics**	**51 g**
Context:			
Pottery:			
Notes:	1 medium sized flake, rest small sized flakes and several fragments, plus some natural. The medium sized flake is a thick tertiary piece with a well defined blunt piercer point, ?<EBA/??N>EBA. Also notable are the proximal fragments from 2 small flakes, 1 at least potentially from a narrow blade, these truncated by (intentional?) snap breaks that remove this platform end of the flakes, the possible blade. Both of these show small snapping/chipping scars that lead to the single flake-breaking snap. While not certainly examples of retouched M microburins, they have potentially been created by employing the basis of the technique; potentially broadly M>EN.		
Summary:	**Possible M>EN, <EBA and MBA>EMIA+ elements, the relationship of the latter to the context unclear, given the geology.**		
Waste	*Period*	*Preference*	*Re-using*
Flake fragment			
Sm, dist.			
2 flake fragments			
Sm, medial.			
Retouched			
Piercer	?<EBA	??N>EBA	
Med sized tert, thick, triang sec, scars and chips. 2 dir ret edges on part of plat and 1 upper lat converge to isolate a robust flat tipped point. Uneven concave dist end some dir semi-abr ret.			
?Denticulate			
Sm thin L fl, 1 lat shopws dir abr ret forming dentic-like edge oppos steeper other lat.			
?Retouched			
?Notch on natural		*MBA>EMIA+	
Sm fl-like nat, 1 sm notch with abraded edge. *If so.			
Retouched/utilised			
Side ?+hollow scraper ?on natural		MBA>EMIA+	
Sm fl-like ?nat/brkn fl, thick triang sec, 1 uncortxd lat showing scars and abras,1 concave (horned) end with some minor scarring. .			
?Utilised/waste			
Flake fragment		M>EN	
V sm thin prx frag, looks decent, poss from a narrow B, sm snap brks 1 lat, 1 brk at corner of the medial snap brk.			
Flake fragment		?M>EN	
Sm, thin prx frag, 1 lower lat shows in-cutting obliq sm snap brks, other lower lat shows an obliq single snap brk, both meeting. ?Purposeful truncation of flake almost in microburin style?			

(6409) [6408]			**3 lithics**	**46 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data. 1 possibly MBA>EMIA+, relationships unclear due to geology.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Thick, steep lats and dist, chips.			
Retouched/utilised				
End scraper (*RU*)			MBA>EMIA+	
	Sm, some post pat chips, narrow dist end shows some dir scarring poss truncating pat. NEEDS WASH.			
Utilised				
Naturally backed knife				
(6705) [6704]			**1 lithic**	**10 g**
Context:				
Pottery:				
Notes:				
Summary:				
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Sm, prim, chips,			
(7105) [7104]			**5 lithics**	**25 g**
Context:				
Pottery:				
Notes:	4 small flakes with minimal or no cortex, 2 reasonable looking. 1 small thick retouched natural, likely MBA>EIA.			
Summary:	**1 more likely MBA>EIA, at least 2 others could be earlier, but relationships unclear.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Sm, ?decent, chips.			
Flake				
	Sm, chips.			
Retouched				
Scraper on natural			MBA>EIA	
	Sm thick, thick 'lats', 1 'lat' 'dir' ret along length forming uneven edge.			
Misc. ret. flake				
	Sm, minimal ret.			
Utilised				
Flake – knife				
	Sm, 2 dors ridges, ?decent.			
(7107) [7106]			**2 lithics**	**16 g**
Context:				
Pottery:				
Notes:	Thinnish long flakes, 1 with a post-patina chip.			
Summary:	**Little specific data, relationship to context unclear.**			
?Utilised		*Period*	*Preference*	*Re-using*
Flake – naturally backed knife				
	Thin, chips and brks, post pat chip.			
Flake – knife				

(7205) [7204]			**2 lithics**	**17 g**
Context:				
Pottery:				
Notes:				
Summary:				
Waste		*Period*	*Preference*	*Re-using*
Flake		?M>EBA		
	Sm S ?PP.			
Retouched				
Misc. ret. flake				

(8602) Tr 86			**3 lithics**	**60 g**
Context:				
Pottery:				
Notes:				
Summary:	**1 likely MBA>EIA, one or both of the others could, but need not, relate. No associations guaranteed and relationships to each other and the context unclear.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Sm, SQ, chips and brks.			
Retouched				
Scraper on natural		MBA>EMIA+	MBA>EIA	
	Med sized thick ang nat, short length dir abr ret on thick edge. .			
?Utilised				
Flake				
	Sm, chips.			

(9105) [9104]			**4 lithics**	**9 g**
Context:				
Pottery:				
Notes:	Small flakes and fragments.			
Summary:	**Little specific data, most, perhaps all, potentially residual.**			
Waste		*Period*	*Preference*	*Re-using*
2 flakes				
	Sm, chips.			
Flake fragment.				
Retouched				
Misc. ret. flake fragment				

(9106) [9104]			**15* lithics**	**566* g**
Context:				
Pottery:				
Notes:	Small flakes and fragments and larger shattered chunks. Only 1 small flake appears potentially decent. Rest generally a poor looking collection. ***Also +*** 1 small belemnite fossil (7 g) with a small flake scar (possibly natural) and chips at the tip, possibly utilised as a piercer, but suspect and not included below at this time.			
Summary:	**Little specific data. A couple and potentially the majority could well be BA>/MBA>EMIA+. 1 broken residual piece might, but need not, date <EBA. This could well be a mostly related group of MBA>EMIA+ date, though no associations are guaranteed. Consider the nature of the context and their distribution, if possible.**			
Waste		*Period*	*Preference*	*Re-using*
?Single platform flake core			?MBA>EMIA+	
	Lrg nodule with river-gravel type patina, couple medium sized S and SQ poss fl removals. .			
Flake				
	Sm, thinnish, appears decent, edges much brkn and chipped, residual.			
Flake				

	Sm, chips.			
Flake				
	Sm, dist brk.			
Shatter				
	Ang, chips.			
?Core shatter				
	Lrg ang chunk, several facets nat, others ?struck. .			
?Core shatter				
	Thick nat looking nodule with poss flake removal scar.			
?Shatter				
	Sm, nat dors and vent surfaces, 1 broken end some poss fl scar remnants.			
?Flake				
	Long triang sec.			
?Flake/natural				
	Sm, chipped. .			
Retouched				
Hollow scraper ?on natural		?MBA>EMIA+	?MBA>EIA	
	?Fl like nat or poss a fl, steepest lat shows a dir abr ret hollow.			
Scraper			MBA>EMIA+	
	Med sized thick ang nat, 1 thinnish edge sm area ret.			
Misc. ret. naturally backed flake				
	L Prim, Sm area likely ret 1 lower lat, rest much brkn.			
Utilised				
Shatter – scraper				
	Sm thick ang, 1 steep lat with scarring.			
?Retouched/utilised				
?Shatter – scraper			**MBA>EMIA+	
	Sm ang piece, mostly nat, 1 ?fl scar, 1 of these edges shows ?ret + abras. **If so.			
(9107) [9104]			**1 lithic**	**5 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data, relationship to context unclear, but potentially residual.**			
Utilised		*Period*	*Preference*	*Re-using*
Flake – knife				
(9108) T91			**5 lithics**	**55 g**
Context:				
Pottery:				
Notes:	1 piercer and 1 knife, much retouched but simply so, former notably on the long lateral of a long flake. Both perhaps more likely MBA>EIA, but could be earlier. Review. .			
Summary:	**Little specific data and relationships unclear. Perhaps review.**			
Waste		*Period*	*Preference*	*Re-using*
2 flakes				
Flake				
	Chips.			
Retouched				
?Piercer		<EIA	??MBA>EIA	
	Med sized thick triang piece, ret truncated ?prx end, 1 lat shows dir mostly abr ret either side of and isolating a triangular shaped projecting short point.			
Knife		<EIA	??MBA>EIA	
	1 uneven lat shows dir semi-abr irreg chippy ret along length. .			

(9205) [9204]			**7 lithics**	**28 g**
Context:				
Pottery:				
Notes:	Small flakes, most broken. Notably 1 broken likely bladelet, M>EN.			
Summary:	**Little specific data. 1 M>EN, this and at least 2 others potentially residual, 1 other possibly MBA>EIA+ with relationship to context unclear, but perhaps also residual.**			
Waste		*Period*	*Preference*	*Re-using*
Flake fragment				
	Sm frag, prx dist and lat brks and chips.			
Retouched				
?Side scraper			?MBA>EIA+	
	Sm, 1 steep lat dir abr ret, 1 shallow anlg lat dir abr ret, dist end uneven concave of inv ret/chipping.			
Misc. ret. + util flake				
	Sm prx frag, ?decent, chips, brks, ret and abras, not cert microburin.			
?Point				
	Sm, dist end shows short deep in-cut of dir abr ret 1 along 1 half, other dst corner projecting into a broad point.			
Utilised				
Flake – knife		M>BK	M>EN	
	Sm quality prx frag of likely B, dist snap brks, PP, some fine abras and chips.			
?Retouched				
Flake				
	Sm, 1 lat brkn with post-pat chip, other shoulder couple shallow dir scars.			
Flake fragment				
	Thick, couple inv ?ret scars by dist brk.			
(9305) [9304]			**11 lithics**	**350 g**
Context:				
Pottery:				
Notes:	1 small fairly decent looking broken flake, likely residual. Rest average/poor. WASH if in need of review.			
Summary:	**Little specific data. 1 perhaps less likely post MBA-LBA, 1 other, perhaps most, could be MBA>EMIA+. 1 might but need not pre-date this. Relationships unclear, due to geology.**			
Waste		*Period*	*Preference*	*Re-using*
Multiplatform flake core			??<MBA-LBA	
	Lrg thick nat, triang plan, 1 broad convx edge shows the removal of sm S fls from both sides (keeled), edge not obv heavily battered/used. 1 adj lat shows the removal of similar sm fls on 1 side only.			
Flake				
	Sm, thin, curving, looks decent, prx brk, chips, post Y pat chips.			
2 flakes				
Flake				
	Sm, chips.			
Flake				
	Sm, dist brks.			
?Flake/shatter				
Retouched				
Side scraper on natural			MBA>EMIA+	
	Med sized fl-like nat, 1 lower 'lat' sm area dir abr ret.			
Knife				
	1 upper thin lat some inv ret, rest of lower lat inv chips, other lat steep.			
Knife				
	Sm fl, sm area ret on thin lat.			
Utilised				
Flake – knife				

(9307) [9306]			**16 lithics**	**368 g**
Context:				
Pottery:				
Notes:	Small to medium sized flakes and thick angular chunks, generally a poor looking group overall, with nothing of quality. .			
Summary:	**Majority, if not all, probably BA>, some more likely MBA>EMIA+, with a couple of more significantly retouched examples <EIA. Relationships unclear, due to the geology. Consider the nature of the context and their horizons of recovery, if possible. Given quantity and consistency, there is the potential that this could be a broadly related group of MBA>EIA date and thus also with some potential to be context-contemporary. No relationships guaranteed, however.**			
Waste		*Period*	*Preference*	*Re-using*
?Single platform flake core			MBA>EMIA+	
	Med sized thick chunk, mostly unused, 1 sm area of a couple of flake removal scars.			
Multiplatform flake core				
	Sm-ish angular piece.			
?Core fragment/shatter				
	Sm, thick, some ?fl removal scars amongst many nat facets.			
Shatter				
	Sm thick ang piece.			
Flake				
	Sm, thick, chips.			
Flake fragment				
	Sm, dist, inv chips.			
Flake fragment				
	Sm, lat brk.			
?Flake				
	Sm, irreg vent.			
Retouched				
Side scraper + knife		?BA>	MBA>EIA	
	Lrgish med sized fl, 1 longer lat shows dir abr ret forming slightly uneven edge. Other lat a short thin edge with dir abras.			
End scraper		?BA>	?MBA>EIA	
	Sm, thick, broad cortxd dist end shows uneven edge of dir abr chippy ret across width.			
?Hollow scraper/piercer				
	Med sized thick trianc sec L fl, 1 lower lat shows a lrg broad deep concave edge with some dir ret and scars, this edge leading to a hinged pointed tip with scars on tip.			
?Retouched				
Hollow scraper			*MBA>EMIA+	
	Sm ?fl frag, 1 lat steep, other thin with sm hollow of dir abr scars. *If so.			
?Side scraper			?MBA>EMIA+	
	Sm, 1 uneven lat with inv abr ?ret, chips, brk. .			
Utilised				
Side scraper			?MBA>EMIA+	
	Med sized thick fl, 1 lat steep with cortx, other lat steep with dir abras on edge.			
?Utilised				
Flake – knife + hollow scraper				
	Sm, 1 lat thin with some abras, other with a concave brk showing some abras.			
Flake – naturally backed knife				
	Sm, 1 thin uncortxd lat shows chips and snap brks.			
(9405) [9404]			**2 lithics**	**48 g**
Context:				
Pottery:				
Notes:	1 medium sized simply retouched flake. .			
Summary:	**Little specific data. 1 possibly MBA>EIA, relationships unclear.**			
Waste		*Period*	*Preference*	*Re-using*
Flake fragment				

Retouched				
End+side scraper		?BA>	?MBA>EIA	
	Med sized thick triang sec L fl, lats and ang convx dist show intermittent various dir ret, some inv ret 1 lat. .			
[9602]			**4 lithics**	**24 g**
Context:				
Pottery:				
Notes:	All small, mostly broken.			
Summary:	**Little specific data. 1 possible MBA>EMIA+ if worked, most of the others broken and potentially residual; all might be.**			
Waste		*Period*	*Preference*	*Re-using*
?Flake/shatter				
	.			
?Retouched				
?Notch on natural		*MBA>EMIA+		
	Sm thickish fl-like nat, 1 notch with poss edge chipping. *If so.			
?Utilised				
Flake fragment – hollow scraper				
	Dist, 1 thin concave lat with some inv scarring.			
Flake fragment				
	Dist, chips, sm area ?ret/util.			
Totals			**131 lithics**	**2623 g**

1.6. Contexts with notable contents

Context	*Quantity*	*Description*	*Relationship to context*
[5806]	1	Strong chalk-soil patinated ?flake, notable if so.	Possibly re-used.
(6407) [640?6]	1/2	Possible microburin style flake fragments, M>EN.	Residual.
(9205) [9204]	1	Fragment of bladelet, M>EN, rare in assemblage.	Presumably residual.

1.7. Comments

Raw materials

All this material was made using flint. Prominent amongst the remnant cortexes were examples of dirty looking rough buff types. A few examples of thin dark grey-black or greeny grey-black cortxes were noted, along with some smooth strong white cortexes. Much of the raw material was of average quality at best, though some better quality flint was also present, the matrices of these often of mixed black and grey flint, with few cherty inclusions or flaws.

It might be presumed that there was little if any flint raw material available in the brickearth type deposits that formed the prime underlying geology on this site and perhaps also in the immediate vicinity too. The understandable accidental recovery of some natural flint alongside the worked pieces does offer a view of the raw material that was available locally and a sample of these have been retained for future comparative study. The nature of the raw material that was available in the geological deposits present on site and locally is currently unknown however and, as part of any future work at this site, it would be useful if samples of the raw material that does occur in the various geologies and any ancient subsoils present could be obtained and submitted alongside any further flintwork that is recovered. Given the likely Later Prehistoric date of the majority of the flintwork present, it would be presumed that the raw materials that were used during that time had been gathered as close to their place of use as was possible. The Earlier Prehistoric flintwork may well have employed better quality raw material that was either carefully selected from the resource available locally, or obtained from slightly further afield, perhaps in areas of chalk geology.

2. Catalogue of burnt flint 'potboilers'

Context	*Quantity*	*Weight*	*Notes*	*Pottery present*
(9106) [9104]	13	44	Small spalls/splinters, some likely burnt, others potentially burnt, could be spalls from larger 'potboiler' nodules.	
(9107) [9104]	7	14	Small spalls/splinters, some likely burnt, others potentially burnt, could be spalls from larger 'potboiler' nodules.	
(9107) [9104]	27	81	Small spalls/splinters, some likely burnt, others potentially burnt, could be spalls from larger 'potboiler' nodules.	
Totals	**47**	**139 g**		

This material was weighed and reviewed unwashed and discarded.

3. Catalogue of slag

Context	*Quantity*	*Weight*	*Notes*	*Pottery present*
(6311) Road	1	48	Small nodule of iron slag.	
(6410)	1	158	Medium sized tabular nodule, ?iron slag.	
(9105) [9104]	7	57	Small irregular nodules and 1 tabular piece of slag.	
(9105) [9105]	1	259	Very dirty irregular surfaced tabular piece. Listed as 'Slag'.	
(9106) [9104]	5	99	Small irregular nodules.	
Totals	**15**	**621 g**		

This material was weighed and reviewed uncleaned. Needs cleaning.

A brief review catalogue of the worked lithics, plus a catalogue of burnt flint 'potboilers', recovered during an archaeological evaluation at Wises Lane (Site C), Sittingbourne, Kent

Site Code: WLS2C-EV-23

Analyst: Paul Hart
Last updated: 01.08.2023

For: Swale and Thames Archaeology Survey Company

Contents

1. Quantification and brief review of the worked lithics

1.1. Methodology

The information presented was based upon an initial brief review of the worked lithics. The artefacts were examined using a hand lens of x10 magnification and each was considered on its own merits. Details about the nature of the context and any pottery recovered, which informed the interpretation but not the dating of the individual pieces, were noted where known. No cataloguing of the physical traits of the artefacts was conducted at this stage. No overall summary and period-based listing and review is presented at this time.

The brief review format was adopted due to the need for rapid feed-back to aid the swift production of a site report. The material was unwashed, but only slightly dirty. It was not dirty enough that any significant detail was likely to have remained hidden. Due to the brief nature of this review, it would be recommended in any subsequent assessment report which may be written, that it would be ideal if all of the worked lithics were re-catalogued and considered more fully (including recording a selection of the prime physical traits, for preservation by record). For practical necessity however, such work could be focussed upon the more specifically diagnostic elements and any pieces that can be dated by a reliable contemporary relationship with pottery or associated contexts which are tightly dated.

All dates given throughout are *circa*.

1.2. The underlying geology and its implications

This is considered to primarily comprise deposits of 'brickearth' type soils (ie. clays, silts, sands, or combinations of such), with occasional areas of gravels (Peter Cichy *pers. comm.*). Brickearth geology typically does not produce those patinas that are frequently helpful in the identification of residual worked lithics that are otherwise undiagnostic of being so on their own merits. As such, it is considered that none of the worked lithics on this site can be guaranteed to be contemporary with their deposits or horizons on their own merits. The absence of strong obvious patinas also hinders the easy identification of those worked lithics that were re-used at a later date following their original creation and discard.

1.3. Period Codes employed

Period	*Code*	*Date (circa)*			
Mesolithic	M	9200	-	4000	BC
Neolithic	N	4000	-	2300	BC
First/Early/Earlier Neolithic	EN	4000	-	3350/3000	BC
Beaker Period	BK	2450	-	1750	BC
Bronze Age	BA	2100	-	1000/900	BC
Early Bronze Age	EBA	2100	-	1550	BC
Middle Bronze Age	MBA	1550	-	1350	BC
Mid to Late Bronze Age	MBA-LBA	1350	-	1150	BC
Earliest Iron Age	EIA	1000/900	-	600	BC
Early to Mid Iron Age	EMIA	600	-	350	BC

1.4. Abbreviations used in 1.5

Dating

>	:	To/or later
<	:	No later than
/	:	Or/or indicting a preference within a preceding broader range
?	:	Possibly
??	:	Just might be/very slight preference for

Key to abbreviations for notes

A	:	Advanced (patina).	nat	:	Natural.
abr	:	Abrupt (retouch).	nr	:	Near.
adj	:	Adjacent.	obv	:	Obviously.
adv	:	Advanced (patina).	oppos	:	Opposite.
ang	:	Angular.	P	;	Primary (flake).
B	:	Blade (flake) or Blue (patina).	PP	:	Platform preparation (abrasion).
back	:	Backed.	pat	:	Patina.
bifac	:	Bifacial (retouch).	plat	:	Platform.
BL	:	Bladelet (flake).	poss	:	Possible.
brk	:	Break.	prob	:	Probably.
BW	:	Blue-white (patina).	prx	:	Proximal (flake).
convx	:	Convex.	resid	:	Residual.
cortx	:	Cortex.	ret	:	Retouch.
dentic	:	Denticulate (retouch).	RM	:	Raw material.
dir	:	Direct (retouch).	RU	:	Re-use.
dist	:	Distal (flake).	S	:	Sort, Secondary (flake) or Strong (patina).
dors	:	Dorsal (flake).	sec	:	Section.
E	:	Early (patina).	SH	:	Short (flake).
eg	:	Example.	signif	:	Significant/ly.
exp	:	Expedient.	sm	:	Small.
fl	:	Flake.	SQ	:	Squat (flake).
frag	:	Fragment.	subseq	:	Subsequent.
G	:	Grey (patina).	term	:	Termination (flake).
incip	:	Incipient (cones of percussion).	T	:	Tertiary (flake).
inc	:	Including.	triang	:	Triangular.
inv	:	Inverse (retouch).	trunc	:	Truncating/truncated.
irreg	:	Irregular.	u-w	:	Use-wear.
L	:	Long (flake).	util	:	Utilised.
lat	:	Lateral (flake).	Unpat	:	Unpatinated.
lrg	:	Large.	V/v	:	Very.
M	:	Moderate (patina).	vent	:	Ventral (flake).
marg	:	Marginal (retouch).	W	:	White (patina).
med	:	Medium (size).	Y	:	Yellowish (patina).
mod	:	Moderate.			

NB. In the notes, the character of the retouch can be considered as small sized and marginal unless stated otherwise.

1.5. Catalogue: Quantification and brief review of the worked lithics

Context			**Total lithics**	**Total weight**
Context:	Information on the nature of the context if known.			
Pottery:	Date of any pottery present or the ceramic date of the context if known.			
Notes:	Elements and trends of initial interest.			
Summary:	**Dates and relationships to context.**			
Patinas:	Mostly unpatinated or yellowy sheen, relationships unclear given the brickearth geology.			
Class/Type	*Notes/Details*	*Period*	*Preference*	*Re-using*
TP.46A 0.76 m			**0/1 lithics**	**0/6 g**
Context:				
Pottery:				
Notes:	Broken 'distal'-like flake-like fragment potentially natural spall/shatter.			
Summary:	**Probably natural, but retained just in case this context and horizon is of importance.**			
Waste		*Period*	*Preference*	*Re-using*
?Natural				
TP.46A Depth 1.1-1.4 m			**6 lithics**	**124 g**
Context:				
Pottery:				
Notes:	3 thick medium sized flakes, simply worked/used, rest small, nothing of quality.			
Summary:	**Majority potentially MBA>EMIA+, relationships unclear.**			
Waste		*Period*	*Preference*	*Re-using*
Flake fragment				
	V sm, chips.			
?Shatter				
Retouched				
Naturally backed knife		?BA>	??MBA>EMIA+	
	Med sized, 1 thick cortxd lat, other lat thin with bifac chips and inv ?ret.			
?Knife + end scraper		?BA>	??MBA>EMIA+	
	Med sized, thick, steep dist shows some dir abr ret, 1 thin lat some inv ?scarring. 1 thin dist corner some inv shallow ret. .			
Misc. ret. flake				
	Sm, triang sec, 1 upper lat sm area inv ret.			
?Utilised				
Flake – side scraper			?MBA>EMIA+	
	Med sized, thick, 1 steep lat dir ?scars, chips,			
TP.46A Depth: -1.45 m			**1 lithic**	**11 g**
Context:				
Pottery:				
Notes:	Decent blade. Some chipping could potentially be post original discard and ?re-use, unclear.			
Summary:	**Blade could date widely, M>BK, but slight preference for N>BK. Unclear if later re-use has occurred, or not.**			
Utilised		*Period*	*Preference*	*Re-using*
Flake – knife		M>BK	??N>BK	
	Decent narrow B, thickish, ?PP NEEDS WASH, some fine abras, 1 sm area stronger scarring poss post discard/?RU.			
TP 47 A			**1 lithic**	**2 g**
Context:				
Pottery:				
Notes:	Small chipped flake.			
Summary:	**Little specific data.**			
Waste		*Period*	*Preference*	*Re-using*

Flake			
TP. 47 B		**6 lithics**	**106 g**
Context:			
Pottery:			
Notes:			
Summary:	**3 more likely MBA>EMIA+ and most, perhaps all, of the others could relate. Given the quantity and consistency, would have some potential to be contemporary with their context, but no associations guaranteed, given the geology.**		
Waste	*Period*	*Preference*	*Re-using*
?Core chunk/shatter			
	Sm, thick, nat facets and couple partial fl scar removals.		
Flake fragment			
	Prx, thick, brks.		
Retouched			
Hollow scraper on natural		MBA>EMIA+	
	Sm, W pat nat facets, deep hollow possibly caused by notch with semi-abr chippy ret of 1 edge.		
End scraper		MBA>EMIA+	
	Sm, convx dist shows some dir ret and abras.		
?Side scraper		MBA>EMIA+	
	Sm-med SQ fl dist cortex, 1 uneven lat some dir and inv abr ret and brks, other lat some dir abras? NEEDS WASH.		
?Utilised			
Flake			
	V sm, chips, 1 inv chipped notch/hollow.		
(2409) [2408]		**1 lithic**	**4 g**
Context:			
Pottery:			
Notes:			
Summary:	**Little specific data; potentially residual.**		
Waste	*Period*	*Preference*	*Re-using*
Flake fragment			
	Dist brks.		
(2411) [2410]		**6 lithics**	**26 g**
Context:			
Pottery:			
Notes:	All small or very small sized flakes and fragments.		
Summary:	**Little specific data. 1 perhaps MBA>EMIA+, relationships unclear.**		
Waste	*Period*	*Preference*	*Re-using*
Flake			
	Chips and brks.		
Flake fragment			
	V sm, chips and brks.		
?Retouched			
Misc. ?ret. flake			
	V sm, dist end inv abr apparent ret, but too sm to hold.		
Utilised			
Flake – knife		?MBA>EMIA+	
	Sm.		
Flake – end scraper + knife			
?Utilised			
Flake			
	V sm, chips.		

(2508) [2506]			**2 lithics**	**31 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data, 1 at least potentially residual and both might be.**			
Waste		*Period*	*Preference*	*Re-using*
2 flakes				
	1 P, 1 S with post-discard chips.			
(2509)			**2 lithics**	**8 g**
Context:				
Pottery:				
Notes:	Small.			
Summary:	**Little specific data. Slight preference for MBA>EMIA+ for both. Relationships to each other and the context unclear.**			
Utilised		*Period*	*Preference*	*Re-using*
Side scraper		?BA>	?MBA>EMIA+	
?Utilised				
Flake – hollow scraper		?BA>	??MBA>EMIA+	
(3207) [3206]			**3 lithics**	**4 g**
Context:				
Pottery:				
Notes:	1 small primary and 2 tiny flakes with minor chipping.			
Summary:	**Little specific data.**			
Waste		*Period*	*Preference*	*Re-using*
3 Flakes				
(4601)			**3 lithics**	**158 g**
Context:				
Pottery:				
Notes:	Notably 1 crude looking broken potential 'Y'-shaped core tool, broadly N>EIA, perhaps most likely <EBA and possibly EN if a formal 'Y' tool (see Butler 2005, 133-134), otherwise a hollow or even horned scraper, which could date later, though the Later Prehistoric examples of the latter two are perhaps most typically made on flakes (Buter 2005, 183-185) or more flake-like pieces of natural. 1 other crude looking scraper and a small piece of natural utilised as a hollow scraper, both MBA>EMIA+, former more likely <EIA.			
Summary:	**N>EIA/?EN, MBA>EIA and MBA>EMIA+ elements, the former residual if EN. Relationships unclear.**			
Retouched		*Period*	*Preference*	*Re-using*
?'Y'-shaped core tool/hollow/horned scraper		N>EIA	?<EBA/??EN	
	Lrg thick trinag sec nat, several fl scar removals. 1 lat shows inv semi-abrt bold ret, other lat some bifac scars and chips. 1 narrow end trimmed to a steep blunt vertical face by dir ret (?for use/?butt). Other end a broad uneven obliq angld edge with slight concave hollow of dir fairly abr ret, just possibly a broken 'Y' shaped tool with 1 projection broken-off.			
Double side+end scraper			?MBA>EIA	
	Med sized thick S fl, much inv chipping and 1 lat with dir semi-abr ret, all edges irreg. Crude.			
Utilised				
Natural – hollow scraper			MBA>EMIA+	
	Sm nat with abrupt concave edge showing abras.			

(4602)			**9 lithics**	**56 g**
Context:				
Pottery:				
Notes:	Mostly small flakes and fragments, 3 more medium sized, many with chips and breaks, these potentially residual. Nothing of obvious quality, but very little cortex present. 1 small flake possibly accidentally struck/broken from a bifacially flaked piece, M>EBA if so. Slight suspicion that 1 triangular shaped miscellaneous retouched flake might also be Earlier Prehistoric. 2 piercers, reasonable but fairly simple and could date widely. Material related or variously residual? .			
Summary:	**A couple of elements could be <EBA/broadly M>EBA, but whether all/most or any of the others are related is unclear. No relationships are guaranteed given the geology and a few other pieces shows chips and breaks and have the potential to be residual. Consider the nature of the context and their horizons of recovery, if possible.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Thin, chips and brks.			
?Shatter/?natural				
Retouched				
Misc. ret. piece		?<EBA	M>EBA	
	Sm, a fl poss from a bifacially flaked piece.			
Misc. ret flake			??M>EBA	
	Sm, thin, triang plan, 1 lat steep with chips, other thin with abras, pointed dist tip some ?ret scars and chips. Plat scars, ?PP.			
Piercer				
	Thin fl, thin prx plat cortxd, dist end shows 2 obliq angld brks which meet at a sharp tip, both leading edges trimmed by some dir ret (1 lat semi-abr, 1 shallow on abrupt edge) and a few inv shallow semi-abr ret scars at very tip.			
Piercer				
	Sm fl, dir abr likely ret truncates dist end to 2 shallow angled obliq edges (1 straight, 1 concave) that meet to form small pointed tip. .			
Misc. ret. flake fragment				
	Med sized fl frag.			
Misc. ret. flake				
	Possibly partly back-blunted, many chips and brks.			
?Retouched/utilised				
Flake – end scraper				
	V sm, plat brk, hinged dist end some dir ?ret scars			
(4605) [4604]			**1 lithic**	**299 g**
Context:				
Pottery:				
Notes:	Somewhat simple/crudely executed (but perfectly functional) pick/axe, its final form having a tapering small narrow tranchet flaked end appearing little used. .			
Summary:	**M pick/axe, presumably residual, particularly as sole recovery in this context. Note the presence of an opposed platform small blade core in (4902), which is residual.**			
Retouched		*Period*	*Preference*	*Re-using*
Tranchet ?pick/axe		M		
	Lrg thick lenticular piece with bold bifacial flaking along long sides, 1 end mostly cortex, other end tapers to a narrow flat thin tip formed by a tranchet removal, only minor chipping on this (final) edge.			

(4802) TP A TR 48		**4 lithics**	**115 g**
Context:			
Pottery:			
Notes:	Notable is 1 cylindrical largely single platform flake/blade core, more typically M>EN, part-used and perhaps more likely EN, but consider if there is any precedence for such in the vicinity, considering that there is evidence for the M in this site assemblage. .		
Summary:	**1 potential M>EN/?EN, slight preference for EN but could be earlier, relationship to the rest and the context unclear. The flints could, but need not, be related. Consider the nature of the context and the distribution, if possible. If M likely residual and given the low quantity is best considered residual for now.**		
Waste		*Period*	*Preference*	*Re-using*
?Single platform flake and blade core		M>BK	M>EN/?EN	
	Largely single plat cylindrical nodule, worked part way round, L and sm B fl removal scars. WASH.			
Retouched/utilised				
Misc. ?ret. flake				
	Sm, thin dist shows inv shallow semi-invas scars and chips.			
?Utilised				
Flake/shatter – knife				
	Thick tert.			
Flake fragment – knife				
	Dist.			
(4902) T.49 A		**1 lithic**	**16 g**
Context:			
Pottery:			
Notes:	.		
Summary:	**Likely M>EBA, relationship to context unclear, but potentially/presumably residual.**		
Retouched		*Period*	*Preference*	*Re-using*
Misc. ret. flake – ?ret. backed/?side scraper		<EBA	M>EBA	
	Fairly decent looking black flint, T fl, 1 lat prob ret to a steep convx edge, other lat a broad obliq brk with some scars, both edges meeting and truncating dist end.			
(4902) T.49 B		**12 lithics**	**589 g**
Context:			
Pottery:			
Notes:	Notable is 1 small-medium sized opposed platform blade core, M>EN/more likely M. Other material more likely BA> and MBA>EMIA+, some <EIA. Some material .		
Summary:	**1 likely M, residual, with several likely BA>, some of these more likely MBA>EIA and MBA>EMIA+. The Later Prehistoric could, but need not, be associated with each other and their context, given the quantity and similarities, though no associations are guaranteed, given the underlying geology.**		
Waste		*Period*	*Preference*	*Re-using*
Opposed platform blade core		M>EN	M	
	Med sized, worked all way round. .			
?Flake core		?BA>	?MBA>EMIA+	
	Lrg thick lump, part used. .			
Flake				
	Prim.			
Flake				
	Sm, chips.			
Flake				
	Sm, chips, prx brk.			
Flake				
	Sm, chips. .			
Flake				
	Sm, chips.			

Flake fragment				
	Prim prx, chips.			
Flake fragment				
	Sm, lat brk, chips.			
Retouched				
Double side scraper		BA>	MBA>EIA	
	Med sized prim, 1 lower lat broad straightish edge inv abr ret, oppos dist corner straight edge dir abr and semi-abr ret, dir ?notch between. .			
Side scraper		?BA>	?MBA>EIA	
	Thick, 1 lat dir abr ret forms adj short straight and shallow hollow edges.			
Hollow scraper on natural/shatter			MBA>EMIA+	
	Sm, broad concave edge of abr chippy ret. .			
?Utilised				
Flake – knife			*MBA>EMIA+	
	Sm, chips on thin broad dist. *If so.			
(5302) A			**3 lithics**	**7 g**
Context:				
Pottery:				
Notes:	All small tools. .			
Summary:	**All more likely BA> and probably MBA>EMIA+. Given consistency and quantity, they have some potential to be related to each and also their context, though no relationships are guaranteed. Consider the nature of the context and their distribution, if possible.**			
Retouched		*Period*	*Preference*	*Re-using*
?End scraper		?BA>	?MBA>EMIA+	
	Sm fl, 1 dist corner shows inv semi-abr ret truncated by brk.			
End+side scraper		?BA>	?MBA>EMIA+	
	Sm P, 1 lower lat and short length of part of adj dist end shows dir abr ret forming right-angld straight edges.			
Hollow scraper			?MBA>EMIA+	
	Sm irreg fl frag, 1 lat shows hollow of inv semi-abr ret.			
(5302) B			**1 lithic**	**25 g**
Context:				
Pottery:				
Notes:	.			
Summary:	**Likely MBA>EMIA+, relationship unclear, but could be residual as sole recovery.**			
Retouched		*Period*	*Preference*	*Re-using*
Hollow scraper on natural		MBA>EMIA+	?MBA>EIA	
	Fl-like nat, 1 steep lat, other thin with broad notched hollow with some dir ret/scars.			
(5306) [5304]			**3 lithics**	**26 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data.**			
Waste		*Period*	*Preference*	*Re-using*
?Flake/natural				
	Sm.			
?Flake/shatter				
	Sm, chips.			
Retouched				
?Side scraper				
	Chips all margs, some likely dir abr and semi-abr ret 1 lat with brk.			

(5307) [5304]			**1 lithic**	**4 g**
Context:				
Pottery:				
Notes:				
Summary:	**Little specific data. Possibly BA>EIA, relationship unclear.**			
Retouched		*Period*	*Preference*	*Re-using*
Knife			?BA>EIA	
	Sm, thin, 1 lower lat inv semi-abr ret.			
(5309) [5308]			**4 lithics**	**10 g**
Context:				
Pottery:				
Notes:	All small.			
Summary:	**2 at least likely MBA>EIA/EMIA+, 1 other tiny broken flake could predate and would be residual if so. Relationship of the others to each other and their context unclear, due to the geology.**			
Waste		*Period*	*Preference*	*Re-using*
Flake				
	Sm, chips, 1 ?modern chip.			
Retouched				
Scraper on natural			MBA>EIA	
	Sm fl-like nat, short straight length 'dir' semi-abr ret.			
Scraper on natural			MBA>EMIA+	
	Sm fl-like nat, 1 short uneven straight length ret.			
Misc. ret. naturally backed flake				
	V sm BL-like fl frag, prx brk, 1 lower lat v short length dir semi-abr ret. .			
(6306) [6304]			**5 lithics**	**269 g**
Context:				
Pottery:				
Notes:	Medium to large sized thick crude looking pieces and natural, plus 1 better looking large broken flake which could, but need not, date earlier.			
Summary:	**Majority likely MBA>EIA and MBA>EMIA+. Given the quantity, could be related to each other and the context, though no associations are guaranteed, given the underlying geology.**			
Waste		*Period*	*Preference*	*Re-using*
?Core			?MBA>EMIA+	
	Lrg thick ang chunk, some /fl removal scars.			
Retouched				
Adjacent hollow and side scraper on natural			MBA>EIA	
	Med sized fl-like nat, 1 'lat' an uneven straight edge and adj hollow of semi-abr ret.			
End scraper			MBA>EMIA+	
	Thick fl, broad steep cortxd dist end 2 short straight areas of dir abr ret.			
?Borer			MBA>EIA	
	Lrg thick ang nat, 1 triang sec pointed corner trimmed to a narrower thick blunt point by semi-abr uneven ret.			
?Utilised				
Flake fragment				
	Lrg broad medial/dist frag from a lrg broad triang sec fl. Dist end truncated by dir scars, 1 cortxd lat, other lat abr chips along length.			
Totals*			**75/76 lithics**	**1890/1896 g**

*See TP.46A 0.76 m.

1.6. Contexts with notable contents

Context	*Quantity*	*Description*	*Relationship to context*
TP.46A 1.45 m	1	Blade, rare in assemblage, M>BK/?N>BK; re-used?	Unclear.
(4601)	1	'Y'-shaped core tool, N>EIA/?N>EBA/??EN.	Residual if N>EBA.
(4605) [4604]	1	Pick/axe (sole recovery in context), M.	Presumably residual.
(4802) TP A	1	Single platform flake/blade core, M>EN/?EN	Likely residual.
(4902) T.49 B	1	Opposed platform blade core, likely M.	Residual.

Notable that all these are occurring in similar numbered contexts and perhaps in relatively close proximity.

1.7. Comments

Raw materials

All this material was made using flint. Prominent amongst the remnant cortexes were examples of dirty looking rough buff types. A few examples of thin dark grey-black or greeny grey-black cortxes were noted, along with some smooth strong white cortexes. Much of the raw material was of average quality at best, though some better quality flint was also present, the matrices of these often of mixed black and grey flint, with few cherty inclusions or flaws.

It might be presumed that there was little if any flint raw material available in the brickearth type deposits that formed the prime underlying geology on this site and perhaps also in the immediate vicinity too. The understandable accidental recovery of some natural flint alongside the worked pieces does offer a view of the raw material that was available locally and a sample of these have been retained for future comparative study. The nature of the raw material that was available in the geological deposits present on site and locally is currently unknown however and, as part of any future work at this site, it would be useful if samples of the raw material that does occur in the various geologies and any ancient subsoils present could be obtained and submitted alongside any further flintwork that is recovered. Given the likely Later Prehistoric date of the majority of the flintwork present, it would be presumed that the raw materials that were used during that time had been gathered as close to their place of use as was possible. The Earlier Prehistoric flintwork may well have employed better quality raw material that was either carefully selected from the resource available locally, or obtained from slightly further afield, perhaps in areas of chalk geology.

2. Catalogue of burnt flint 'potboilers'

Context	*Quantity*	*Weight*	*Notes*	*Pottery present*
(2508) [2506]	5	92 g	2 small nodules and 3 small fragments, mostly fired patchy white.	
TP.46A 1.1-1.4 m	1	3	Small angular fragment.	
Totals	**6**	**95 g**		

This material was weighed and reviewed unwashed and then discarded.

3. Bibliography

Butler C. 2005. *Prehistoric Flintwork*. Tempus.

Appendix VI

Analysis of the iron working debris (by P. Cichy)

Introduction

An ironworking waste was discovered in Area 2A during the archaeological evaluation on Land west of Wises Lane, Sittingbourne. Collected material from Trenches 63, 64 and 91 (565g) derived from the exposed features and trackway surface and was subjected to visual, optical-microscopic and magnetic analysis, followed by the division of the assemblage into sub-categories based on the specific properties of the material.

The presence of *in-situ* iron-slag is always a reliable indicator of on-site or nearby industrial activity, including iron smithing, and provides a valuable source of information about the kind of ore used, the furnace type and the type of technology implemented during the iron-smelting process.

The chemical, geological and technological background

Obtaining the required metal from the raw ore comprises several stages of production, during which raw iron ore is roasted and processed into metallic iron in the form of spongy lumps, followed by primary smithing, which consolidates the bloom into more dense and solid iron billets. The most common source of iron ore in antiquity was ironstone, a ferruginous sedimentary rock formed either by chemical replacement of the elements or by the direct deposition of ferruginous sediments (the latter formed as a result of the precipitation of iron compounds from solution). The ironstone consists either of oxides such as hematite, limonite and magnetite, carbonates such as siderite or silicates such as chamosite, and occur in a variety of forms, such as siderite nodules, saprolite (laterite) and ooidal ironstone. These occur as veined or interbedded deposits or as nodules, along with chert within other deposits such as sandstone, mudstone or clays.

The extraction of ironstone during the Late Iron Age/ Early Roman Period was probably carried out in the local area for the most from sandstone quarries, where exposed layers of Ragstone and Bargatestone were interbedded with veined bands of mostly oolitic ironstones. Another extraction method was by excavation from oval or linear pits in clay deposits to retrieve interbedded ferruginous nodules. Following extraction, iron-bearing material was roasted and crushed, roasting being a metallurgical process in which gas-to-solid reactions at elevated temperature are achieved with the objective of purifying the metal components. The iron ore was placed in a suitable open fire pit and heated in the presence of air, causing micro-fractures in the ore and the removal of sulphur, moisture, carbon dioxide and arsenic. This process also exposed the ore to atmospheric oxygen, which is the main oxidizing agent for the reaction where ferrous oxide (*wüstite*) is oxidized to ferric oxide. In the case of carbonate or sulphide ores, the roasting process removes the unwanted carbon or sulphur, leaving an iron oxide that can be directly reduced inside a smelting furnace shaft.

During the roasting process it was of critical importance to roast the ore sufficiently to achieve an iron content of at least fifty-seven per cent, with the silica (SiO_2) content not exceeding 17.5 per cent. If the ore was not properly roasted and still contained too much silica the smelting process resulted in large quantities of slag being formed at the expense of the required metal; for example: if ore was inadequately roasted, resulting in fifty-five percent iron and twenty percent SiO_2, the yield of metallic iron would be nil. In other cases, where iron-rich ore was roasted to the required temperature, the result would be sixty-five per cent iron to 8.6 per cent SiO_2, and the final result of the smelting process (at least theoretically) would be over sixty-two percent iron within the ensuing bloom.

Following the roasting process, a smelting furnace, usually in the form of a chimney-like shaft with a basal chamber accessed by an opening, was charged with starter fuel, ignited and preheated to the desired temperature, then fed with a mixture of crushed roasted ore and charcoal.

During the main smelting process carbon monoxide was produced, mostly in the upper part of the furnace shaft. This was as a result of incomplete combustion because of the limited amount of available oxygen. When the temperature eventually reached in excess of 650^{o}C

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(ideally about 800^{o}C), a reduction reaction would occur between the crushed roasted ore and the carbon monoxide. Carbon monoxide is a highly reductive agent and as a first stage it detached an oxygen atom from each molecule of ferric oxide (Fe_2O_3), reducing it to iron monoxide (FeO, also known as *wüstite*). In the second step the carbon monoxide further reduced the iron monoxide iron ($FeO + CO \rightarrow Fe + CO_2$). Another important reaction occurring in the furnace shaft was the combining of two molecules of iron monoxide (FeO) with one of silica dioxide (SiO_2), resulting in the creation of fayalite (Fe_2SiO_4), which is the main compound of the unwanted slag. Fayalite, which has a melting point of about 1173^{o}C, attracts and absorbs other impurities from the bloom, which can therefore be removed by liquidation. Metallic iron formed in the furnace in the above-described process at about 1250^{o}C but would melt at 1538^{o}C (*Schrüfer-Kolb 2004, 7*), when it would not be in the required, workable form of spongy and porous iron bloom. It was therefore of paramount importance to maintain temperatures between those values, which would enable the impurities to melt away in the form of slag and leave usable, retrievable iron bloom within the furnace chamber.

The smelting process was followed by primary smithing, during which a piece of iron bloom was re-heated until it became malleable. It was then beaten, transforming a porous, spongy lump into a solid iron billet. The beating impacts carbon particles into the iron in a process called carburisation, which prevents it being brittle. The smithing process also produces slag, in this case in a very dense and magnetic form, usually with very small charcoal imprints (*B. Girbal 2013, 100*).

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Methodology

The sampled material (total weight 565g after being washed and dried) was split into sub-groups on the basis of the particular characteristics of the iron slag. As a first stage it was necessary to separate the iron-slag from the non iron-slag materials such as tile, scorched clay furnace lining fragments and ore. The second step was to determine which iron-slag fragments were ferromagnetic and to separate those from the non-magnetic examples. The non-magnetic examples were divided into sub-categories (tapping slag, shaped slag and furnace cakes), the remainder (mostly small, well-weathered fragments) were categorised as non-diagnostic. Fragments categorised as magnetic were examined through magnifiers with degrees of magnification ranging from 2x to 10x, followed by microscopic examination at 100x magnification. The other groups were examined in the same way, although only the more diagnostically promising examples were examined at 100x magnification. The fragments of iron ore were also visually examined visually and tested for magnetism, followed by sub-sampling of small fragments. These were roasted using an open-flame propane burner and then gradually cooled to room temperature, when they were re-examined visually under microscope (mag. 100x), followed by final check on their ferromagnetic properties. Finally each group was then weighed and catalogued, with representative samples being photographed.

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The summary results

The majority (fifty two per cent) of the sampled material was classified as furnace cakes, this group comprising solid and amorphous furnace iron-slag fragments that had solidified *in-situ* in the 'slag-pit' at the base of the furnace shaft. This represents strong evidence that a non-tapping bloomery technique using 'shaft-type' furnaces was employed on-site or in close vicinity.

The other significant group comprised about thirty nine per cent of dense, magnetic smithing slag, this providing reliable evidence for smithing activity having been carried out on site or in very close vicinity.

The other small and weathered fragments (five per cent) were classified as non-diagnostic due to the lack of diagnostic features. Vitrified furnace lining made up about four per cent of the assemblage,

Context	Tap slag	Furnace cakes solid and amorphous	Furnace shaped slag	Smithing	Ore	Non-diagnostic	CBM tiles	Lining/ vitrified	TOTAL
6311	-	-	-	44g	-	-	-	-	**44g**
6410	-	-	-	154g	-	-	-	-	**154g**
9105	-	228g	-	-	-	29g	-	21g	**278g**
9106	-	65g	-	20g	-	-	-	4g	**89g**
TOTAL	**0**	**293g**	**0**	**218g**	**0**	**29g**	**0**	**25g**	**565g**
	-	52%	-	39%	-	5%	-	4%	

Table 1. Showing summary results of the iron-working waste analysis.

Tap slag

There was no tapping slag identified within this assemblage

Furnace slag cakes

This type of slag was formed at the base of the furnace shaft and was once molten, having solidified *in-situ* into solid, usually quite amorphous iron-slag cakes. These comprised about 52% (293g) of the assemblage. The majority of the fragments were dense and porous. All the fragments appeared to have been deliberately broken down into smaller pieces and it seems that the people working on this site were routinely crushing large slag lumps into smaller fragments before disposing of them in waste pits. However, even as fragments, they are still a valuable source of information.

The shaped slag

There was no shaped slag identified within this assemblage

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Smithing slag

This type of slag was formed during the primary and secondary phases of smithing and comprised about thirty nine per cent (218g) of the assemblage. Smithing slag or smithing hearth bottom (SHB) is usually dense and magnetic, circular or oval in plan and convex with infrequent charcoal imprints. It also contains traces of hammerscale fused or embedded on its surface, mostly along the edges. The largest fragment of SHB was recovered from context (6410).

Plate A. Smithing hearth bottom (SHB) from context (9106). Charcoal impressions are clearly visible.

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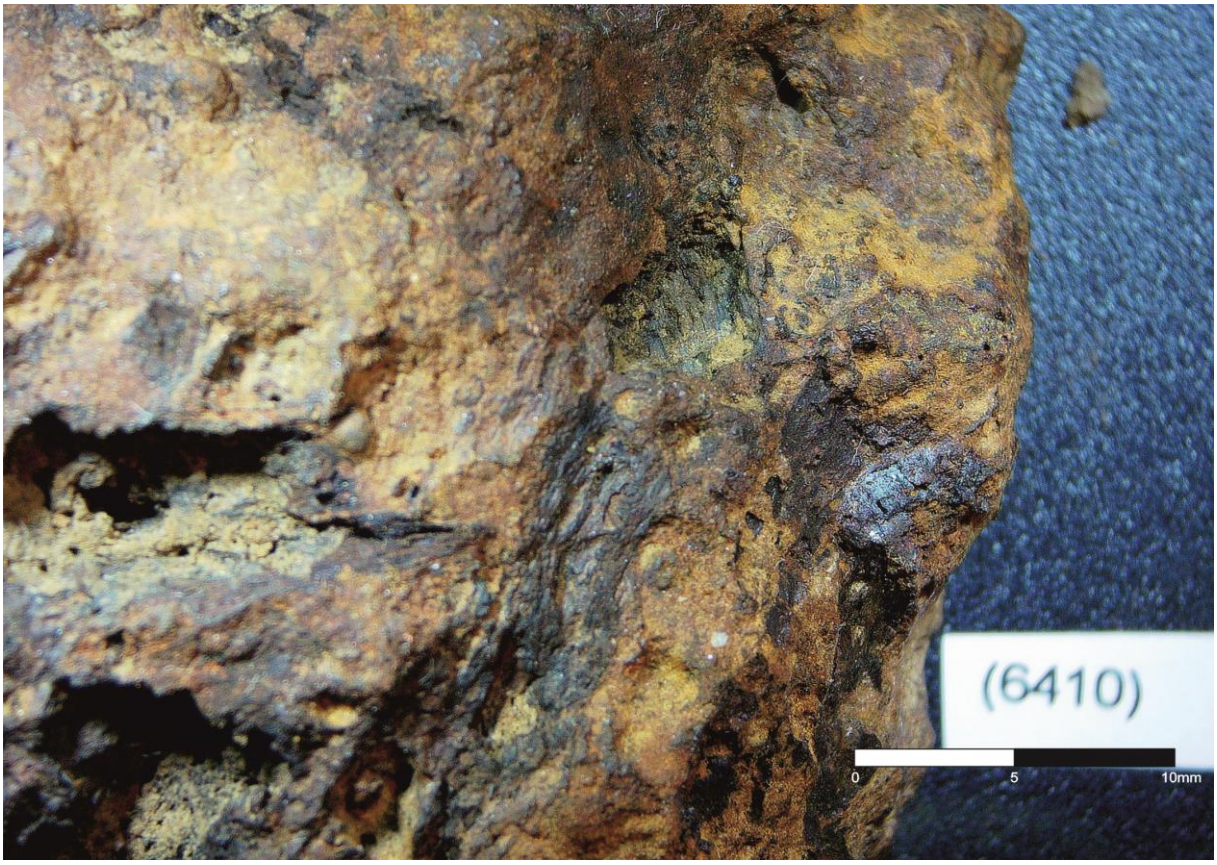

Plate B. Smithing hearth bottom (SHB) from context (6410)

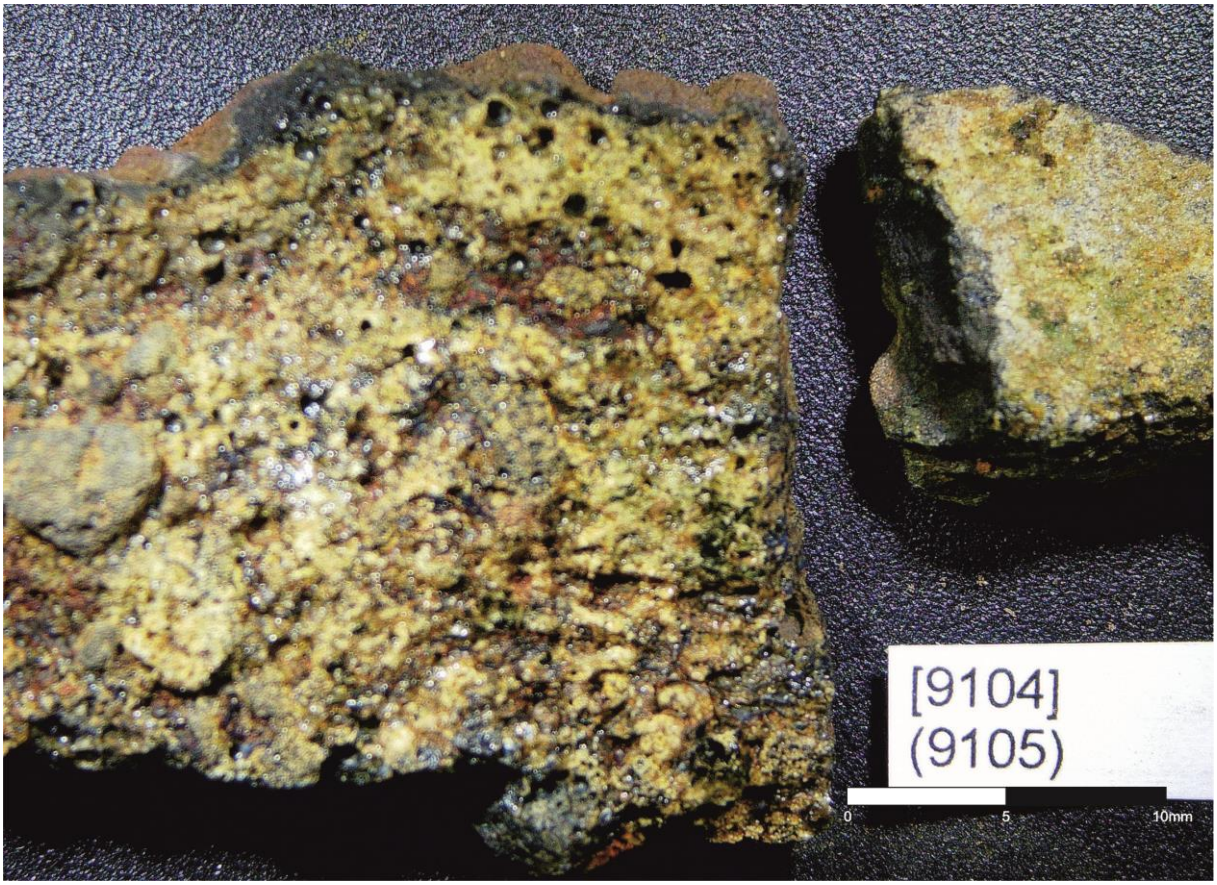

Plate C. Furnace lining retrieved from context (9105)

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Conclusions and discussion

A relatively small amount of development-related investigations has previously taken place in the local area, and consequently very little is known of local historic iron production. The analysis of remains of the iron-working site, including the detailed analysis of the industrial waste, has therefore added significantly to our understanding of this industry in its Late Iron Age/ Early Roman manifestation. The discoveries described above have provided reliable evidence for iron production having been carried out with shaft-type furnaces using non-tapping technology. This method was probably used beyond the Roman Period. The ironworks are likely located on-site or in the vicinity certainly housed iron-smelting structures and an associated smithy.

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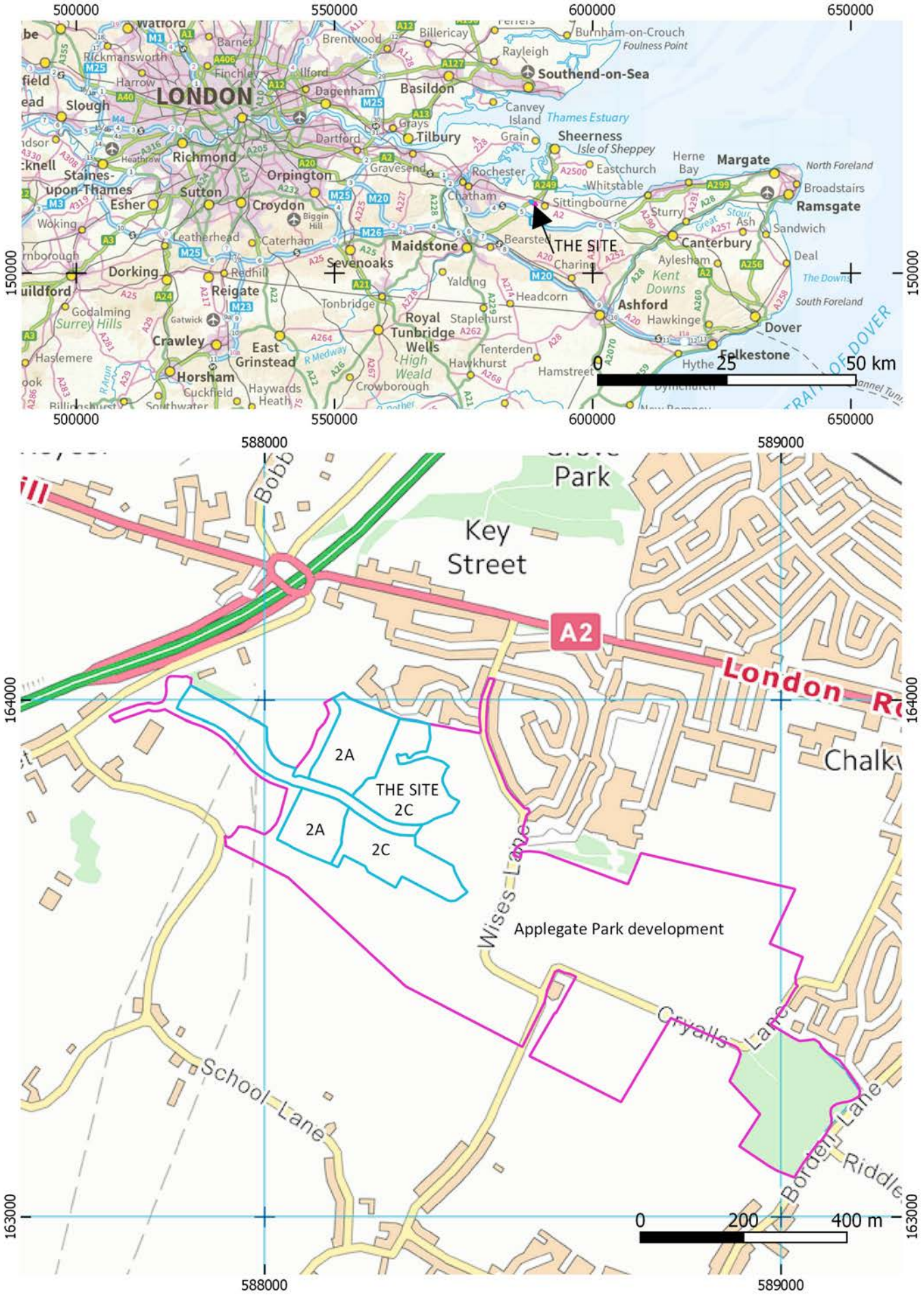


Figure 1: Site location

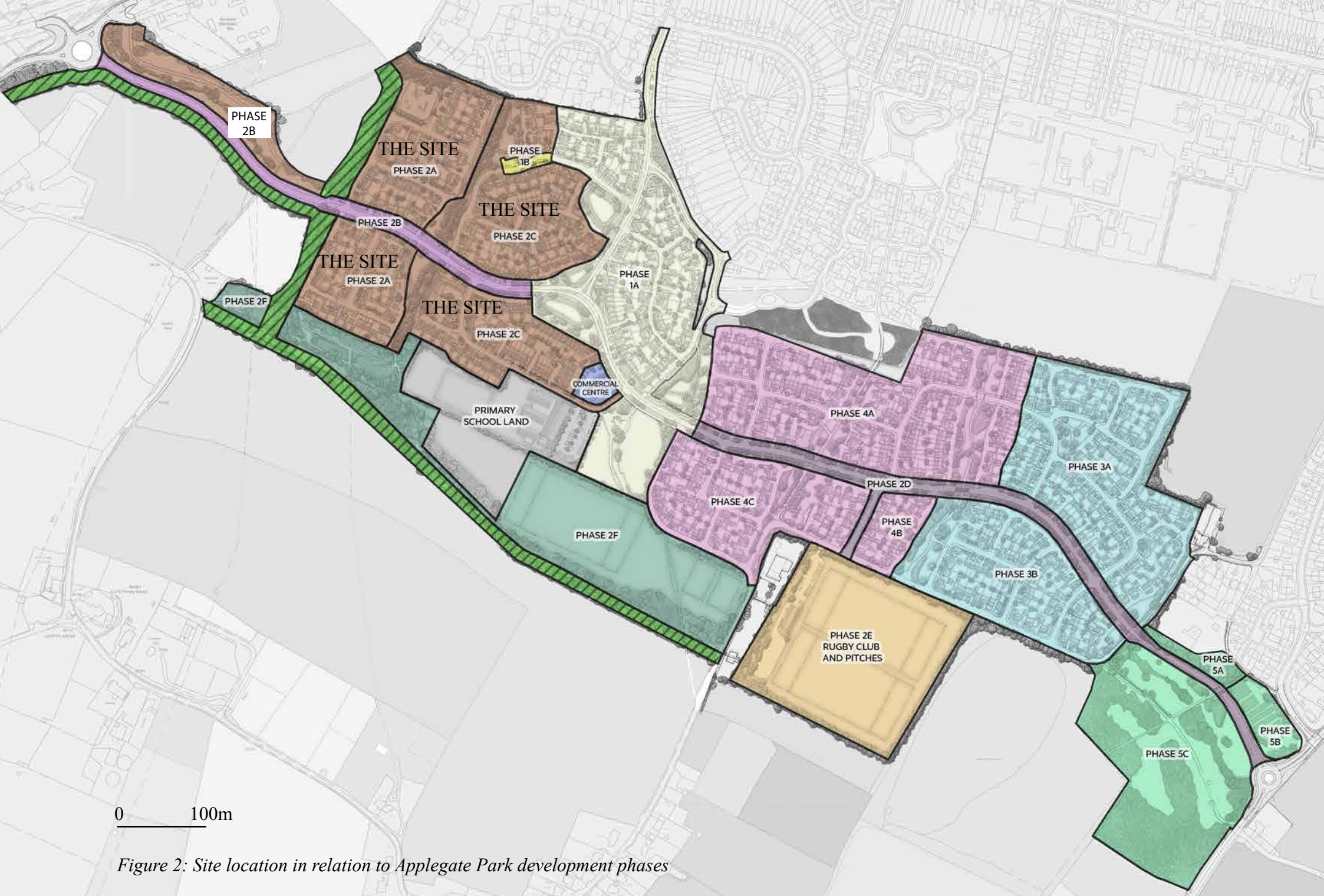


Figure 2: Site location in relation to Applegate Park development phases

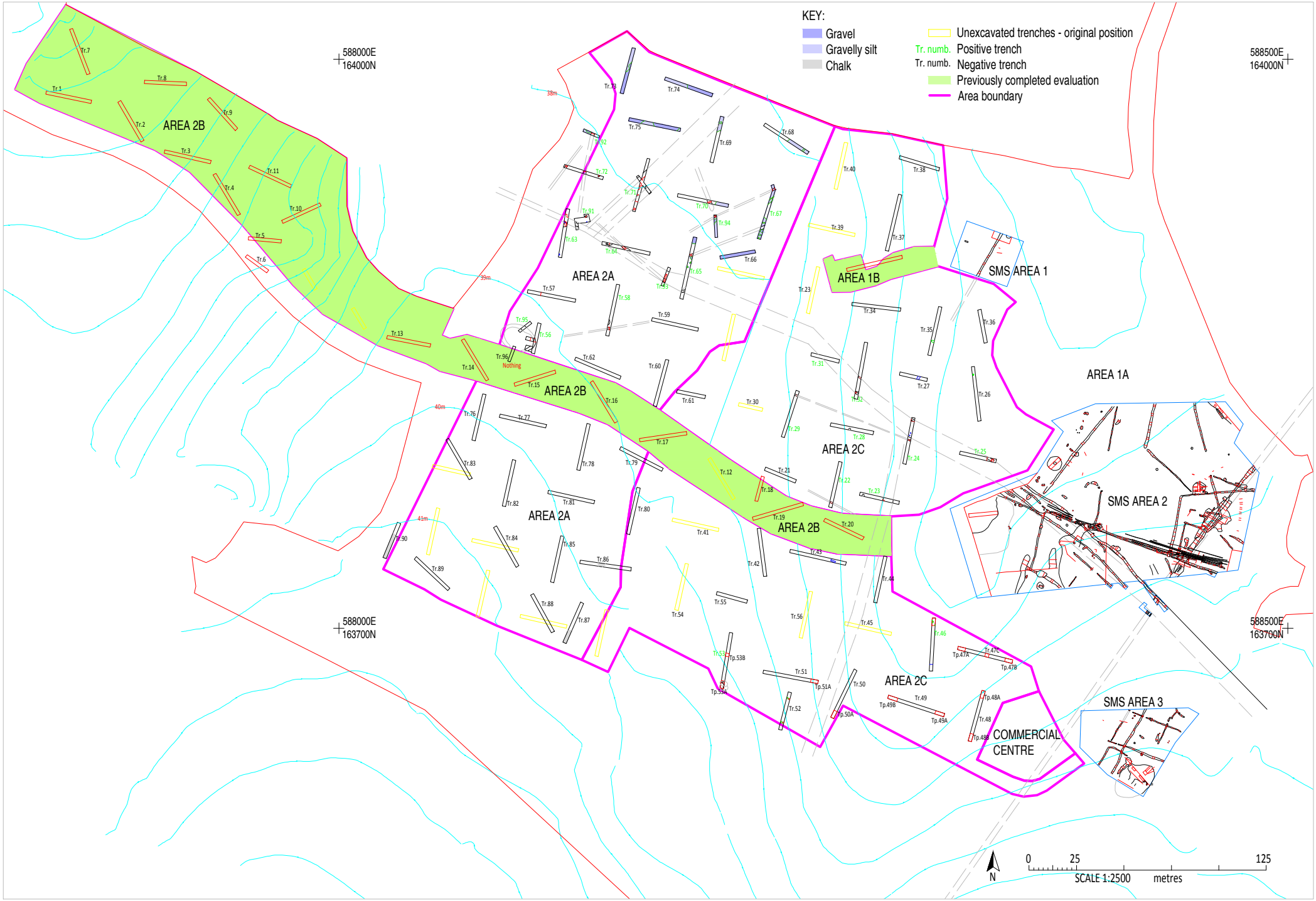


Figure 3: Trench location

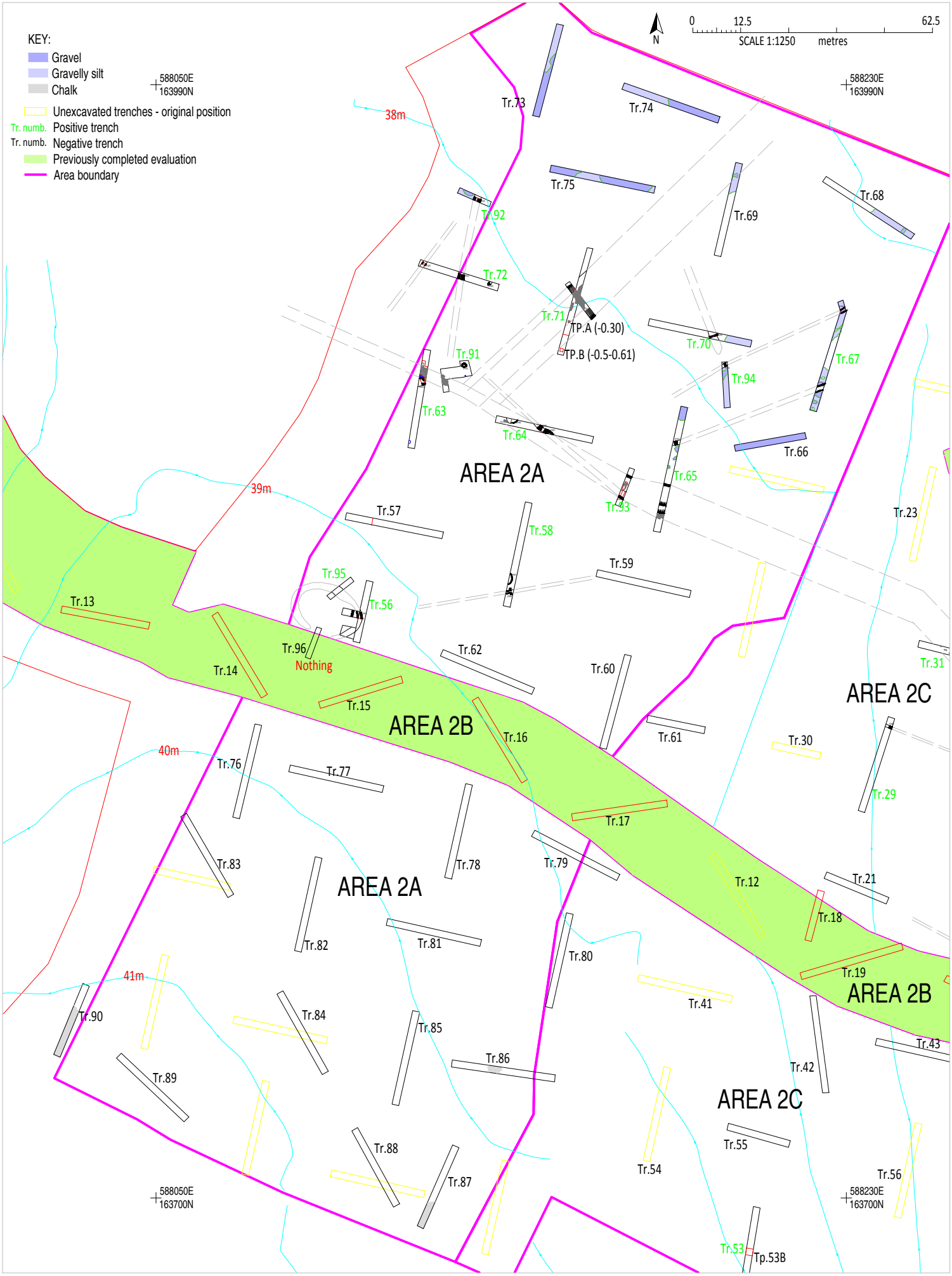


Figure 3a: Trench location - Area 2A

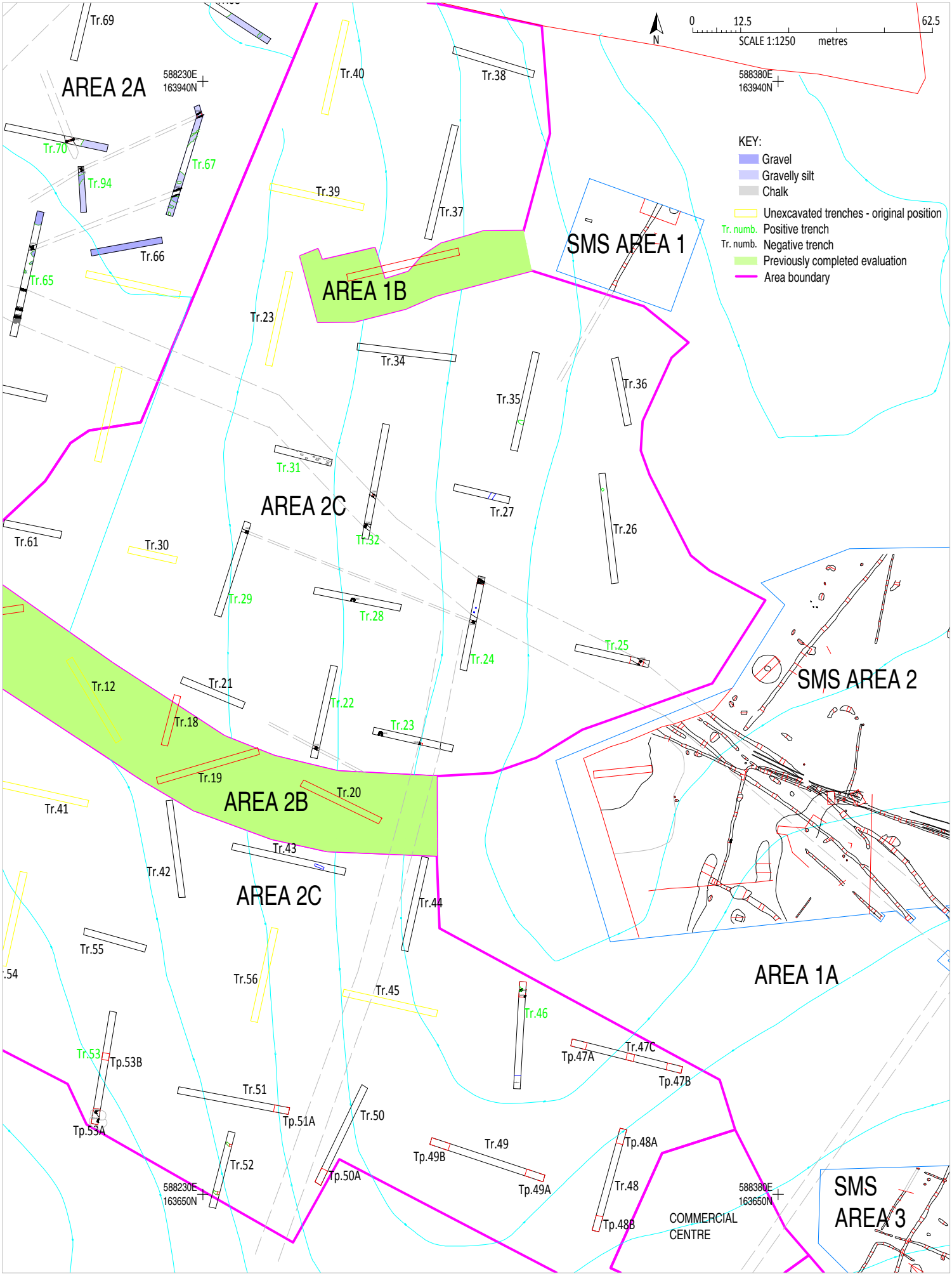


Figure 3b: Trench location - Area 2A

Figure 4: Trench location in relation to development

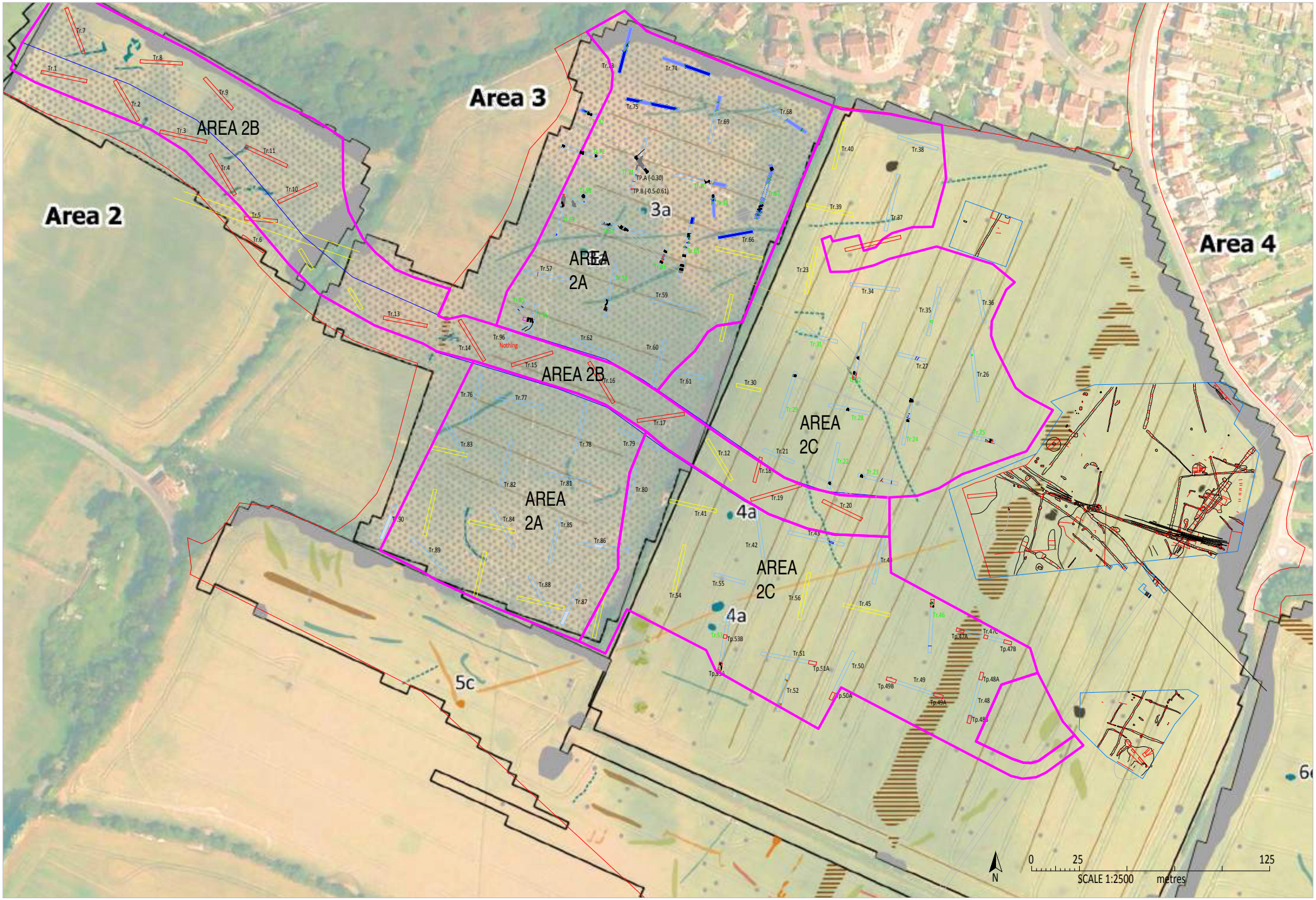
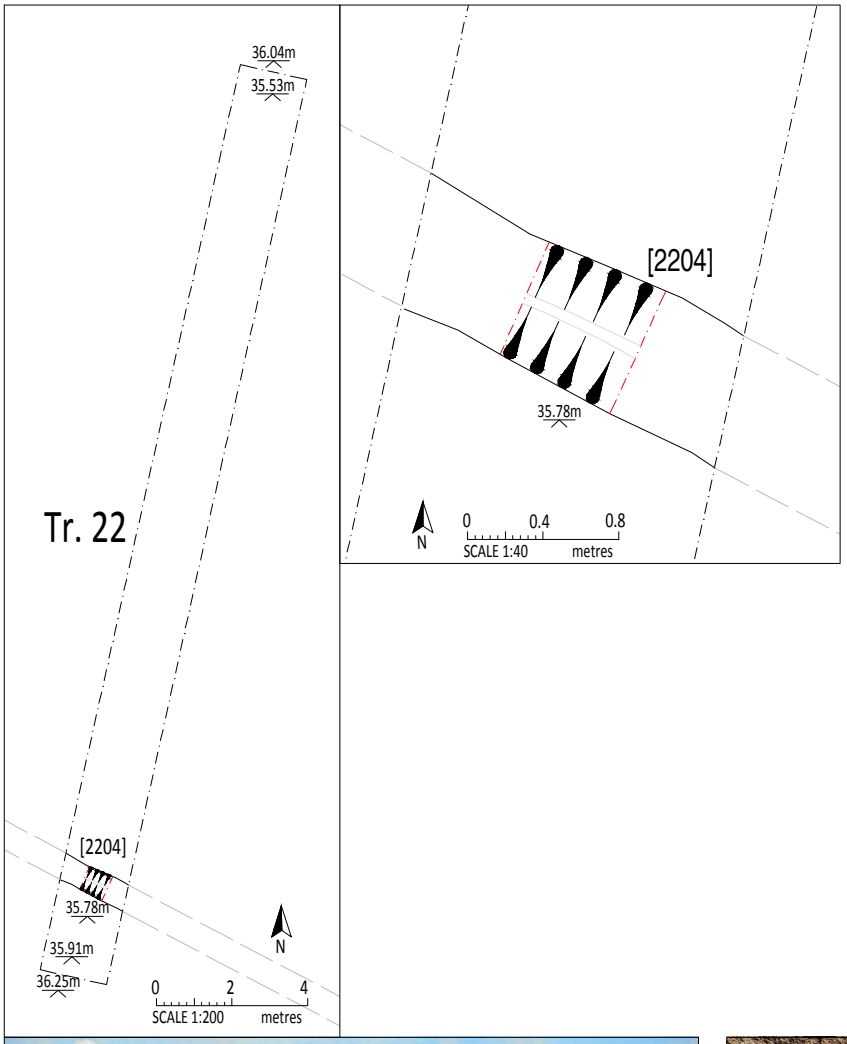
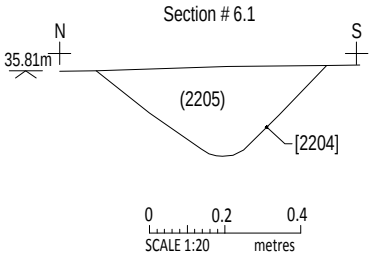


Figure 5: Trench location in relation to geophysical survey interpretation

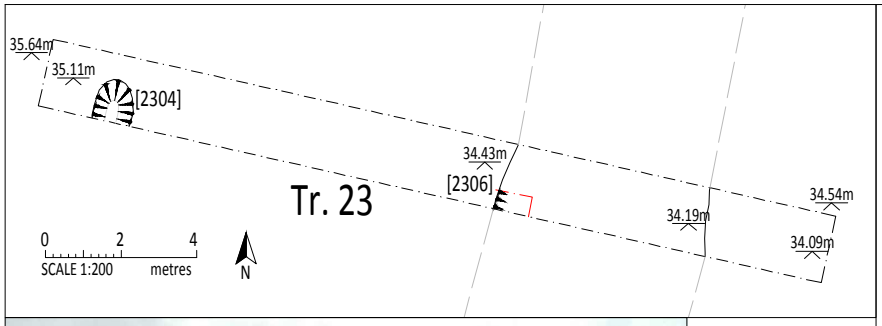


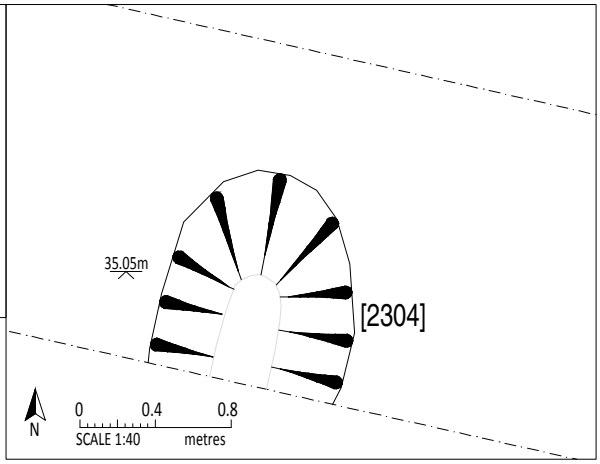


Looking south west at trench 22

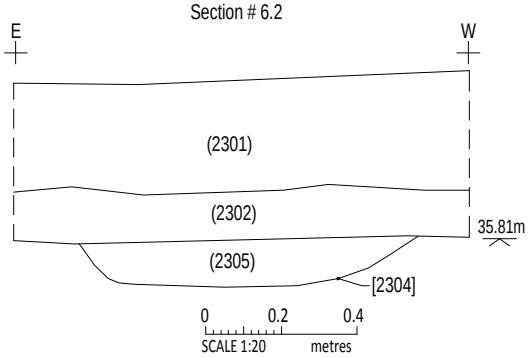
Looking south east at section of ditch 2204

Figure 6: Trench 22



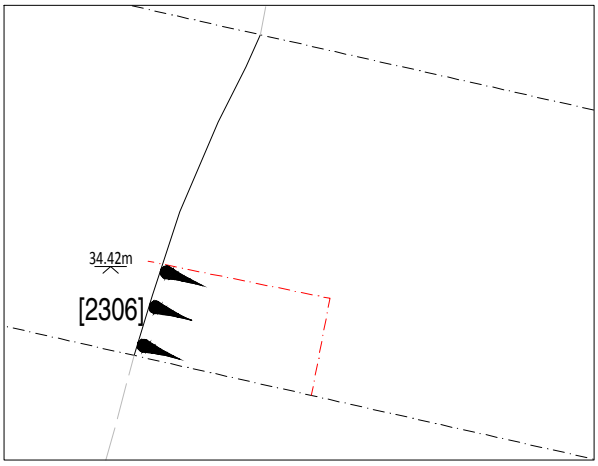


Section # 6.2

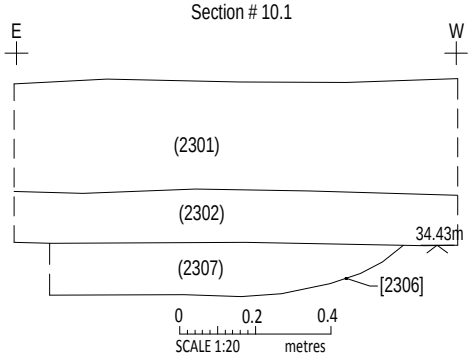


Looking north west at trench 23

Looking south at section of terminus 2304

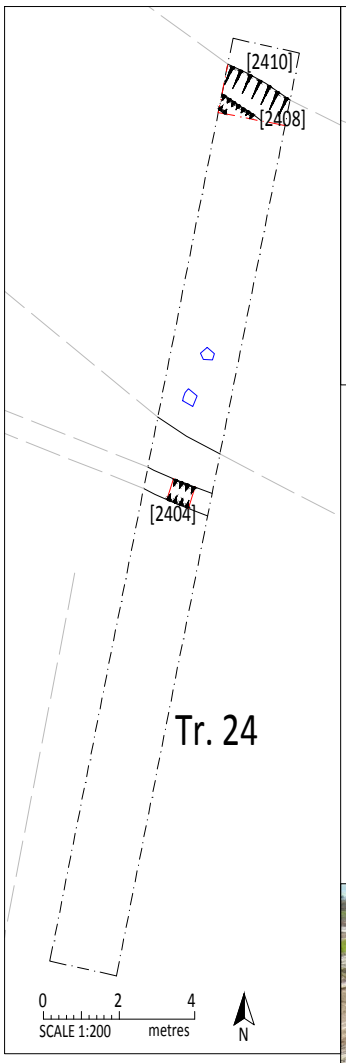


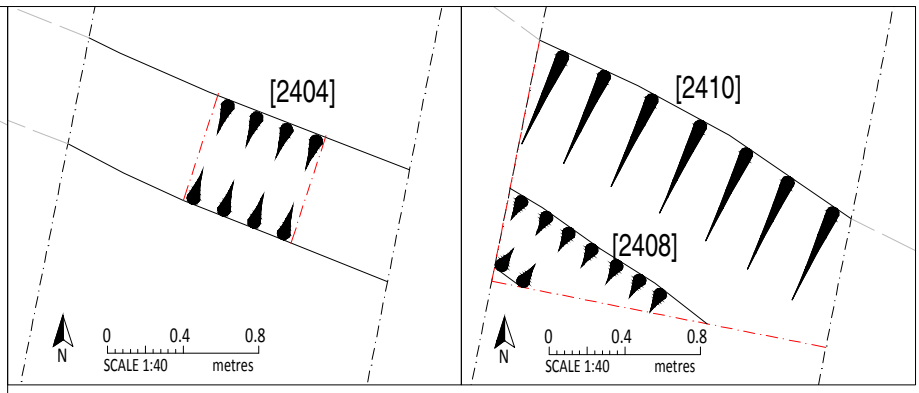
Section # 10.1



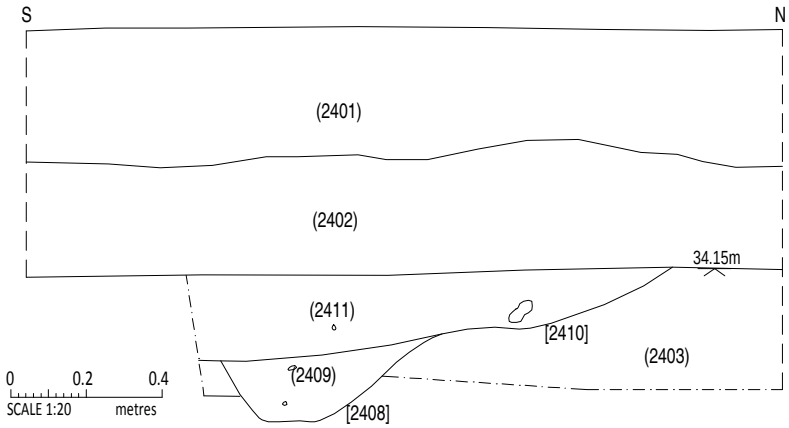
Looking south at section of the west side of the holloway 2306

Figure 7: Trench 23





Section # 7.1



Looking south at trench 24

Looking south at section of the ditch 2404

Looking west at section of the holloway 2410 cutting ditch 2408

Section # 6.3

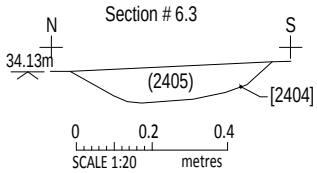
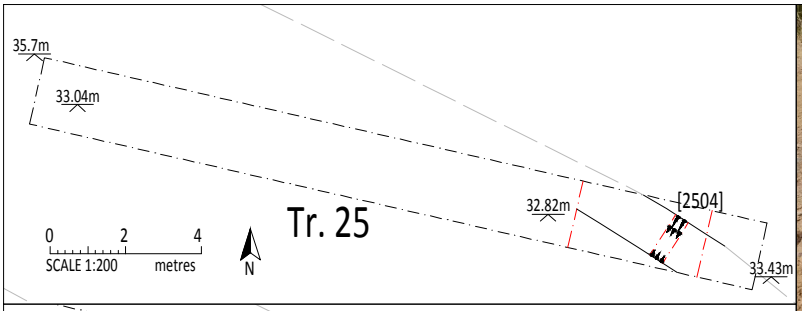
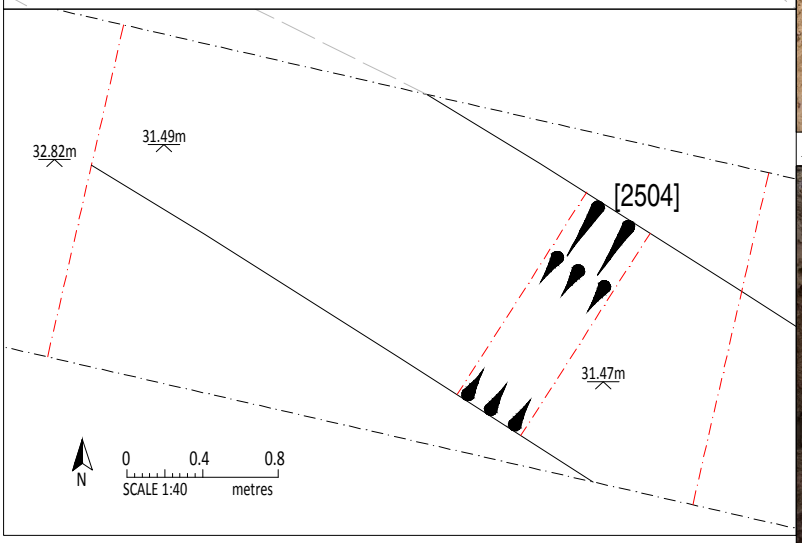


Figure 8: Trench 24

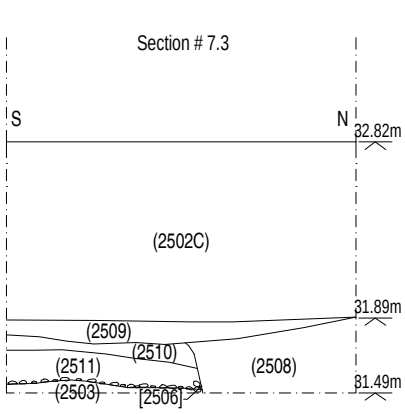


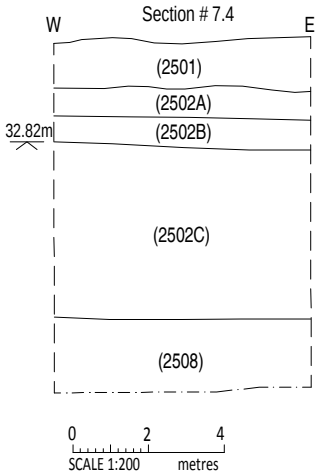
Looking north west at test pit at the east end of trench 25



Looking north west at section 7.3 of the test pit

Looking north west at section of the ditch 2506





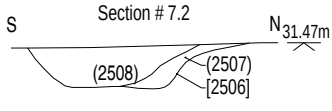
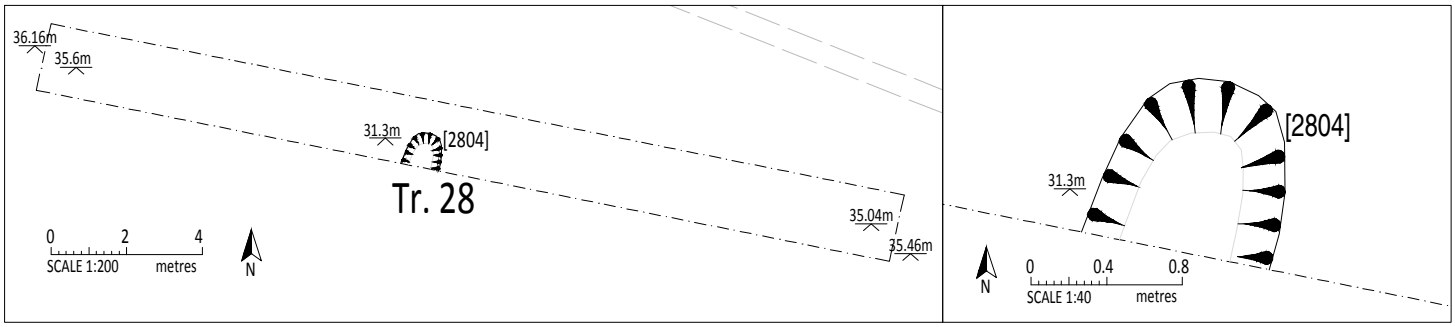


Figure 9: Trench 25



Looking east at trench 28

Looking south at section of terminus 2804

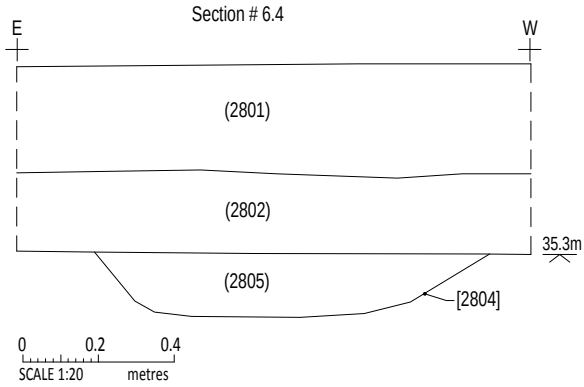
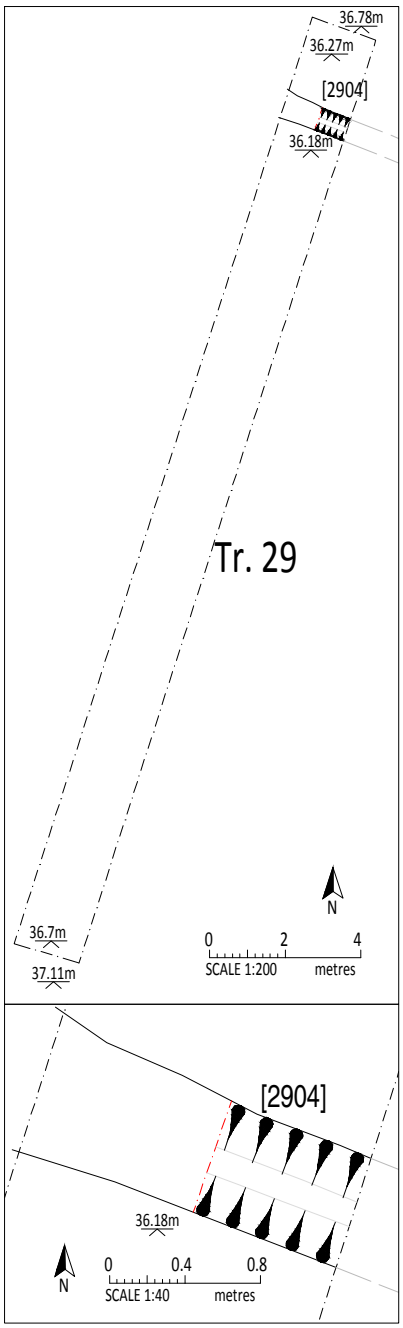


Figure 10: Trench 28



Looking north east at trench 29

Looking east at section of 2904

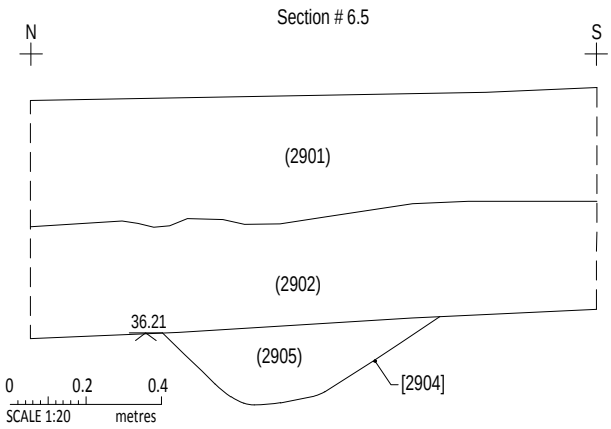
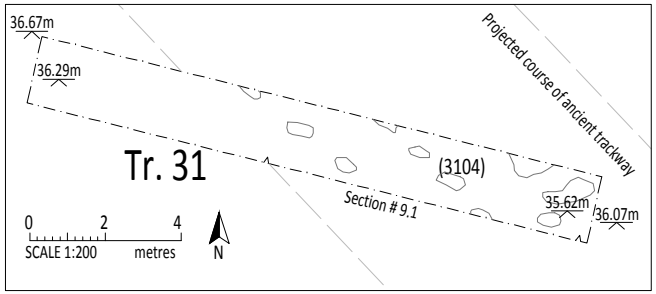
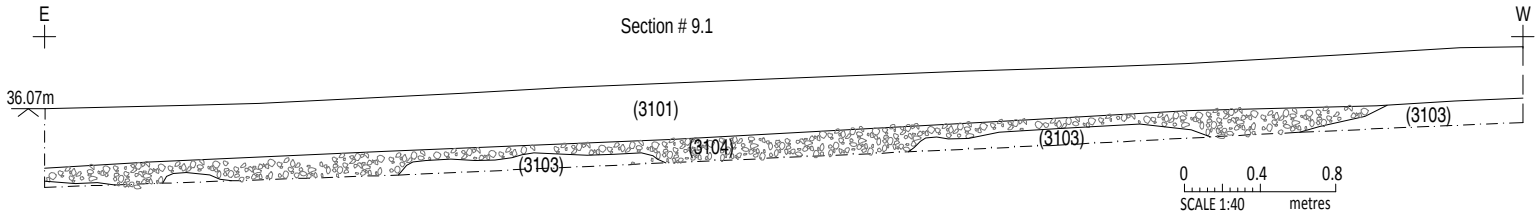


Figure 11: Trench 29

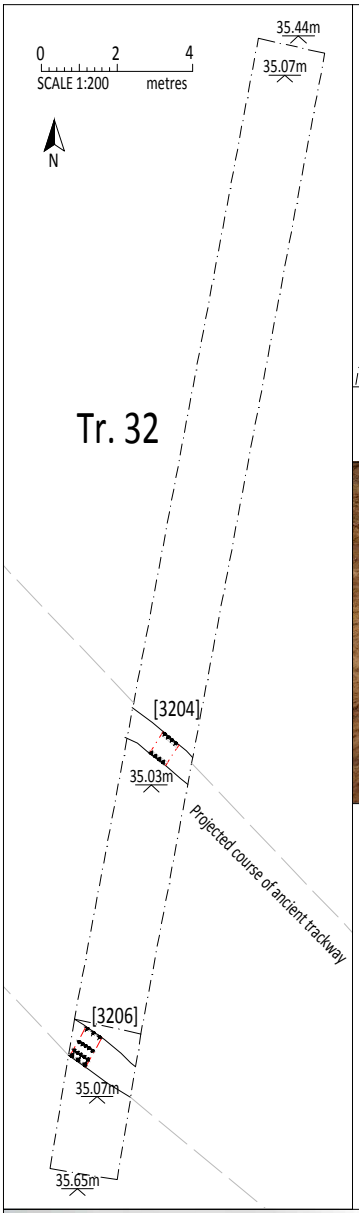


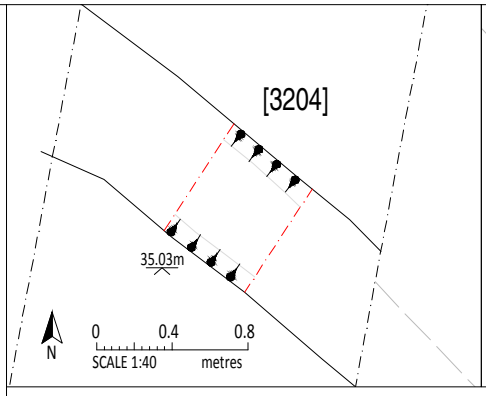


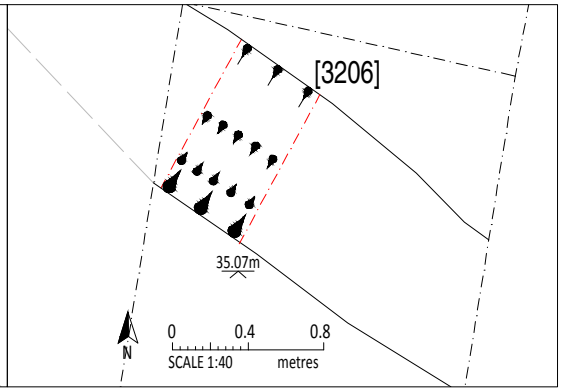
Looking west at trench 31

Looking south west at section through gravel 3104

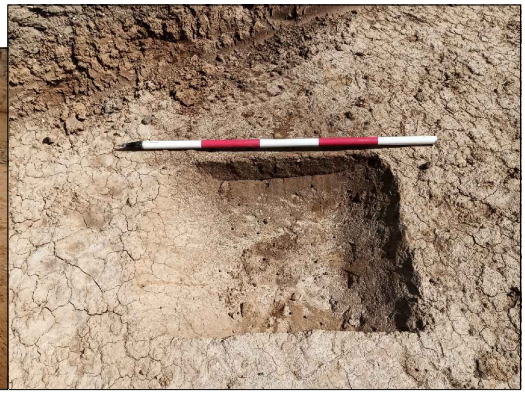
Figure 12: Trench 31



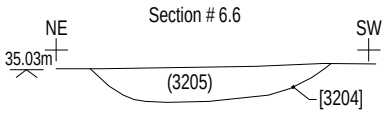


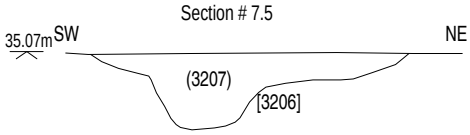


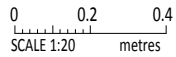
Looking north west at section of the ditch 3206



Looking south east at section of the ditch 3204

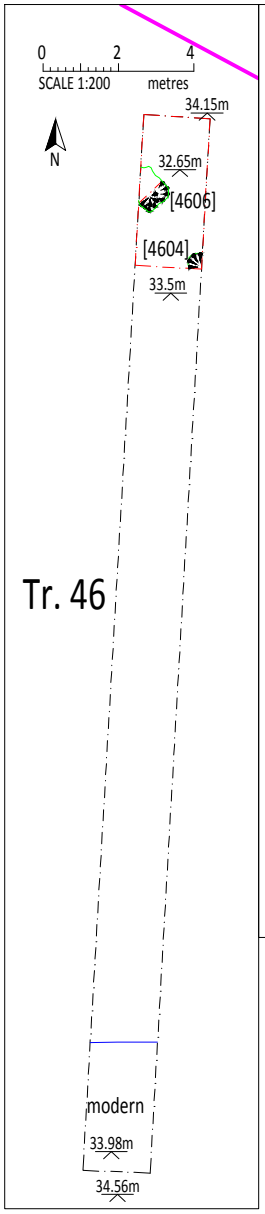


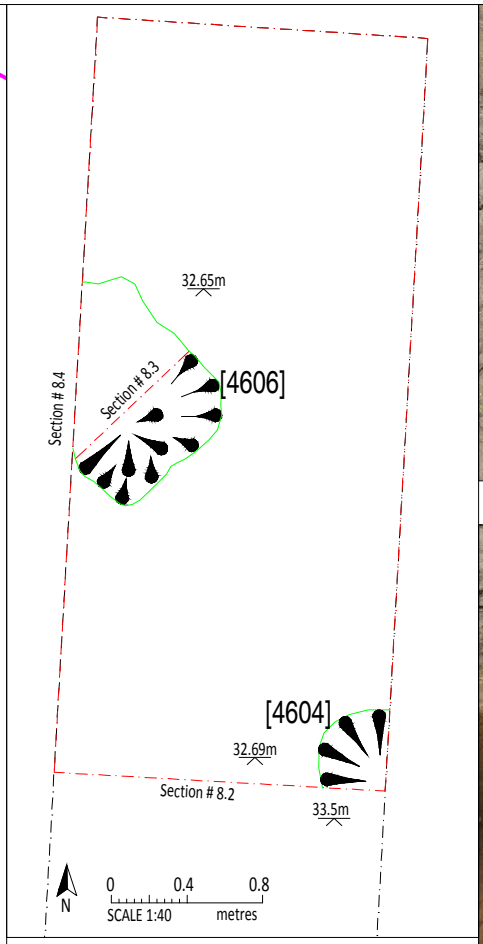


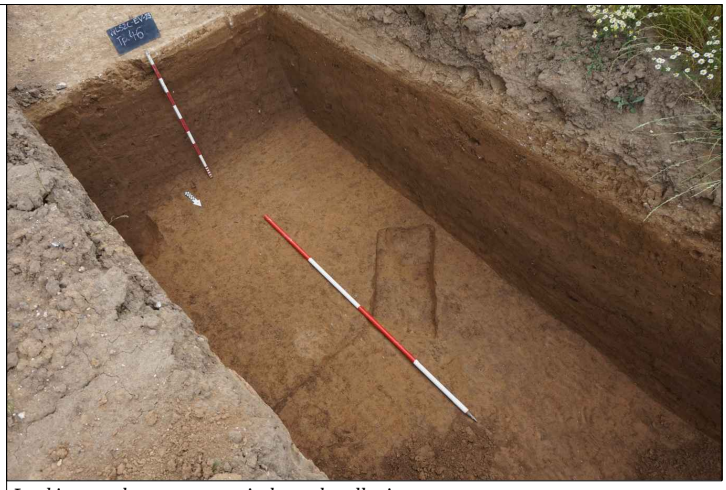


Looking north east at trench 23

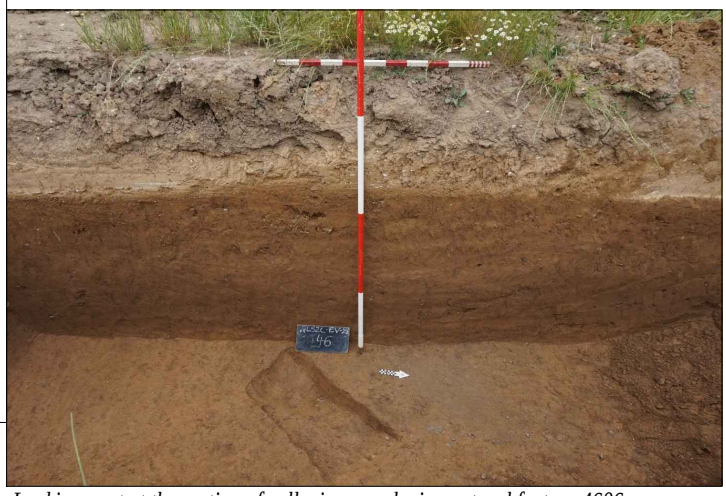
Figure 13: Trench 32





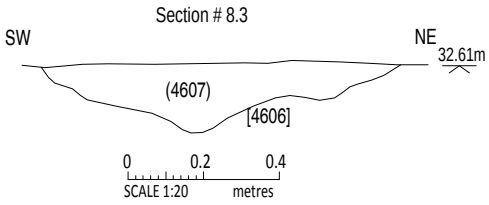


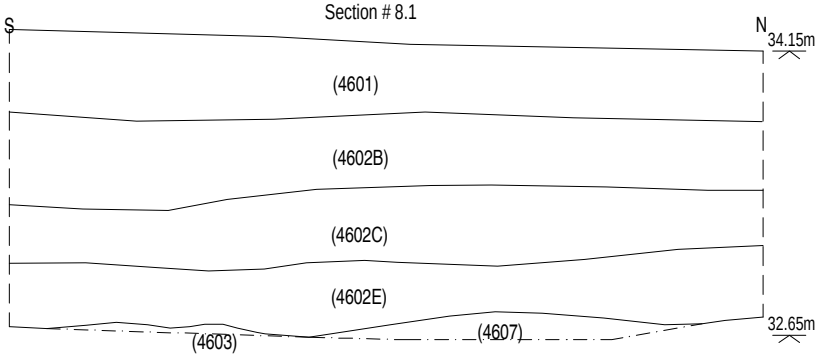
Looking south west at test pit through colluvium



Looking west at the section of colluvium overlaying natural feature 4606

Looking south at the section of colluvium overlaying tree throw hole 4604





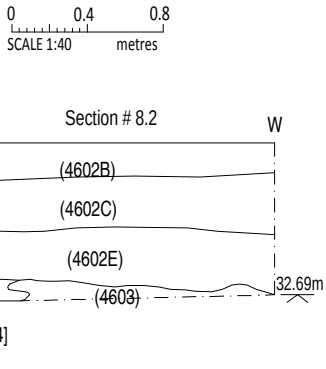
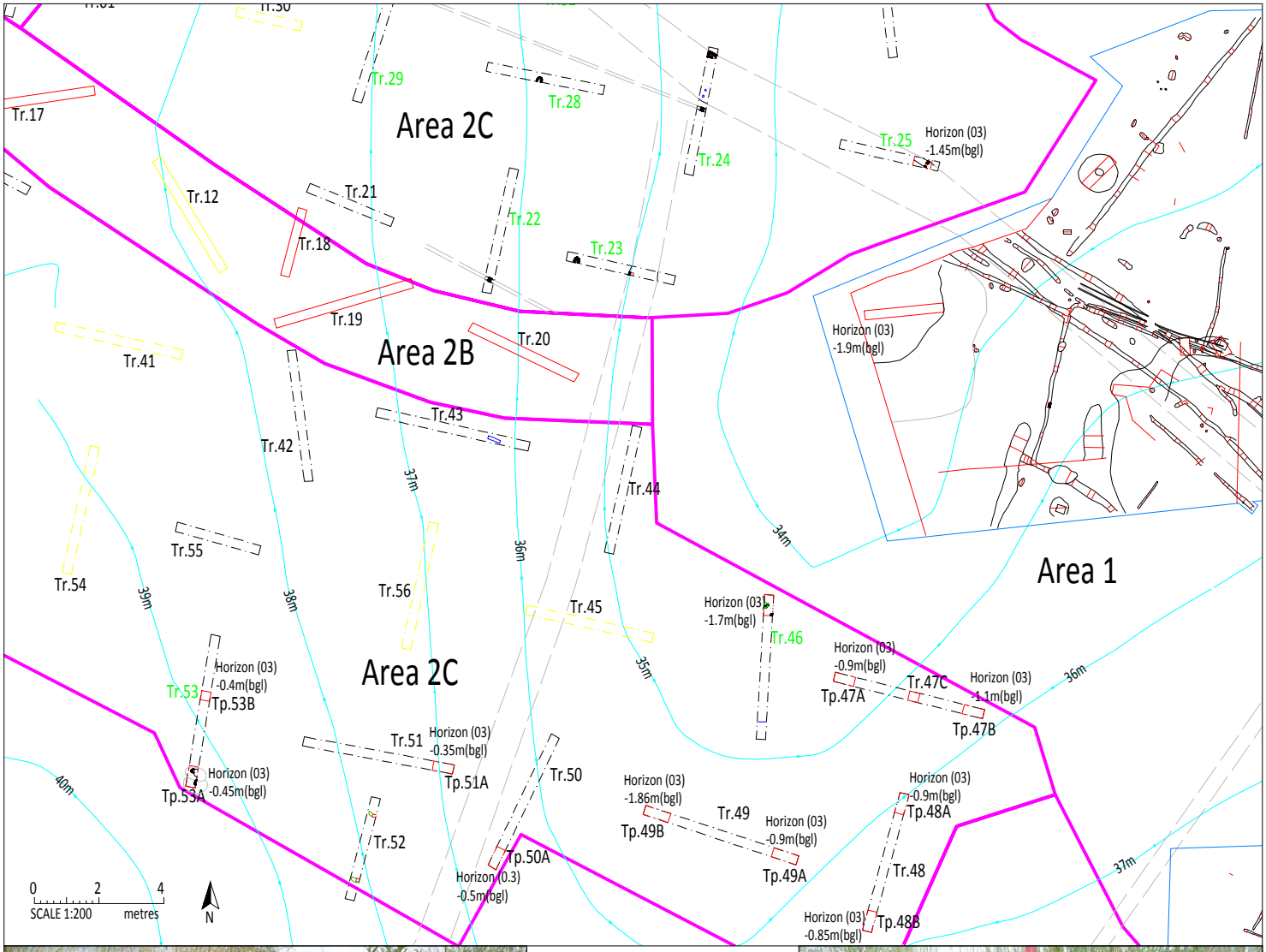
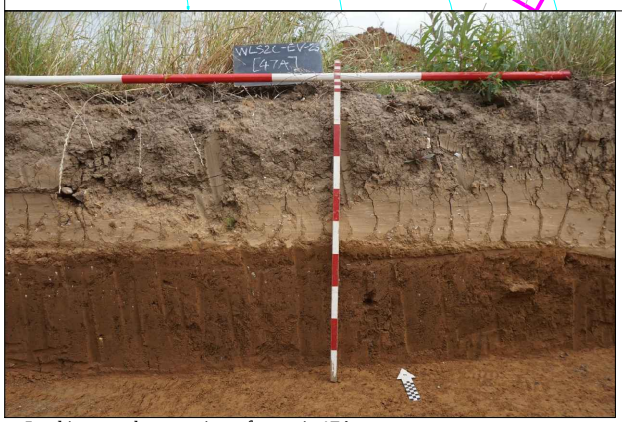


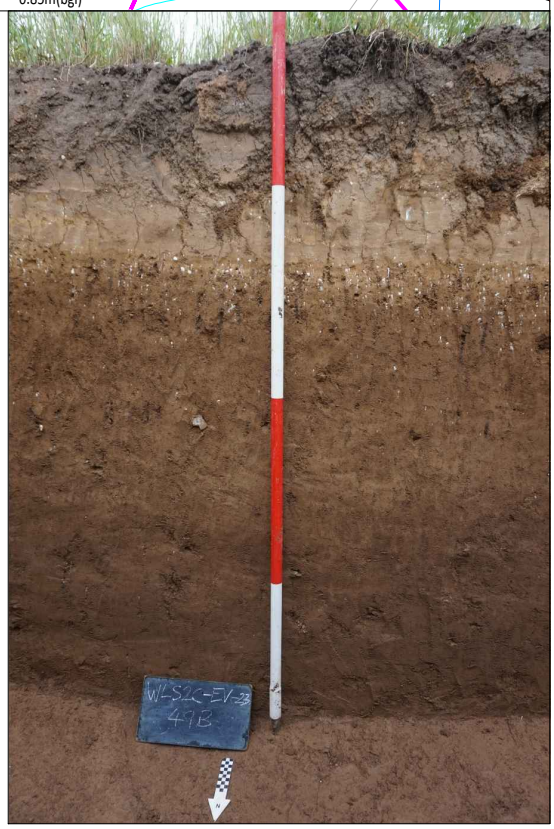
Figure 14: Trench 46





Looking north at section of test pit 47A

Looking north at section of test pit 47B



Looking north at section of test pit 49B

Figure 15: Colluvium in Trenches 46 - 53

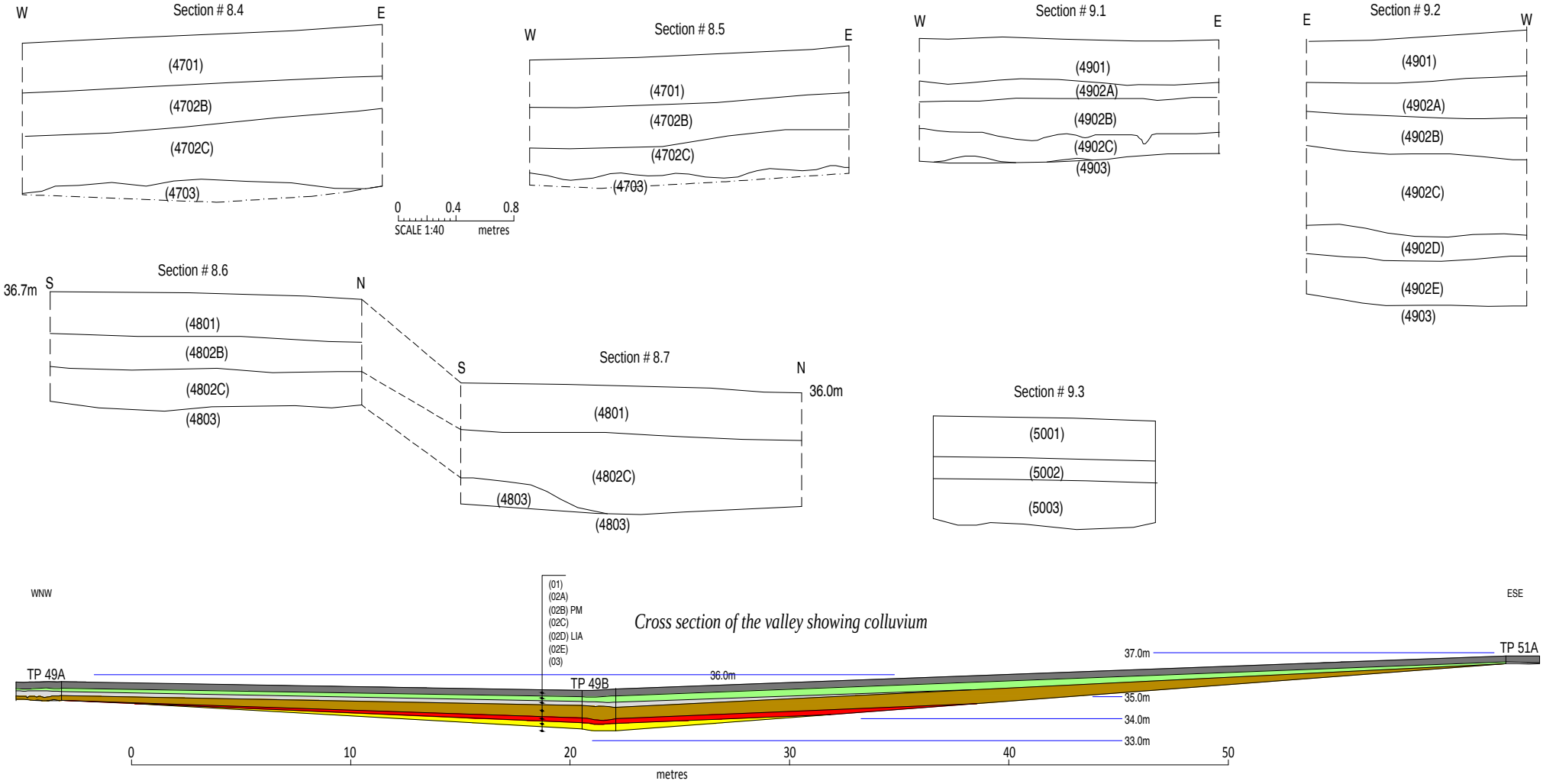
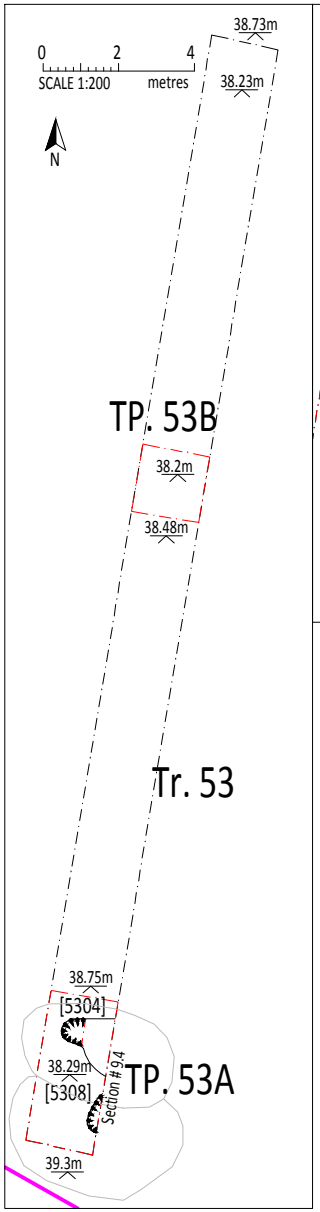
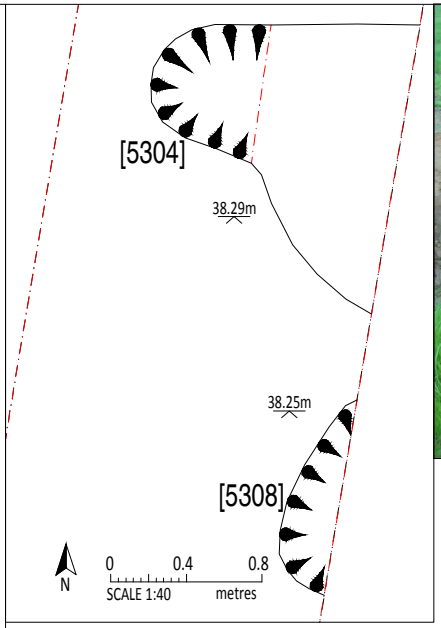


Figure 16: Sections showing colluvium in Trenches 46 - 53





Looking south at trench 53

Looking east at section of pit 5304 cutting pit 5308

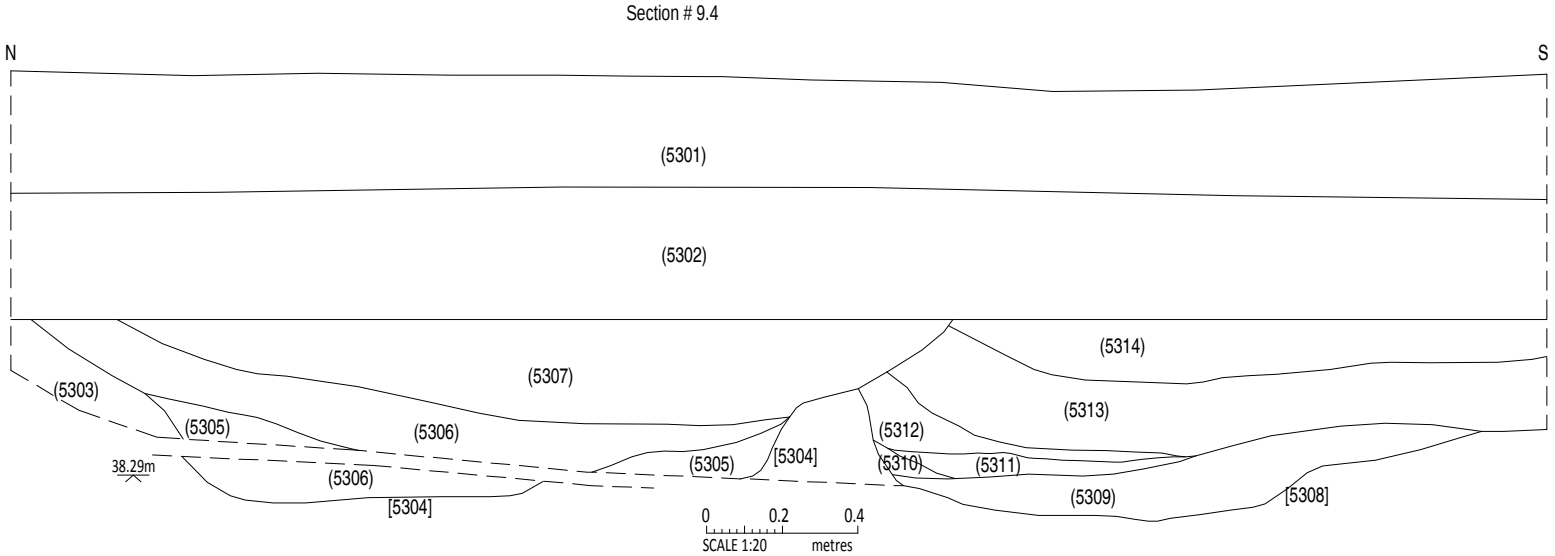
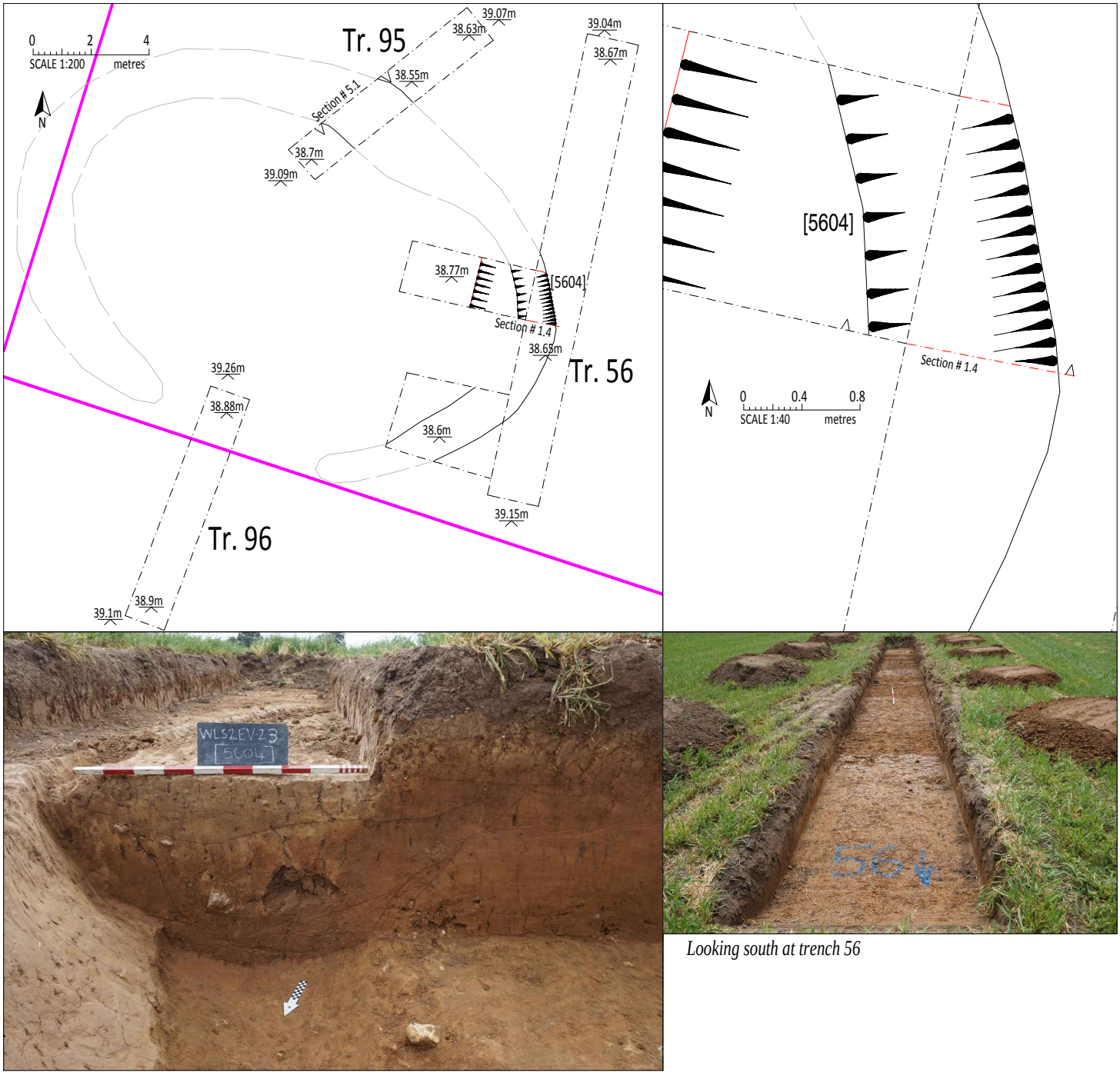


Figure 17: Trench 53



Looking south at section of the ditch 5604

Looking south at trench 56

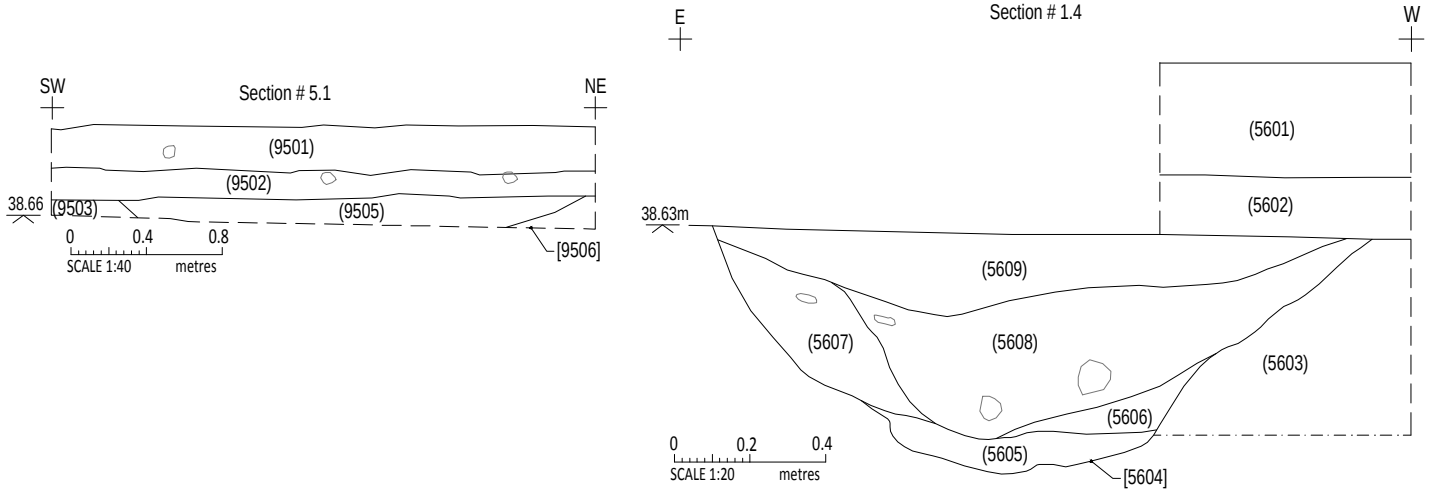
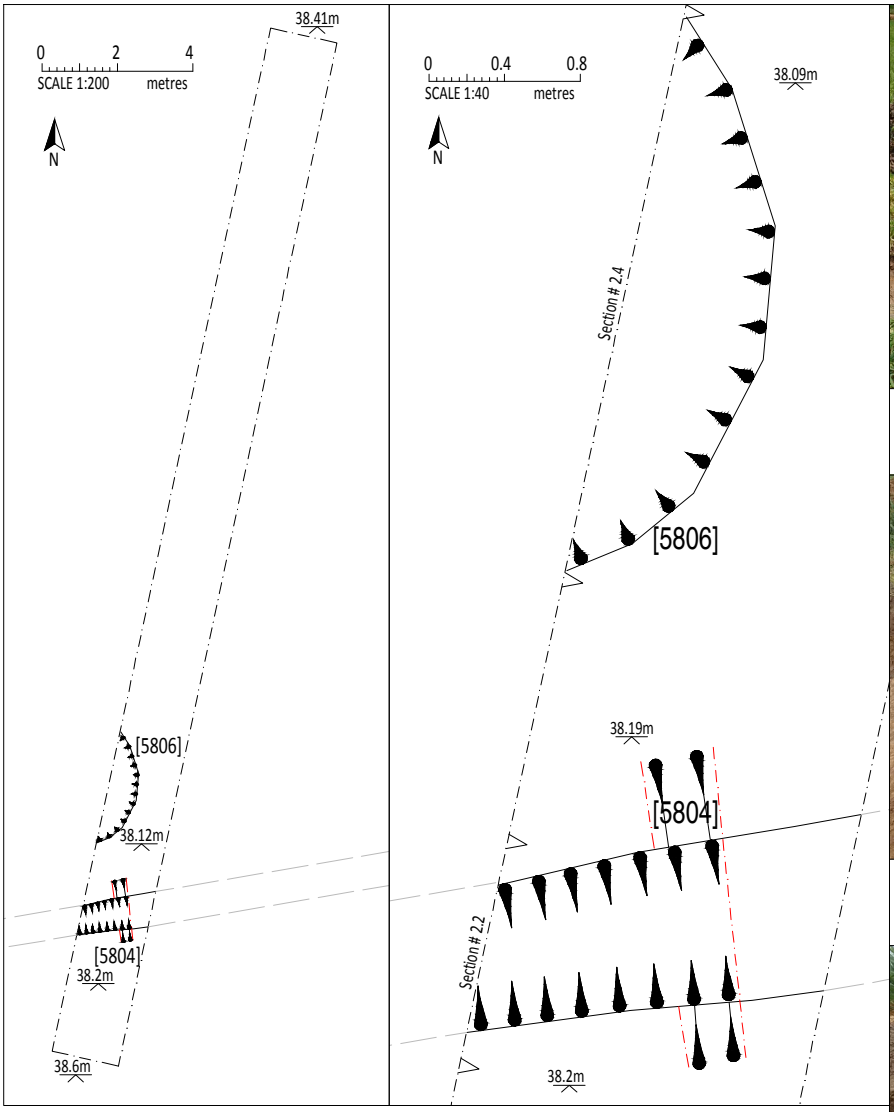


Figure 18: Trench 56, 95 and 96



Looking north west at trench 58

Looking west at section of pit 5806

Looking west at section of ditch 5804

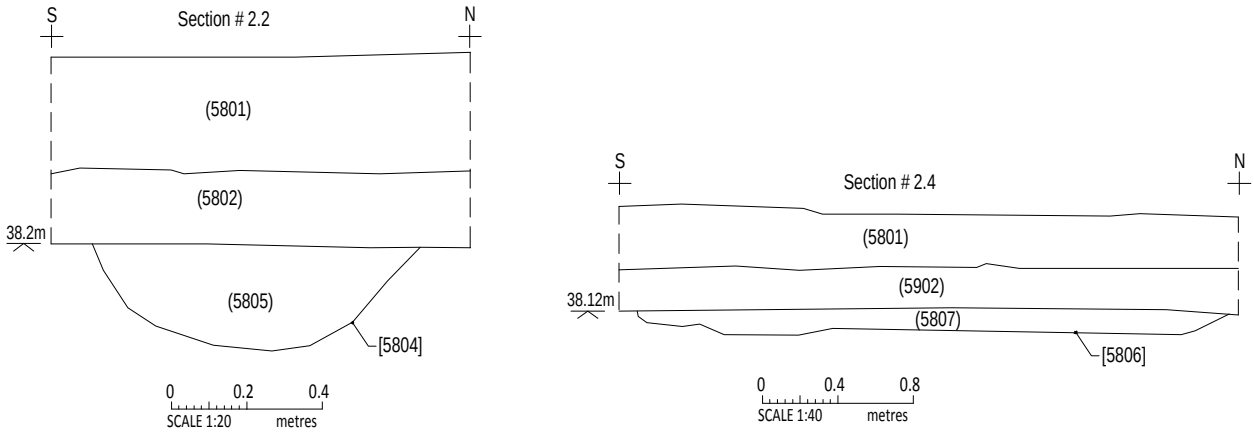
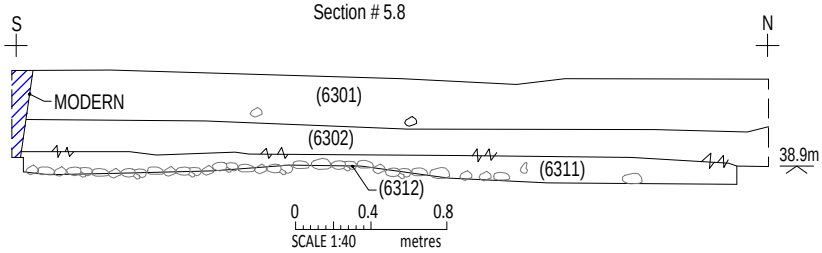


Figure 19: Trench 58

Looking north at trench 63

Looking south west at trackway 6312

Looking south at ditch 6304



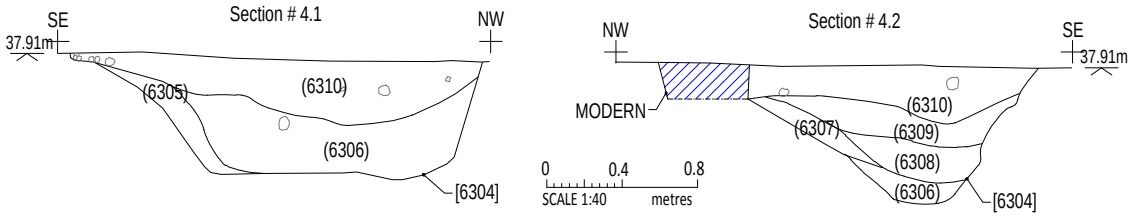
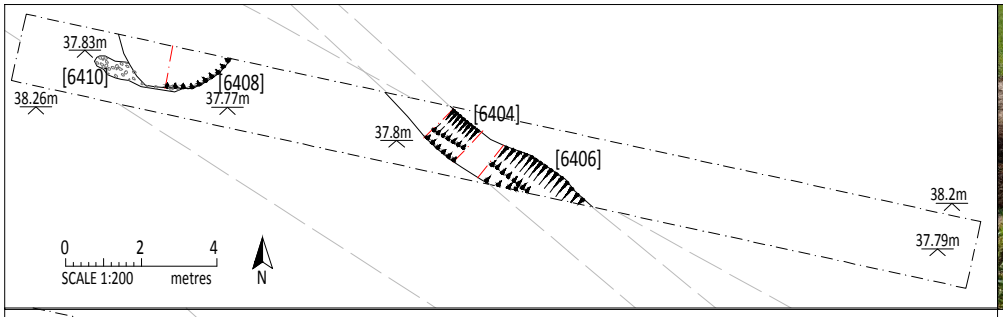
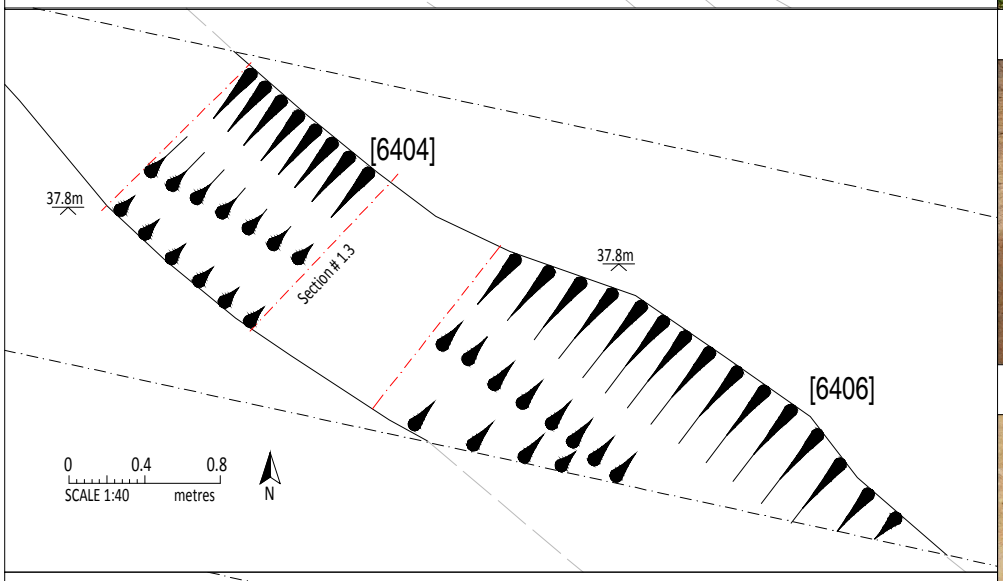


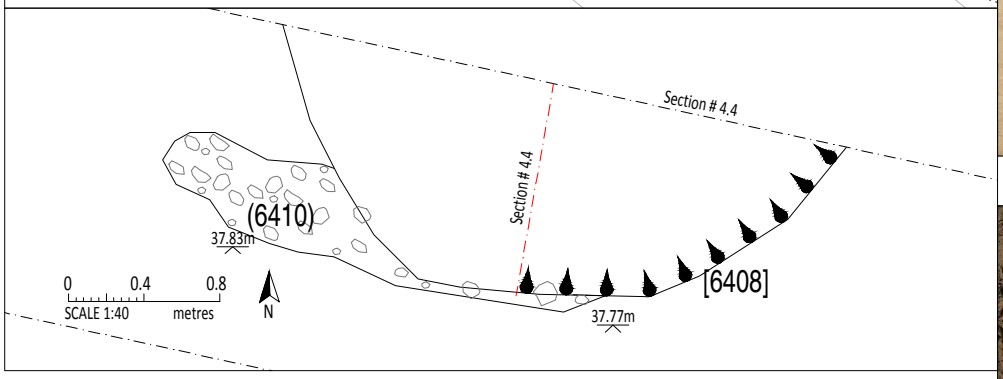
Figure 20: Trench 63



Looking west at trench 64



Looking south east at section of the ditch 6404



Looking north west at pit 6408

Looking west at trackway gravel 6410

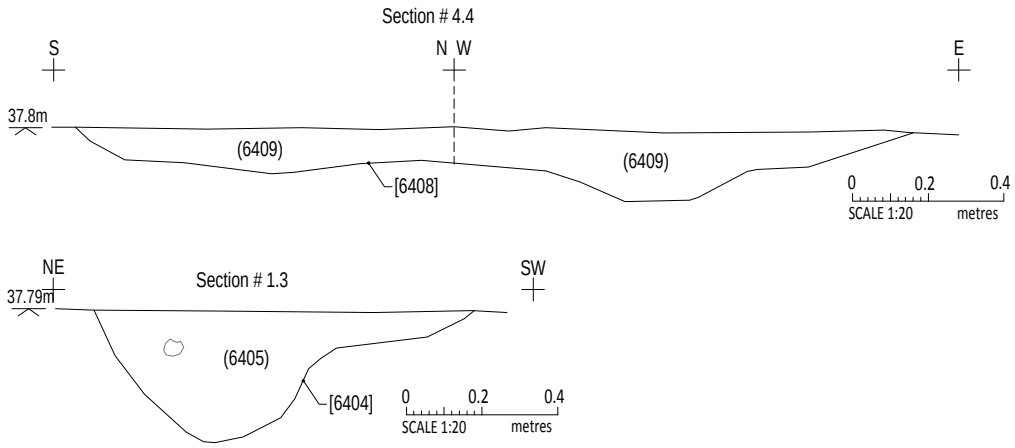
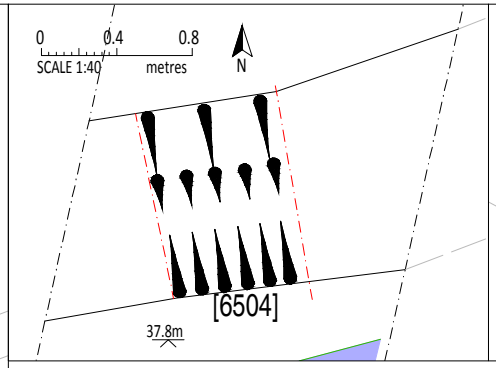
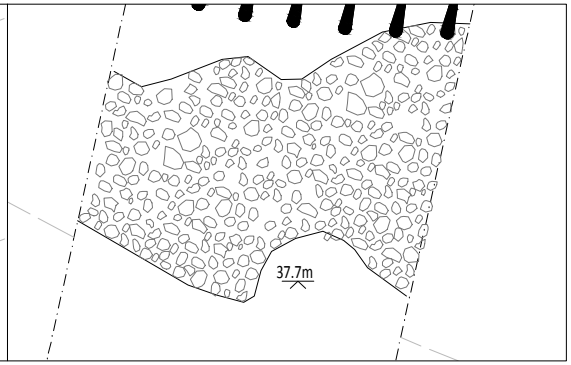


Figure 21: Trench 64





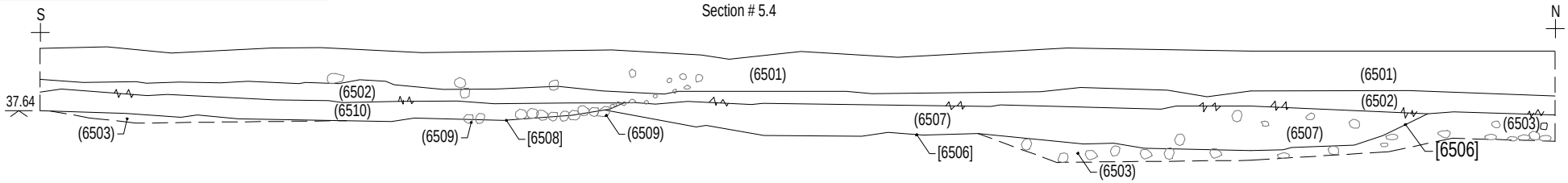
Looking north west at gravel 6509 and section 5.4

Looking south at trench 65

Looking south east at section of the ditch 6504

Looking south east at gravel 6509 and section 5.5

Figure 22: Trench 65



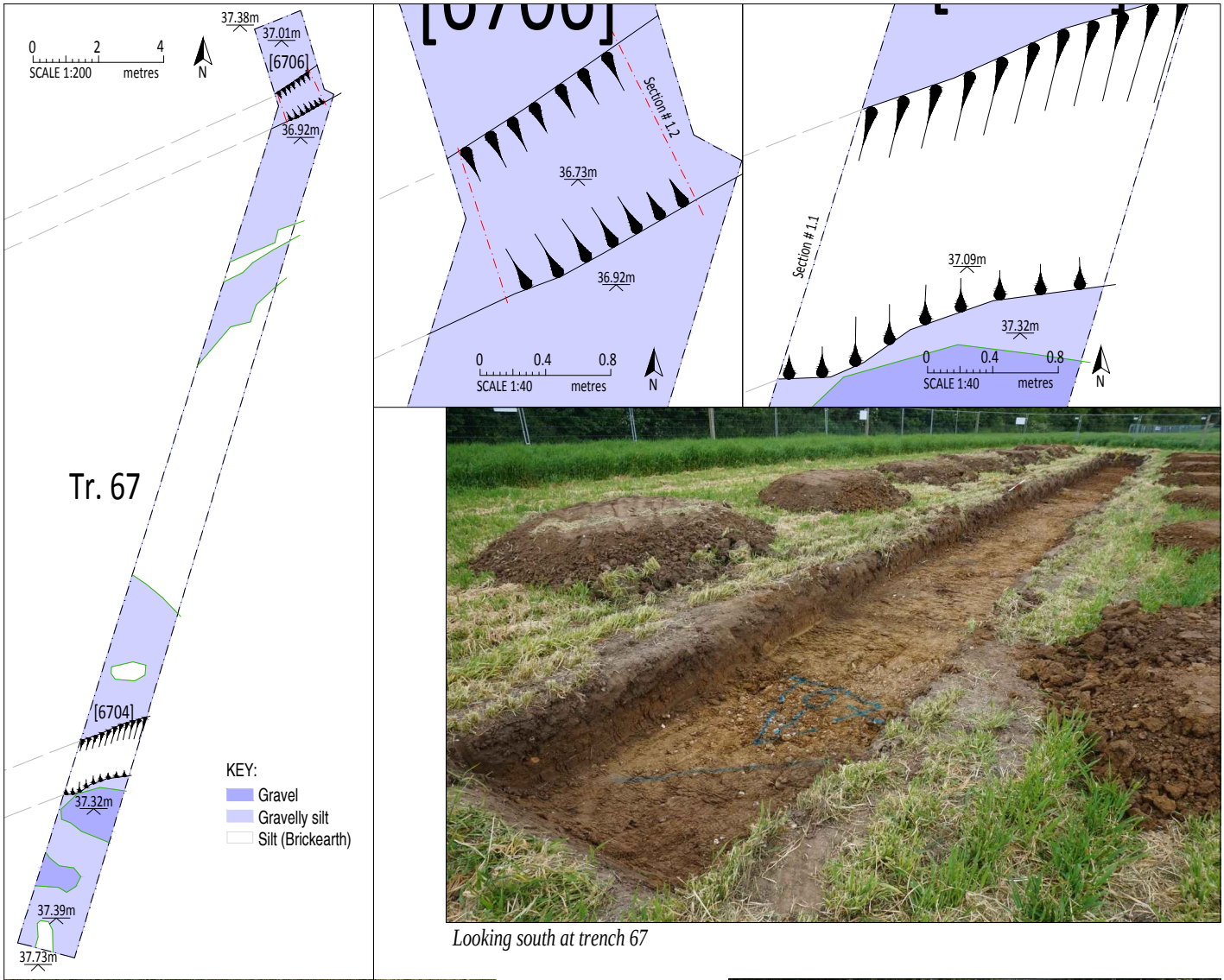
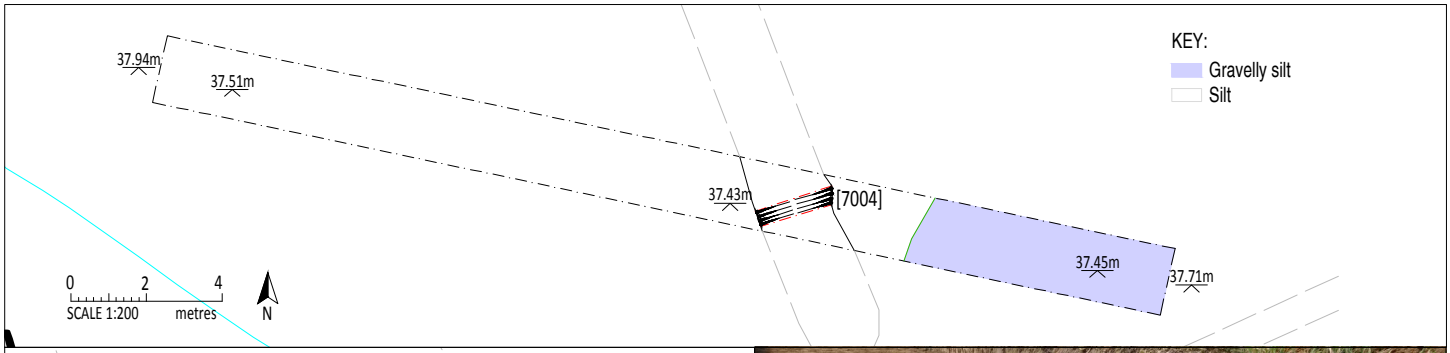
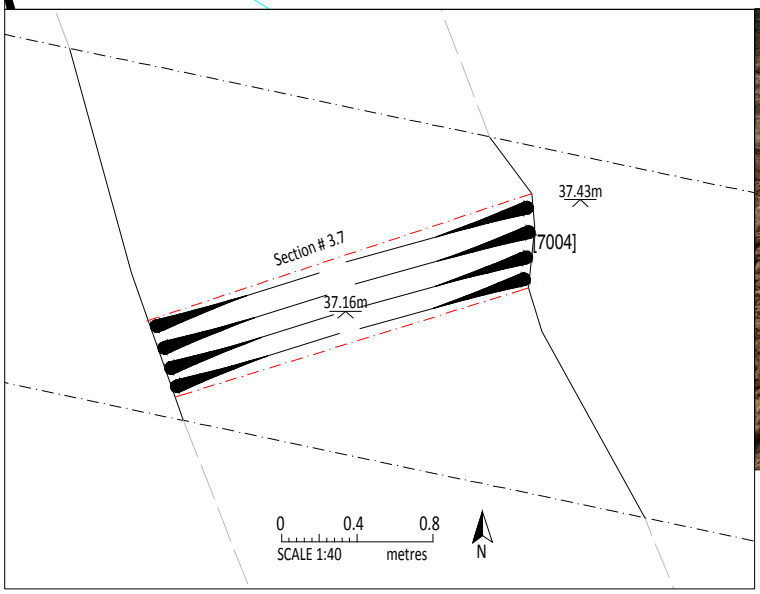
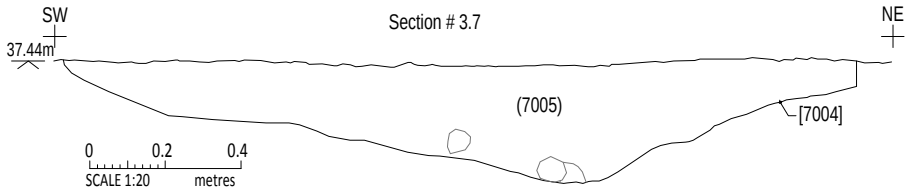


Figure 23: Trench 67





Looking north west at section of the ditch 7004



Looking south west at trench 70

Looking south at section of trench 70

Figure 24: Trench 70

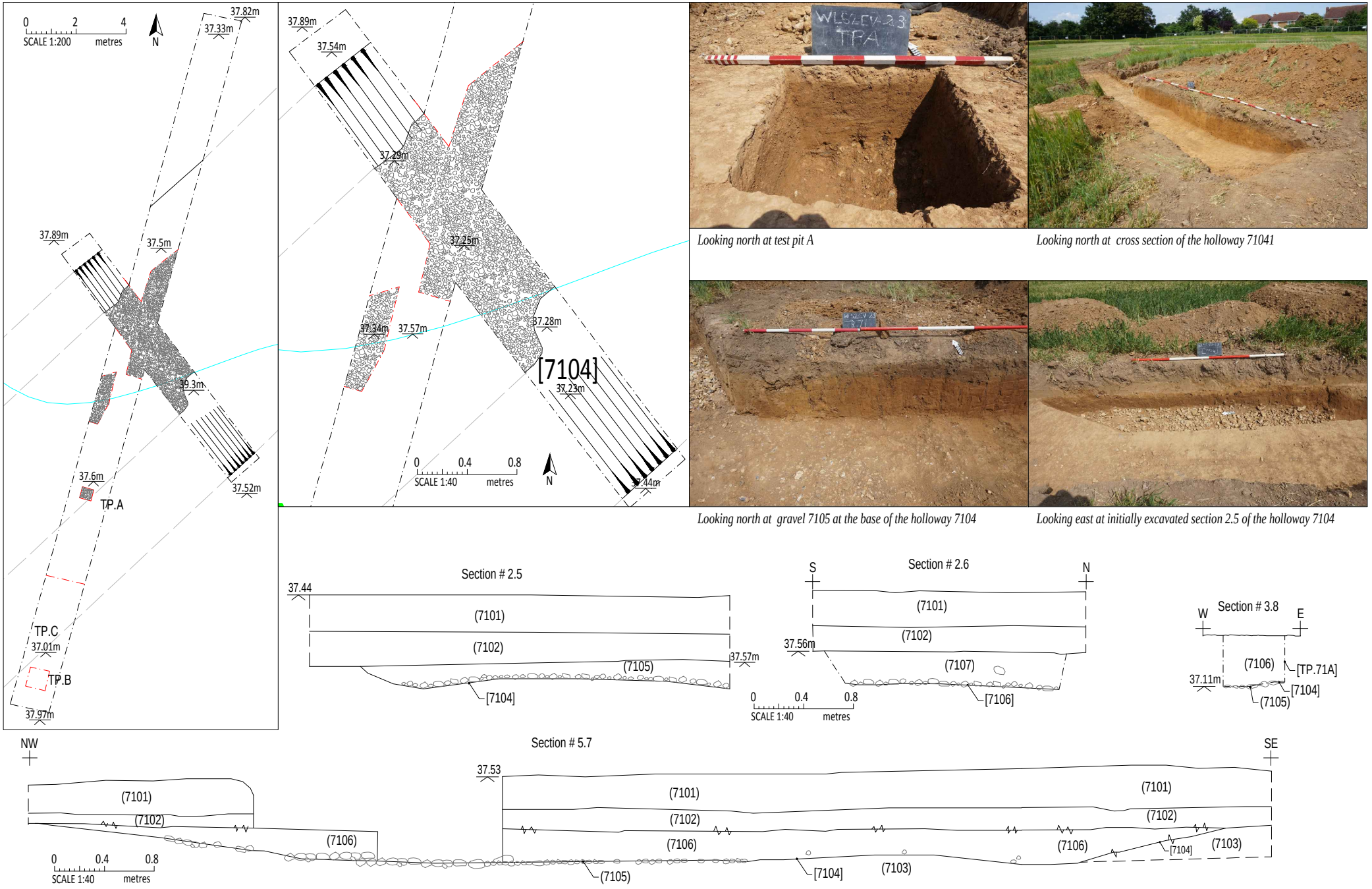
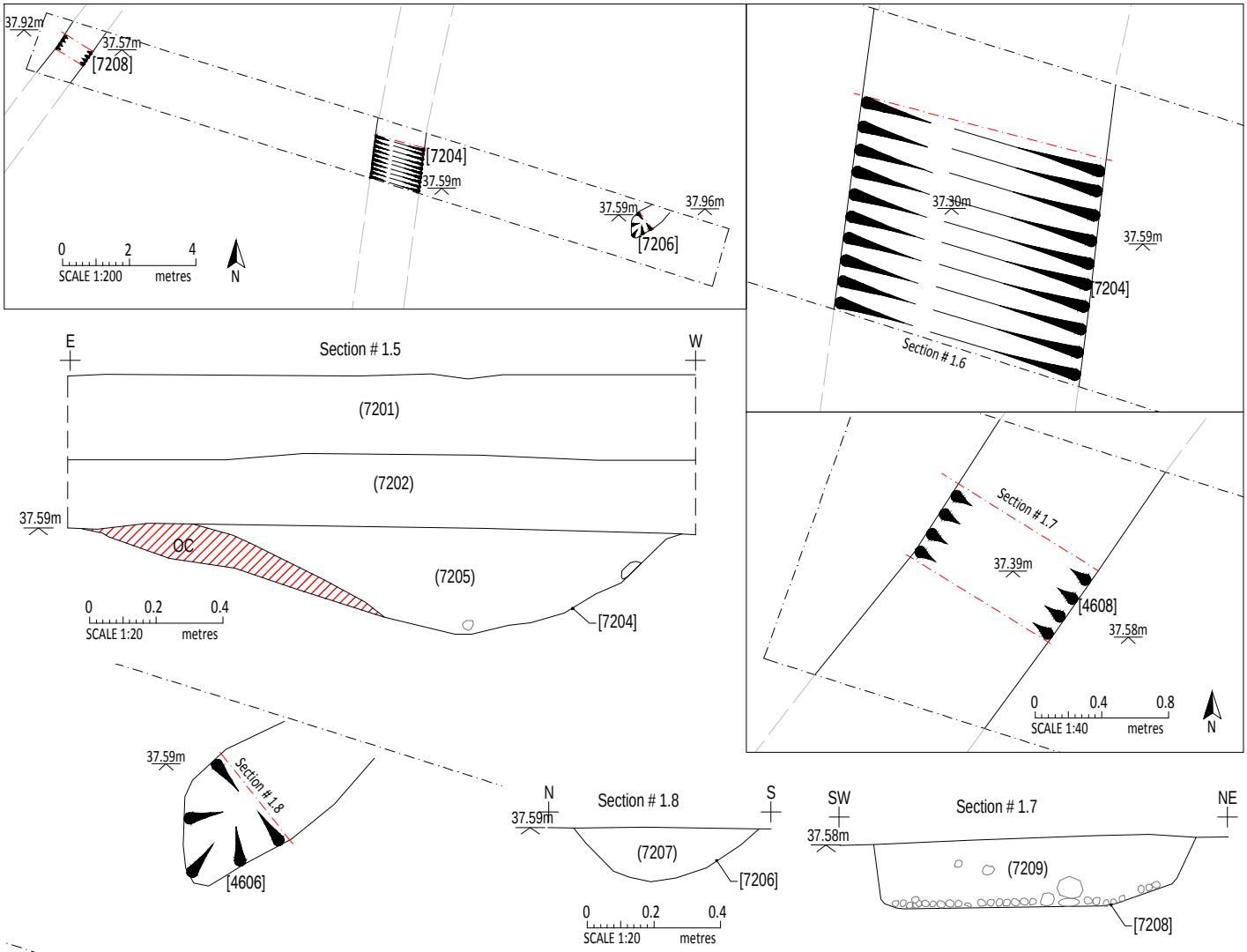


Figure 25: Trench 71



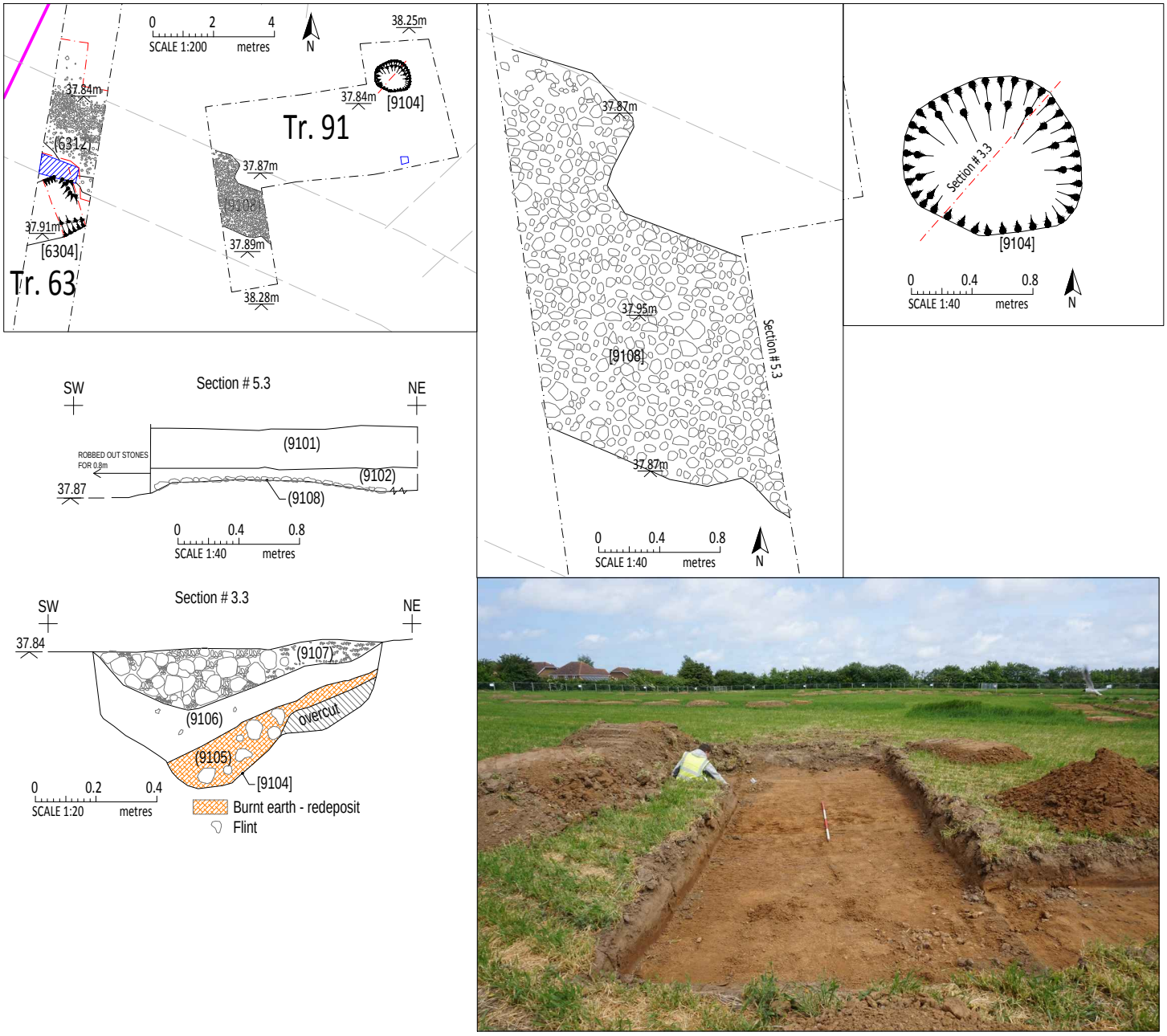
Looking north west at trench 72

Looking south at section of the ditch 7204

Looking north east at section of the ditch 7204

Looking north east at section of the ditch 7208

Figure 26: Trench 72

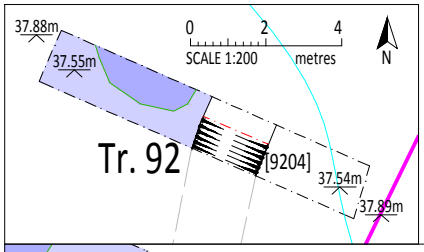


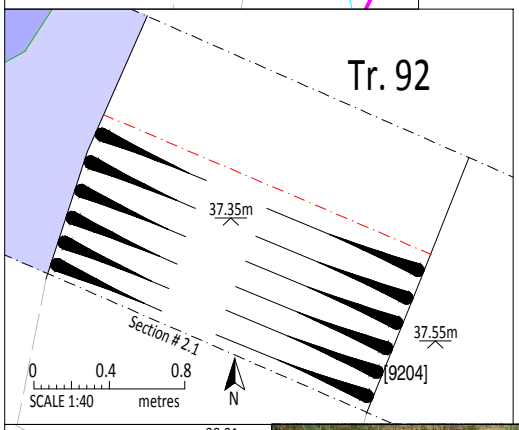
Looking east at trench 91

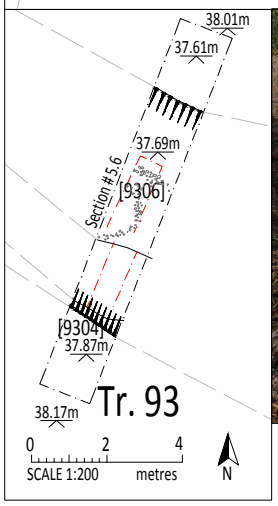
Looking north west at pit 9104

Looking east at trench 91

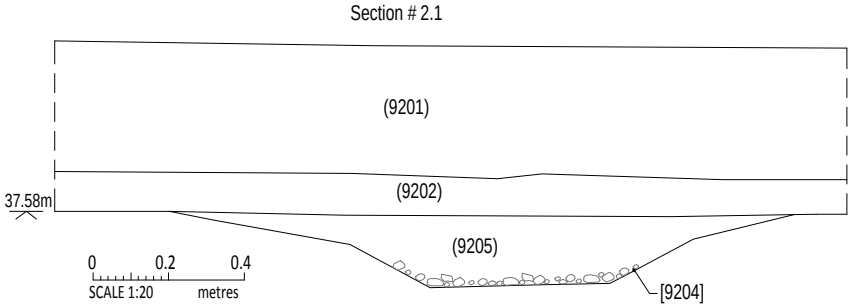
Figure 27: Trench 91







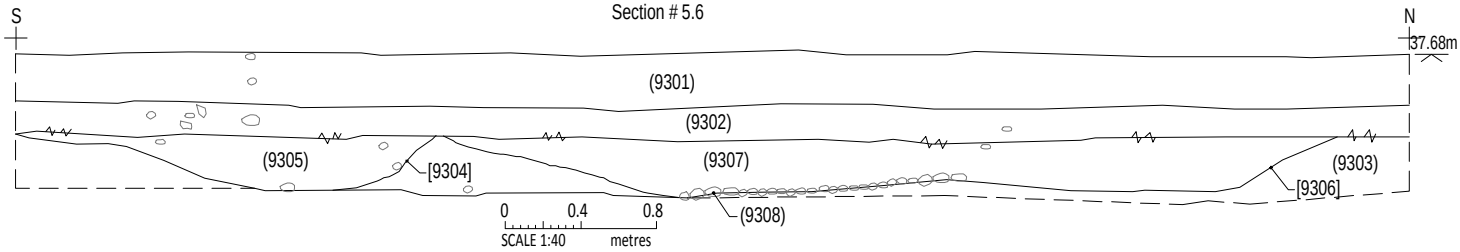
Looking south west at section of the ditch 9304

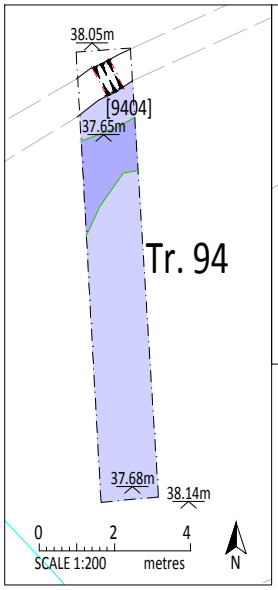


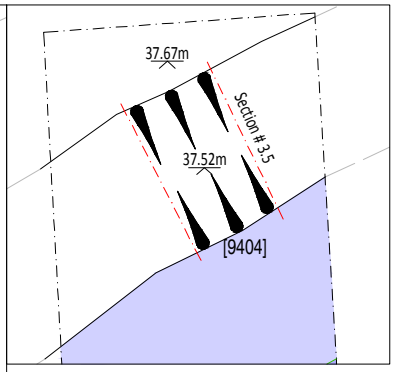
KEY:
- Gravel
- Gravelly silt
- Silt (Brickearth)

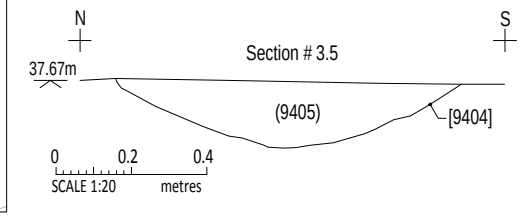
Looking south west at section of the ditch 9204

Looking north at section 5.6 of the ditch 9304 and holloway 9306









Looking east at section of the ditch 9404

Figure 28: Trench 92, 93, and 94

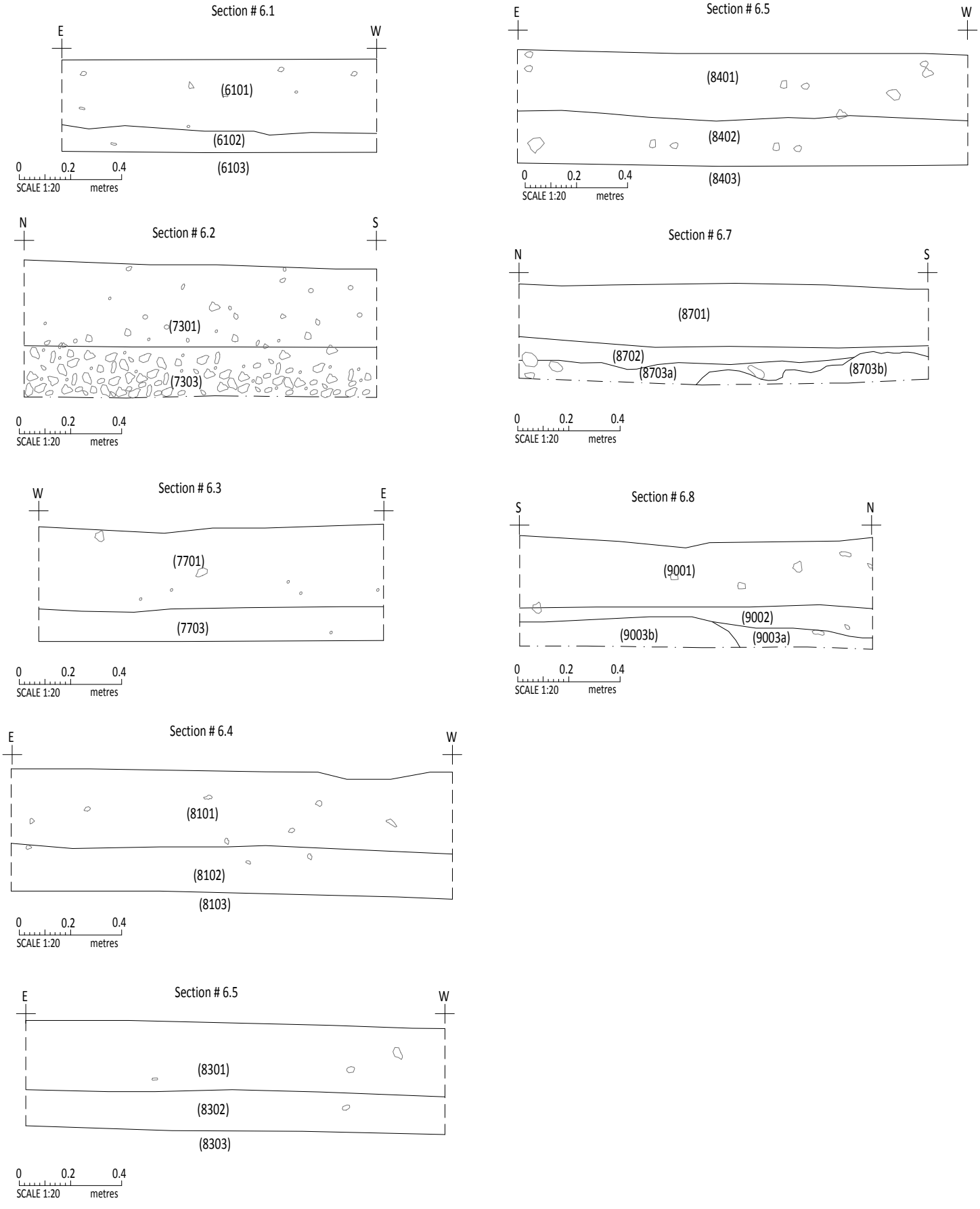


Figure 29: Representative sections