

STUBBINGTON BYPASS, HAMPSHIRE: AN ARCHAEOLOGICAL EVALUATION REPORT

Issue 1: Issued for Approval

Site Code: SBSH 18

Central NGR: SU 55608 04847

Local Planning Authority: Hampshire County Council

Planning Reference: P/15/0718/CC

Commissioning Client: Hampshire County Council

Written/Researched by: Gareth Howland

Project Manager: Thomas Hayes (ACIfA)

Contractor: Pre-Construct Archaeology Ltd (Winchester)
5 Red Deer Court
Elm Road
Winchester
Hampshire SO22 5LX

Tel: 01962 849 549
E-mail: thayes@pre-construct.com
Web: www.pre-construct.com

© Pre-Construct Archaeology Limited
December 2018

© The material contained herein is and remains the sole property of Pre-Construct Archaeology Limited and is not for publication to third parties without prior consent. Whilst every effort has been made to provide detailed and accurate information, Pre-Construct Archaeology Limited cannot be held responsible for errors or inaccuracies herein contained.

DOCUMENT VERIFICATION

Site Name: Stubbington Bypass, Hampshire

Type of project: Archaeological Evaluation

Report: R13489

Quality Control

Pre-Construct Archaeology Limited Project Code			K5584
	Name & Title	Signature	Date
Text Prepared by:	G Howland		30/11/2018
Graphics Prepared by:	M Steel		30/11/2018
Graphics Checked by:	M Roughley	MR	30/11/2018
Project Manager Sign-off:	T Hayes	TJH	06/12/2018

Revision No.	Date	Checked	Approved

CONTENTS

1	Non-Technical Summary	5
2	Introduction	6
3	Aim	10
4	Results	11
5	Archive Preparation and Deposition	19
6	Acknowledgements.....	20
7	References.....	21
	Appendix 1: Trench Index	22
	Appendix 2: Photographs.....	36
	Appendix 3: Environmental Archaeological Assessment Report.....	55
	Appendix 4: Lithic Assessment Report	60
	Appendix 5: Prehistoric and Roman pottery Assessment Report.....	63
	Appendix 6: Building Material Assessment Report.....	68
	Appendix 7: Stone Objects Assessment Report	76
	Appendix 8: Post Roman pottery Assessment Report.....	78
	Appendix 9: Metalwork Assessment Report	81
	Appendix 10: Industrial Residues Assessment Report.....	85
	Appendix 11: Animal Bone Assessment Report	87
	Appendix 12: Shell Assessment Report.....	88
	Appendix 13: Glass Assessment Report	89
	Appendix 14: Clay Pipe Assessment Report	92
	Appendix 15: OASIS Record.....	93
	Appendix 16: Geophysical Survey Report (SUMO)	96

LIST OF FIGURES

Figure 1: Site Location

Figure 2: Detailed Site Location

Figure 3: Plot 10 Trench Locations

Figure 4: Plot 11 Trench Locations

Figure 5: Plot 12 Trench Locations

Figure 6: Plot 14 Trench Locations

Figure 7a-e: Plot 15 Trench Locations

Figure 8: Plot 12 Magnetometry Data Overlain by Trenches and Features

Figure 9: Iron Age Features – Plans of Trenches 33 and 47

Figure 10: Iron Age Features – Plans of Trenches 92 and 120

Figure 11: Iron Age Sections

Figure 12: Romano-British Features – Plans of Trenches 38 and 39

Figure 13: Romano-British Features – Plans of Trenches 59 and 61

Figure 14: Romano-British Features – Plans of Trenches 88 and 90

Figure 15: Romano-British Features – Plans of Trenches 93 and 95

Figure 16: Romano-British Features – Plan of Trench 104

Figure 17: Romano-British Sections

Figure 18: Post-medieval Features – Plans of Trenches 16 and 45

Figure 19: Post-medieval Features – Plans of Trenches 3 and 114

Figure 20: Post-medieval Sections

Figure 21: Undated Features – Plans of Trenches 89 and 111

Figure 22: Undated Sections

Figure 23: Representative Sections

1 NON-TECHNICAL SUMMARY

Pre-Construct Ltd (PCA) was appointed by Hampshire County Council to undertake a geophysical survey and archaeological evaluation on the route of the proposed Stubbington Bypass. This report provides the results of the evaluation which comprised of 157, 25m x 2m trenches. Opened between the 6th of August – 19th of October 2018.

The evaluation has demonstrated that areas of the site contain archaeological remains dating to three different time periods; Iron Age, Romano-British and Post-Medieval. The Iron Age and Roman features identified are thought to represent evidence of a field systems. A small square, Romano-British enclosure of unknown purpose was also identified. The activity of these periods is split across two areas of the site. The first around Plot 12, and the second in the middle of the eastern part of Plot 15.

Post-Medieval features were identified and investigated but were not thought to represent a significant archaeological resource.

2 INTRODUCTION

2.1 Project Background

- 2.1.1 Pre-Construct Archaeology Ltd (PCA) was appointed by Hampshire County Council to undertake a geophysical survey and archaeological evaluation on the route of the proposed Stubbington Bypass, (NGR: SU 55608 04847) hereafter 'the Site' (**Figures 1 and 2**). The Site is the subject of a development proposal comprising the construction of a bypass road north-east of Stubbington, extending from Lichfield Road in the west, to Gosport Road in the south-east.
- 2.1.2 The geophysical survey and archaeological evaluation were required by the Local Planning Authority Hampshire County Council, acting on the advice of their archaeological advisor David Hopkins, Hampshire County Archaeology Officer (CAO) and in keeping with NPPF (2012) Section 12 and Local Plan Policy. The requirement has been secured by conditions 20, 21 and 22 of outline planning permission for the proposed development (Planning Ref P/15/0718/CC).
- 2.1.3 The geophysical survey was undertaken ahead of the archaeological evaluation by SUMO Geophysics Ltd. and is reported on separately (**Appendix 16**).
- 2.1.4 The Written Scheme of Investigation set out a methodology for the evaluation (PCA 2018). A total of 160 25m x 2m trenches were proposed and arranged over the site. A total of 157 of these trenches were excavated with the exceptions of trenches in Plot 17 (Trenches 158, 159 and 160) (**Figures 3-7**), which were not excavated as agreed with the CAO. A number of trenches were also moved from their intended location owing to the presence of underground services, paths and other factors. Trench 38 was the only trench moved to target geophysical anomalies
- 2.1.5 This document has been prepared in accordance with the Chartered Institute for Archaeologists standard and guidance for archaeological field evaluation (ClfA, 2014) and Management of Research Projects in the Historic Environment (English Heritage, 2015).

2.2 Location, Topography and Geology

- 2.2.1 The site, located in Fareham Borough, forms a route from Titchfield Road in the north to Gosport Road in the South (**Figure 2**). The route of the proposed road passes through several plots of land, bounded by Titchfield Road to the west and Gosport road to the south and passing through Ranvilles Lane and Peak lane in the centre of the proposed site. The majority of the site is comprised of arable fields.
- 2.2.2 The site has been divided into five plots of land. Plot 10, the western most plot, lies between Titchfield Road and Ranvilles Lane, Plot 11 lies to the east of Ranvilles Lane, Plot 12 straddles both sides of peak lane, Plot 14 lies to the south of Stroud Green Lane, Plot 15 lies either side of Newlands Farm, extending to the south past the Sewage Treatments Works and Crofton school, and Plot 17 lies directly north of Gosport Road.
- 2.2.3 The site is underlain by multiple natural geologies.
- Plot 10 is underlain by Wittering Formation - Sand, Silt and Clay, with no superficial geologies mapped

- Plot 11 is largely underlain by Wittering Formation - Sand, Silt and Clay, however there is a possibility that Whitecliffe Sand Member – Sand extends into the northeast corner of the plot, with no superficial geologies mapped
- Plot 12, on both sides of Peake Lane, and Plot 14 are underlain by Whitecliffe Sand Member – Sand, with superficial River Terrace Deposits mapped widely across the plot
- Plot 15, the largest individual plot, covers multiple geologies:
 - To the west of Newlands Farm the plot is underlain by Whitecliffe Sand Member – Sand, London Clay Formation – Clay, Silt and Sand, and Portsmouth Sand Member – Sand. Superficial River Terrace Deposits are mapped covering the area.
 - To the east of Newlands Farm and to the north of the sewage works the plot is underlain by Whitecliffe Sand Member – Sand, London Clay Formation – Clay, Silt and Sand, Portsmouth Sand Member – Sand, and Wittering Formation - Sand, Silt and Clay. Superficial River Terrace Deposits are mapped covering the area.
 - From the sewage works south the plot is underlain by Wittering Formation - Sand, Silt and Clay. Superficial River Terrace Deposits are mapped covering the area.
- Plot 17 is underlain by Wittering Formation - Sand, Silt and Clay. Superficial River Terrace Deposits are mapped covering the area

2.3 Archaeological and Historical Background

2.3.1 The archaeological and historical background to the Site was set out in detail in the Historic Environment Desk-based Assessment (WSP 2015), prepared in respect of the Site's proposed development, and is not repeated here. The following is the document's summary of its findings and recommendations:

'Archaeological Remains - In relation to buried archaeology, the assessment has outlined the potential for currently unknown archaeological remains to be present at the Site and examined the effects of existing and, as far as possible, proposed impacts upon that potential. This assessment is based on a desk-based study of existing information, and therefore cannot be considered a definitive statement on the presence or absence of archaeological deposits in any given area. The assessment does, however, identify the following potential within the Site boundary: a very low potential for the survival of archaeological remains of Roman and Early Medieval origin; a low potential for the survival of archaeological remains of Prehistoric and Modern origin; and low to medium potential for the survival of archaeological remains of Medieval and Post-Medieval origin. Whilst there is a very low potential for the discovery of buried archaeological remains of earlier periods, any such remains of Prehistoric, Roman or Early Medieval or Medieval date are likely to contribute to regional research objectives, whilst

any potential remains of Post-Medieval and Modern date are likely to contribute more to local research objectives.

Historic Buildings - A number of historic buildings have been identified in the surrounding area, including a mixture of designated and non-designated historic buildings at Foxbury, Carriston Cottage Grade II Listed Building, West Meon Grade II Listed Building and Hollam House Grade II Listed Building. During the construction and operational phases, the assessment has determined that the setting of these designated and non-designated historic buildings would be directly affected by the Proposed Development. No measures are proposed to reduce the negative effects on these heritage assets. The effects on these historic buildings range from slight to considerable changes in setting. It is not considered that the Proposed Development would cause substantial harm to the heritage value of these assets.

Historic Landscape Character - The Proposed Development will change the prevailing historic landscape character units within the Site and reduce the understanding of the remaining historic landscape within the Study Area to an extent that there will be an effect on the heritage value of these assets.

Recommendations - Consultation with Hampshire County Council Archaeologist and the client's archaeologist has outlined a programme of archaeological works, as follows:

- *Geophysical survey of the Site;*
- *Evaluation trenches; and*
- *Further archaeological mitigation works (if required) such as open excavation, informed by the results of the geophysical survey and evaluation trenches.*

These phases of archaeological works will be undertaken in accordance with the requirements of current national policies and guidance.'

2.3.2 A geophysical survey was undertaken by SUMO Geophysics Ltd. ahead of the excavation of archaeological evaluation trenches. This allowed a small number of trenches to be adjusted to target possible archaeological features. Owing to obstructions, limited areas of the site could not be surveyed. The full report for the geophysical survey is included in Appendix 16 and is not repeated here. The following is the summary of results for the geophysical survey:

A detailed magnetometer survey was conducted over approximately 14.6 ha of arable farmland around Stubbington, Hampshire. No definite archaeological anomalies have been identified. Linear features of possible archaeological provenance have been detected in one area, while linear trends of uncertain origin are present in several areas. Evidence of modern

ploughing is visible in the data, along with former field boundaries, land drains and underground services.

3 AIM

3.1 Archaeological Evaluation

- 3.1.1 The general aim of the archaeological evaluation was to determine the character, extent, date, condition and significance of archaeological remains that may survive within the Site, taking account of their potential to contain biological and palaeo-environmental remains.
- 3.1.2 To target any geophysical anomalies identified during the course of the geophysical survey, which ran in tandem to the archaeological evaluation.
- 3.1.3 This report on the results of the evaluation aims to provide a context for any archaeological resource that was identified and sufficient information so that the future treatment of any archaeological remains within the Site, in respect of the proposed development, may be determined in consultation with the archaeological advisor to the Local Planning Authority.

4 RESULTS

4.1 Introduction

- 4.1.1 The following presents a summary of the evaluation results based upon the Site archive which comprises of; a site diary, trench recording sheets, context sheets, site drawings and digital photographs.
- 4.1.2 A summary of recorded contexts is included in a Trench Index in **Appendix 1** and a selection of photographs of the trenches and trench sections in **Appendix 2**. The archive is held at PCA's Winchester office under the Site code **SBSH18** and will in due course be deposited with Hampshire Cultural Trust on behalf of Hampshire County Council.

4.2 Methodology

- 4.2.1 The archaeological evaluation was undertaken following the methodology that was detailed in the Written Scheme of Investigation (PCA 2018) which was approved on behalf of behalf of the Local Planning Authority in advance of the commencement of works.
- 4.2.2 A total of 160 25m x 2m trenches were proposed and arranged over the site. A total of 157 of these trenches were excavated, with the exceptions of trenches 158, 159 and 160 (Plot 17), which were not excavated, as agreed with the CAO (**Figures 3-7**). The locations of a number of trenches were adjusted owing to the presence of services, public footpaths and tracks. Trench 38 was the only trench moved to target a geophysical anomaly (**Figure 8**).

4.3 Summary of Deposition Sequence

- 4.3.1 The deposition sequence revealed within the trenches varied across the site (**Figure 23, Plates 4-12**).
- 4.3.2 Plots 10 and 11 revealed a natural geology of clay, with occasional deposits of natural gravel, seen at depths between 0.24m – 0.52m Below Ground Level (BGL). A subsoil was present in the trenches located in the lower lying parts of plot 10.
- 4.3.3 Plot 12 revealed a natural geology of sand, clay and occasional gravel, seen at depths between 0.26m – 0.45m BGL. A subsoil was only present in the eastern field.
- 4.3.4 Plot 14 revealed a natural geology of clay and occasional gravel, seen at depths between 0.31m – 0.41m BGL. A subsoil was present in the western trenches.
- 4.3.5 Plot 15 revealed a natural geology of sand, clay and occasional gravel, seen at depths between 0.26m – 0.70m BGL. A sub soil was seen throughout the plot.

4.4 Archaeological Features

4.5 Plot 10

- 4.5.1 Plot 10 contained trenches 1-26 (**Figure 3**). No archaeological features, deposits or finds were observed in trenches: 1, 2, 4-7, 9-15, 17-19 and 21-26.
- 4.5.2 Trench 20 was the only trench within Plot 10 that contained evidence of Iron Age activity. It contained linear feature [2004], a wide feature with a flat base, orientated NE-SW, it measured 0.9m wide and 0.32m deep. It contained 3 fills. A total of 2 sherds of Late Iron Age pottery were recovered from the middle fill.
- 4.5.3 Three other features were uncovered within Plot 10. The line of a NW-SE linear feature was uncovered in trenches 3 [304] and 8 [803]. It measured 2.5m wide and was between 0.37m - 0.5m deep (**Plate 32. Figures 19 and 20**). This feature appears to correspond with a field boundary that can be identified on the 1910 Ordnance Survey (OS) map. This boundary did not appear in the 1932 OS map.
- 4.5.4 Trench 8 also contained linear feature [805], orientated NE-SW. The feature measured 0.26m wide and 0.15m deep. No dateable material was recovered from the fill of the feature. The feature was straight and narrow in plan, with a shallow profile and irregular base, possibly indicating that it was the remains of an old hedgerow.
- 4.5.5 Trench 16 contained linear feature [1606] (**Plate 29, Figures 17 and 18**) orientated N-S. The feature measured 4m wide and 1.1m deep. It contained two fills, both containing sherds of Roman pottery, burnt flint and some fragments of struck flint. These finds are likely residual material that had been washed into the feature from the surrounding area, and therefore does not provide reliable dating for the feature. There was a much thicker layer of subsoil overlaying the feature. This feature is interpreted as an old water channel, which later became a drainage ditch/field boundary. It appears to match with a feature seen on the 1968 OS plan map but does not appear in the 1971-1983 OS map.

4.6 Plot 11

- 4.6.1 Plot 11 contained trenches 27-33 (**Figure 4**). No archaeological features, deposits or finds were observed in trenches: 28-29, 31 and 32.
- 4.6.2 Trench 33 contained 2 linear features [3303] and [3305]. These linear features comprised the only Iron Age activity within the plot. [3303] (**Plate 15. Figures 9+11**), was orientated NW-SE and measured 0.65m wide and 0.28m deep. It contained a single fill, which contained 3 sherds of Iron Age pottery. [3305] was undated and orientated NW-SE, measuring 1.6m wide and 0.37m deep. It contained a single fill, which contained a single fragment of burnt flint and CBM. Both [3303] and [3305] had similar profiles, ran parallel to each other and they both contained a similar fill, so it is likely that they are of a similar date.

4.6.3 Within Plot 11 three other features were also uncovered, all post-medieval in date. Trench 27 contained linear feature [2705]. It had a wide, concave profile, orientated E-W and measured 2m wide and 0.55m deep with 2 fills. Trench 30 contained linear feature [3003] which was also wide and concave in shape and was orientated NW-SE. This feature measured 1.4m wide and 0.47m deep, with a single fill. As it was similar in shape and composition of fills to [2705], it is likely that they are part of the same field system.

4.6.4 Trench 27 also contained linear feature [2703], orientated NE-SW and measuring 0.65m wide and 0.28m deep. It contained a single fill and was cut by [2705] on its SE edge. Although no dateable evidence was recovered it is likely that this feature is of a similar date to [2705].

4.7 Plot 12 (west)

4.7.1 Plot 12 (west) contained trenches 34-48 (**Figure 5**). No archaeological features, deposits or finds were observed in trenches: 34-37, 40-43 and 46.

4.7.2 The earliest features in the plot were uncovered at the eastern end of the area. Two linear features and a terminus were uncovered across two trenches. Trench 47 contained linear feature [4703] (**Plate 18. Figures 9+11**), which measured 0.82m wide and 0.2m deep. The linear feature was orientated NW-SE and contained a single fill. The fill contained 155 sherds of Iron Age pottery. The majority of which was recovered from a single 'dump' of material (**Plate 2**).

4.7.3 Trench 48 contained linear feature [4804] and terminus [4806]. [4804] was orientated NW-SE and measured 0.95m wide and 0.31m deep. [4806] was orientated NE-SW and measured 0.71m wide and 0.26m deep. Both contained a single fill and had a similar concave profile. Though no dateable evidence was recovered from either of these features, they are both similar to [4703] in profile and composition of fills and , therefore, are likely of a similar date.

4.7.4 Trench 38 contained linear features [3803] and [3806] (**Plates 19-21. Figures 12+17**), thought to form part of a Romano-British square enclosure (approximately 17m x 17m) seen in the geophysics results (**figure 8**). Both were orientated N-S. [3803] measured 1.86m wide and 0.43m deep and contained two fills, which contained a total of 38 sherds of pottery and 35 fragments of CBM (mostly fragments of oven lining material). [3806] measured 1.26m wide and 0.19m deep. With a single fill, containing 59 sherds of pottery.

4.7.5 Trench 39 contained two features believed to be Romano-British in date [3905] and [3907]. Linear feature [3907] (**Plate 22, Figure 12+17**), orientated NE-SW, measured 1.25m wide and 0.16m deep. It contained a single fill, which contained 18 sherds of pottery. Sub-circular pit [3905] had a diameter of 0.96m and a depth of 0.19m and contained a single fill, which contained 3 fragments of CBM.

4.7.6 Some post-medieval activity was also uncovered. The line of a continuing N-S linear feature was uncovered in trenches 44 [4405] and 45 [4504] (**Plate 31. Figures 18+20**). The linear feature measured 2.4m wide and 0.63m deep with both slots containing a single fill. The linear matches with a field boundary last seen on the 1868-1881 OS map, but no longer appears in the 1870 OS map.

4.7.7 Trench 39 and 44 contained pits [3903] and [4403]. Both were oblong in shape, orientated N-S, with similar measurements of 0.3m wide, 0.7m long and 0.08m deep. No dateable evidence was recovered from either of the pits. The long and shallow shape, and the N-S orientation suggests that both of these features are likely be marks left by more recent ploughing activities on the site.

4.8 Plot 12 (east)

4.8.1 Plot 12 (east) contained trenches 49-53 (**Figure 5**). No archaeological features, deposits or finds were revealed in trenches: 49, 50 and 53.

4.8.2 Only 2 features were uncovered in this plot. Trench 51 contained linear feature [5104] which was orientated NW-SE. Which measured 0.94m wide and 0.23m deep. With a single fill, which contained post-medieval material.

4.8.3 Trench 52 contained pit [5204] which was small and circular in shape. It measured 0.5m diameter and 0.2m deep. It contained a single fill containing charcoal flecks (not recovered). No dateable evidence was recovered, but the composition of the fill suggests that it may have been post-medieval in date.

4.9 Plot 14

4.9.1 Plot 14 contained trenches 54-58 (**Figure 6**). No archaeological features, deposits or finds were observed in any of these trenches.

4.10 Plot 15 (west)

4.10.1 Plot 15 (west) contained trenches 59-71 (**Figure 7a**). No archaeological features, deposits or finds were observed in trenches: 60 and 62-71.

4.10.2 Only two trenches contained archaeological features and both of the them were situated at the western end of the Plot 15. Both features date to the Romano-British period. Trench 59 contained a single linear feature [5903] (**Plate 23. Figures 13 and 17**), which was orientated NE-SW and measured 1.19m wide and 0.25m deep. It contained a single fill, which contained 126 sherds of Romano-British pottery, 2 quern stone fragments, 6 animal bones and 4 fragments of burnt clay. The majority the pottery and quern stone fragments were recovered from a single 'dump' of material (**Plate 3**).

4.10.3 Trench 61 contained a single linear feature [6103] (**Plate 24. Figures 13 and 17**). It had a narrow, almost V shaped profile. It was orientated E-W and it measured 0.8m wide and 0.44m deep. It contained a single fill, which contained four sherds of Romano-British pottery.

4.11 Plot 15 (east)

4.11.1 Plot 15 (east) contained trenches 72-157 (**Figures 7b-7e**). No archaeological features, deposits or finds were revealed in trenches: 72-74, 76-78, 80-87, 91, 94, 96, 97, 99, 101-103, 106, 109, 110, 112, 113, 115 -119, 121-136, 138-146, 148, 150-155 and 157.

- 4.11.2 Some evidence of Iron Age activity was uncovered within the middle of the plot, in trenches 92 and 93. Trench 92 contained linear feature [9204] (**Plate 13. Figure 10**), which was orientated NW-SE and measured 1.96m wide and 0.24m deep. It contained a single fill containing sherds of Iron Age pottery and burnt flint.
- 4.11.3 Trench 93 contained linear feature [9304], orientated NE-SW. It measured 1.77m wide and 0.27m deep, with a wide but shallow, concave profile. It contained a single fill, which contained a single sherd of Iron Age pottery.
- 4.11.4 Trench 120 contained two linear features [12004] and [12006] (**Plates 16,17. Figures 10 and 11**). [12004] is believed to be Iron Age in date and was orientated NE-SW. It measured 0.48m wide and 0.16m deep. It contained a single fill, which contained 7 sherds of Iron Age pottery. [12006] is an undated linear feature and cuts [12004]. It measured 0.34m wide and 0.07m deep, orientated NE-SW. It contained a single fill, with no finds. Both [12004] and [12006] contain similar fills and have a similar profile, are likely to be of a similar date.
- 4.11.5 Both trenches 107 and 108 contained similar undated linear features. Trench 107 contained linear feature [10704], orientated NW-SE. It measured 0.62m wide and 0.28m deep. Trench 108 contained two linear features, [10804] and [10806]. [10804] was orientated N-S and measured 0.21m wide and 0.2m deep. [10806] was orientated NE-SW and measured 0.97m wide and 0.39m deep. It appeared that [10804] cut [10806]. Although [10704], [10804] and [10808] contained no dateable evidence, the composition of their fills and profiles are consistent with features of Iron Age date found elsewhere on the site.
- 4.11.6 Seven trenches contained features that could be dated to the Romano-British period. Trenches 88, 90 and 95 all contained linear features that were relatively larger than others in the area. Trench 88 contained linear feature [8804] (**Plate 25. Figures 14 and 17**), orientated NW-SE. It measured 1.65m wide and 0.36m deep, with steep sides and a narrow base. It contained two fills, one of which contained 63 sherds of Romano-British pottery.
- 4.11.7 Trench 90 contained linear feature [9004] (**Plate 26. Figures 14 and 17**), orientated NE-SW. It measured 1.25m wide 0.35m deep, with steep sides and a flat base. It contained two fills, containing a total of 7 sherds of Romano-British pottery.
- 4.11.8 Trench 93 contained linear [9306] (**Plate 27. Figures 15 and 17**), orientated E-W. It measured 1.6m wide and 0.5m deep, with concave base. It contained a single fill, containing 5 sherds of Romano-British pottery and 1 fragment of CBM.
- 4.11.9 Trench 95 contained linear feature [9504] (**Plate 14. Figures 15 and 17**), orientated NW-SE, measuring 1.7m wide and 0.39m deep. Its fill contained 11 sherds of Romano-British pottery.
- 4.11.10 Trench 98 contained linear [9804] orientated NE-SW, measuring 0.74m wide and 0.2m deep, with a concave profile. It contained a single fill, containing 5 sherds of Romano-British pottery.
- 4.11.11 Trench 100 contained linear feature [10004], orientated NW-SE, measuring 0.6m wide and 0.14m deep. It was small with concave base and contained a single fill, which contained one sherd of Romano-British pottery.

- 4.11.12 Trench 104 contained linear feature [10404] (**Plate 28. Figures 16 and 17**), orientated NW-SE, measuring 1.08m wide and 0.31m deep, with a wide profile and a flat base. It contained a single fill, containing 14 sherds of Romano-British pottery.
- 4.11.13 A total of five Post-Medieval features were uncovered in trenches spread across the plot. All were linear features ([7906], [9007], [11404], [14904] and [10504]). These linears varied in size and shape but were all on average much larger than those dating to other periods. Linear [11404] was typical of these features (**Plate 30. Figures 19 and 20**). This feature was orientated NW-SE and measured 1.95m wide and 0.5m deep. [7906], [9007], [11404] and [14904] all match with field boundaries seen on historical OS mapping. [7906] and [9007] are last seen on the 1968 OS map. [11404] is last seen on the 1983 OS map. [14904] is last seen on the 1965 OS map.
- 4.11.14 Seven features uncovered within the plot contained no dateable evidence and were too dissimilar to others found in the area to provide a date. This includes four linear features ([7904], [9904], [13704] and [15604]), two pits ([11104] and [14703]) and a single posthole [8904]. The linears varied in size and shape. The smallest was [9904], orientated NW-SE and measured 0.58m wide and 0.1m deep. The largest was linear feature [15604] orientated N-S, curving to the west. It measured 1.5m wide and 0.21m deep.
- 4.11.15 Trench 89 contained posthole [8904] (**Plate 33. Figures 21 and 22**). It measured 0.7m in diameter and 0.3m deep. The fills contained evidence of a 'post sleeve'. The post, though removed, appears to have had a diameter of 0.11m and was placed at a 60-degree angle leaning towards the NW. No dateable evidence was recovered.
- 4.11.16 Trench 111 contained pit [11104] (**Plate 34. Figures 21 and 22**). A slightly irregular rectangular shape, with curved corners, measuring 1.53m long 1.30m wide and 0.2m deep. It contained two fills; the lower fill comprised burnt clay lining the edges of the feature, while the upper fill comprised a silt clay with a thin charcoal lens along the base. No dateable evidence was recovered.
- 4.11.17 Trench 147 contained pit [14703]. This feature was oval in shape, measuring 0.49m long, 0.31m wide and 0.16m deep. It contained a single fill, which contained small flecks of charcoal (not recovered). No dateable evidence was recovered

4.12 Discussion

- 4.12.1 The majority of archaeological features were identified within two areas of the site. The first area was in the north-western part of the site; mostly situated in Plot 12, with a scatter of features in the western end of plot 15, as well as in Plots 10 and 11 to the west. The second area is in the middle of Plot 15, on the eastern edge of the site.
- 4.12.2 The features found in Plot 12 included a number of linear features that appear to constitute part of an Iron Age field system in the eastern parts of the plot. The two examples of deliberately deposited material (mostly pottery) within two separate linear features ([4703] and [5903]) possible suggest that there may have been some form of settlement nearby, dating to the Late Iron Age or early Romano-British periods.

- 4.12.3 The possible remains of a small square Romano-British enclosure, measuring 17m by 17m, was also uncovered in Plot 12, Trench 38. The exact purpose of this feature is unknown, however an assemblage of Romano-British finds were recovered from the fills of the ditches, including a number of fragments of clay oven lining material, indicating some form of domestic or industrial activity in the vicinity.
- 4.12.4 The archaeological activity in Plot 15 comprised a number of linear features of a similar size and profile. These likely represent the remains of field systems, dating to the Iron Age and Romano-British periods. No obvious pattern could be identified amongst the linear features, but it is likely that they formed some form of a co-axial field system.
- 4.12.5 Both of these areas follow a similar phasing pattern. The earliest activity on the site is thought to reflect dispersed farming in the Late Iron Age, with activity continuing into the Romano-British period. The specific nature of this archaeological activity cannot be discerned from the evidence encountered.
- 4.12.6 A number of features dating to the Post-medieval period were identified. The majority of these were linear features, most of which correspond with field boundaries visible in 19th-20th century OS mapping.
- 4.12.7 The large linear feature, with water lain deposits, uncovered in Plot 10, trench 16, represents a feature of changing use throughout the post-medieval period:
- The earliest phase of the feature is as some form of water channel (likely a stream), feeding into a tributary of the River Meon. Though the feature is visible on the 1868-1881 OS map, it is hard to tell what form exactly it takes at this point, however on the 1898 OS map, it is marked with a direction of flow.
 - The channel then silted up, as seen with the archaeological deposits. A small amount of pottery was recovered from these deposits, however there is a high chance that these finds were washed in from the surrounding area or were residual. Therefore they do not provide a reliable date for the deposits.
 - The later phase of the feature was as field boundary/drainage ditch. On the 1968 map the feature still appears to be marked with a direction of flow, but it could be considered more of a boundary/drainage ditch than a stream by this point.
 - The final phase of the feature was its backfilling in the latter half of the 20th century. Little evidence of the ditch remains archaeologically. There were small chalk fragments and an increase in post-medieval artefacts in the subsoil above the channel, but it would appear that later ploughing of the area has likely removed any obvious earthworks that could have related to the feature. The ditch is last shown on the 1968 OS plan map, but no longer appears in the 1971-1983 OS map.

4.13 Conclusion

- 4.13.1 The evaluation demonstrated that areas of the site contain archaeological remains dating to three different periods: Iron Age, Romano-British and post-medieval.

- 4.13.2 Iron Age and Romano-British features uncovered during the evaluation are split across two areas of the site. The first around Plot 12 and the second in the middle of the eastern part of Plot 15.
- 4.13.3 The features in these two areas are predominately linear features, representing a multi-period field system. All of the Iron-Age features were found in close proximity to similar features of Romano-British date, suggesting that the site was in use during the transition from the late Iron Age into the early Romano-British period.
- 4.13.4 The linear features provide evidence for land use during these periods, but with little direct evidence of occupation or habitation found during the evaluation. Examples of one-off waste pottery dumps were observed within two of the linear features, suggesting that some form of settlement may be located nearby.
- 4.13.5 Within Plot 12 a small square Romano-British enclosure was identified. The purpose of the enclosure remains unknown with the limited evidence provided by the evaluation.
- 4.13.6 Post-medieval features were identified and investigated but were not thought to represent a significant archaeological resource.

5 ARCHIVE PREPARATION AND DEPOSITION

5.1 The Site Archive

5.1.1 The Site archive, to include all project records and cultural material produced by the project, will be prepared in accordance with 'Guidelines for the Preparation of Excavation Archives for Long-term Storage' (UKIC 1990) and the Institute for Archaeologists 'Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives' (CIfA 2014). On completion of the project PCA will arrange for the archive to be deposited with the Hampshire Cultural Trust on behalf of Hampshire County Council.

5.2 Copyright

5.2.1 The full copyright of the written/illustrative archive relating to the site will be retained by Pre-Construct Archaeology Ltd under the Copyright, Designs and Patents Act 1988 with all rights reserved. Hampshire County Council, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profitmaking, and conforms to the Copyright and Related Rights regulations 2003. Further distribution and uses of the report either in its entirety or part thereof in paper or electronic form is prohibited without the prior consent of Pre-Construct Archaeology Ltd.

5.2.2 The licence extends to the use of all documents arising from this project in all matters relating directly to the project, as well as for bona fide research purposes (which includes the Hampshire County Council Archaeology and Historic Building Record).

5.2.3 Pre-Construct Archaeology Ltd has made every effort to ensure the accuracy of the content of this report. However, Pre-Construct Archaeology Ltd cannot accept any liability in respect of, or resulting from, errors, inaccuracies or omissions this report contains.

6 ACKNOWLEDGEMENTS

Pre-Construct Archaeology is grateful to Hampshire County Council for commissioning the Evaluation. Thanks is due to Ready Power for their assistance on site. And to SUMO Geophysics Ltd. for carrying out the geophysical survey.

The evaluation was supervised by Gareth Howland, assisted by Bartlomiej Grden, Poppy Howland, Callum Paisnel and Oliver Farmer.

This report was prepared by Gareth Howland with Illustrations prepared by Mick Steel. The project was managed for PCA by Thomas Hayes.

7 REFERENCES

Chartered Institute for Archaeologists 2014. Standard and guidance for archaeological evaluation

Historic England 2015. Management of Research Projects in the Historic Environment

PCA 2018, 'Stubbington Bypass, Hampshire: Written Scheme of Investigation for an Archaeological Evaluation'

WSP 2015, 'Historic Environment Desk-Based Assessment: Stubbington Bypass, Stubbington'

Appendix 1: Trench Index

Trench	Context Number	Type	Interpretation	Depth (m) BGL	Finds
Tr 1	101	Layer	Turf/Topsoil	0 - 0.41	
	102	Layer	Natural	0.41 - 0.51+	
Tr 2	201	Layer	Turf/Topsoil	0 - 0.28	
	202	Layer	Natural	0.28 - 0.30+	
Tr 3	301	Layer	Turf/Topsoil	0 - 0.07	
	302	Layer	Sub-soil	0.07 - 0.25	
	303	Layer	Natural	0.25 - 0.32+	
	304	Cut	Cut of ditch	0.32 - 0.82	
	305	Fill	Backfill of ditch [304]	0.32 - 0.82	Pottery, CBM
Tr 4	401	Layer	Turf/Topsoil	0 - 0.09	
	402	Layer	Sub-soil	0.09 - 0.33	
	403	Layer	Natural	0.33 - 0.42+	
Tr 5	501	Layer	Turf/Topsoil	0 - 0.05	
	502	Layer	Sub-soil	0.05 - 0.24	
	503	Layer	Natural	0.24 - 0.38+	
Tr 6	601	Layer	Turf/Topsoil	0 - 0.32	
	602	Layer	Natural	0.32 - 0.36+	
Tr 7	701	Layer	Turf/Topsoil	0 - 0.32	
	702	Layer	Natural	0.32 - 0.40+	
Tr 8	801	Layer	Turf/Topsoil	0 - 0.32	
	802	Layer	Natural	0.32+	
	803	Cut	Cut of ditch	0.32 - 0.69	
	804	Fill	Fill of ditch [803]	0.32 - 0.69	CBM
	805	Cut	Undated ditch	0.32 - 0.47	
	806	Fill	Fill of ditch [805]	0.32 - 0.47	
Tr 9	901	Layer	Turf/Topsoil	0 - 0.28	
	902	Layer	Natural	0.28 - 0.41+	
Tr 10	1001	Layer	Turf/Topsoil	0 - 0.29	
	1002	Layer	Natural	0.29 - 0.32+	
Tr 11	1101	Layer	Turf/Topsoil	0 - 0.26	
	1102	Layer	Natural	0.26 - 0.31+	
Tr 12	1201	Layer	Turf/Topsoil	0 - 0.33	
	1202	Layer	Natural	0.33 - 0.43+	

Tr 13	1301	Layer	Turf/Topsoil	0 - 0.29	
	1302	Layer	Natural	0.29 - 0.41+	
Tr 14	1401	Layer	Turf/Topsoil	0 - 0.16	
	1402	Layer	Sub-soil	0.16 - 0.28	
	1403	Layer	Natural	0.28+	
Tr 15	1501	Layer	Turf/Topsoil	0 - 0.26	
	1502	Layer	Sub-soil	0.26 - 0.39	
	1503	Layer	Natural	0.39+	
Tr 16	1601	Layer	Turf/Topsoil	0 - 0.34	
	1602	Layer	Sub-soil	0.34 - 0.52	pottery
	1603	Layer	Natural	0.52 - 0.58+	
	1604	fill	upper fill of [1606]	1.10 - 1.80	pottery, burnt flint
	1605	fill	lower fill of [1606]	1.80 - 2.20	
	1606	cut	Water related layer, most likely an old stream/river	1.10-2.20	
Tr 17	1701	Layer	Turf/Topsoil	0 - 0.13	
	1702	Layer	Sub-soil	0.13 - 0.34	
	1703	Layer	Natural	0.34+	
Tr 18	1801	Layer	Turf/Topsoil	0 - 0.33	
	1802	Layer	Natural	0.33+	
Tr 19	1901	Layer	Turf/Topsoil	0- 0.25	
	1902	Layer	Natural	0.25 - 0.34+	
Tr 20	2001	Layer	Turf/Topsoil	0 - 0.12	
	2002	Layer	Sub-soil	0.12 - 0.36	
	2003	Layer	Natural	0.36+	
	2004	Cut	Cut of ditch	0.36 - 0.68	
	2005	Fill	Upper fill of ditch [2004]	0.36 - 0.48	
	2006	Fill	Second fill of ditch [2004]	0.48 - 0.56	pottery
	2007	Fill	Natural silting in ditch [2004]	0.56 - 0.68	
Tr 21	2101	Layer	Turf/Topsoil	0 - 0.31	
	2102	Layer	Natural	0.31+	
Tr 22	2201	Layer	Turf/Topsoil	0 - 0.31	
	2202	Layer	Natural	0.31 - 0.37+	
Tr 23	2301	Layer	Turf/Topsoil	0 - 0.15	
	2302	Layer	Sub-soil	0.15 - 0.35	
	2303	Layer	Natural	0.35+	
Tr 24	2401	Layer	Turf/Topsoil	0 - 0.12	
	2402	Layer	Sub-soil	0.12 - 0.30	
	2403	Layer	Natural	0.30+	
Tr 25	2501	Layer	Turf/Topsoil	0 - 0.14	

	2502	Layer	Sub-soil	0.14 - 0.35	
	2503	Layer	Natural	0.35+	
Tr 26	2601	Layer	Turf/Topsoil	0 - 0.12	
	2602	Layer	Sub-soil	0.12 - 0.30	
	2603	Layer	Natural	0.30+	
Tr 27	2701	Layer	Turf/Topsoil	0 - 0.30	
	2702	Layer	Natural	0.30+	
	2703	Cut	Cut of ditch	0.30 - 0.58	
	2704	Fill	Fill of ditch [2703]	0.30 - 0.58	
	2705	Cut	Cut of ditch	0.30 - 0.85	
	2706	Fill	Backfill of ditch [2705] (lower)	0.53 - 0.85	pottery, CBM, glass, animal bone, shell
Tr 28	2801	Layer	Turf/Topsoil	0 - 0.28	
	2802	Layer	Natural	0.28+	
Tr 29	2901	Layer	Turf/Topsoil	0 - 0.35	
	2902	Layer	Natural	0.35 - 0.40+	
Tr 30	3001	Layer	Turf/Topsoil	0 - 0.27	
	3002	Layer	Natural	0.27+	
	3003	Cut	Cut of ditch	0.27 - 0.74	
	3004	Fill	Backfill of ditch [3003]	0.27 - 0.74	pottery, CBM, glass, Cu alloy, NLS
Tr 31	3101	Layer	Turf/Topsoil	0 - 0.34	
	3102	Layer	Natural	0.34 - 0.39+	
Tr 32	3201	Layer	Turf/Topsoil	0 - 0.30	
	3202	Layer	Natural	0.30+	
Tr 33	3301	Layer	Turf/Topsoil	0 - 0.25	
	3302	Layer	Natural	0.25 - 0.31+	
	3303	Cut	Cut of ditch	0.31 - 0.59	
	3304	Fill	Fill of ditch [3303]	0.31 - 0.59	pottery
	3305	Cut	Cut of linear feature	0.31 - 0.68	pottery
	3306	Fill	Fill of linear feature [3305]	0.31 - 0.68	CBM, burnt flint
Tr 34	3401	Layer	Turf/Topsoil	0 - 0.26	
	3402	Layer	Natural	0.26+	
Tr 35	3501	Layer	Turf/Topsoil	0 - 0.28	
	3502	Layer	Natural	0.28+	
Tr 36	3601	Layer	Turf/Topsoil	0 - 0.40	
	3602	Layer	Natural	0.40+	
Tr 37	3701	Layer	Turf/Topsoil	0 - 0.35	

	3702	Layer	Natural	0.35+	
Tr 38	3801	Layer	Turf/Topsoil	0 - 0.33	
	3802	Layer	Natural	0.33+	
	3803	Cut	Cut of ditch	0.33 - 0.76	
	3804	Fill	Upper fill of ditch [3803], silting	0.33 - 0.56	pottery, CBM, Fe object
	3805	Fill	Lower fill of ditch [3803], silting	0.56 - 0.76	
	3806	Cut	Cut of ditch	0.33 - 0.52	
	3807	Fill	Silting of ditch [3806]	0.33 - 0.52	pottery
Tr 39	3901	Layer	Turf/Topsoil	0 - 0.45	
	3902	Layer	Natural	0.45+	
	3903	Cut	Cut of pit	0.45 - 0.53	
	3904	Fill	Backfill of pit [3903]	0.45 - 0.53	
	3905	Cut	Cut of pit	0.45 - 0.64	
	3906	Fill	Backfill of pit [3905]	0.45 - 0.64	CBM
	3907	Cut	Cut of ditch	0.45 - 0.61	
	3908	Fill	Fill of ditch [3907], silting	0.45 - 0.61	pottery
Tr 40	4001	Layer	Turf/Topsoil	0 - 0.38	
	4002	Layer	Natural	0.38+	
Tr 41	4101	Layer	Turf/Topsoil	0 - 0.28	
	4102	Layer	Natural	0.28+	
Tr 42	4201	Layer	Turf/Topsoil	0 - 0.40	
	4202	Layer	Natural	0.40+	
Tr 43	4301	Layer	Turf/Topsoil	0 - 0.42	
	4302	Layer	Natural	0.42+	
Tr 44	4401	Layer	Turf/Topsoil	0 - 0.36	
	4402	Layer	Natural	0.36+	
	4403	Cut	Cut of pit	0.36 - 0.44	
	4404	Fill	Backfill of pit [4403]	0.36 - 0.44	
	4405	Cut	Cut of ditch	0.36 - 0.99	
	4406	Fill	Backfill of ditch [4405]	0.36 - 0.99	pottery, glass
Tr 45	4501	Layer	Turf/Topsoil	0 - 0.28	
	4502	Layer	Natural	0.28+	
	4503	Cut	Cut of ditch	0.28 - 0.91	
	4504	Fill	Fill of ditch [4503]	0.28 - 0.91	
Tr 46	4601	Layer	Turf/Topsoil	0 - 0.32	
	4602	Layer	Natural	0.32 - 0.48+	
Tr 47	4701	Layer	Turf/Topsoil	0 - 0.33	
	4702	Layer	Natural	0.33+	
	4703	Cut	Cut of ditch	0.33 - 0.56	
	4704	Fill	Fill of ditch [4703], silting	0.33 - 0.56	pottery
Tr 48	4801	Layer	Turf/Topsoil	0 - 0.27	

	4802	Layer	Sub-soil	0.27 - 0.32	
	4803	Layer	Natural	0.32+	
	4804	Cut	Cut of ditch	0.32 - 0.63	
	4805	Fill	Silting of ditch [4805]	0.32 - 0.63	
	4806	Cut	Cut of ditch terminus	0.32 - 0.58	
	4807	Fill	Fill of ditch terminus [4806]	0.32 - 0.58	
Tr 49	4901	Layer	Turf/Topsoil	0 - 0.08	
	4902	Layer	Sub-soil	0.08 - 0.28	
	4903	Layer	Natural	0.28 - 0.45	
Tr 50	5001	Layer	Turf/Topsoil	0 - 0.08	
	5002	Layer	Sub-soil	0.08 - 0.30	
	5003	Layer	Natural	0.30 - 0.38	
Tr 51	5101	Layer	Turf/Topsoil	0 - 0.06	
	5102	Layer	Sub-soil	0.06 - 0.36	
	5103	Layer	Natural	0.36 - 0.40+	
	5104	Cut	Cut of ditch	0.36 - 0.59	
	5105	Fill	Backfill of [5104]	0.36 - 0.59	pottery
Tr 52	5201	Layer	Turf/Topsoil	0 - 0.25	
	5202	Layer	Sub-soil	0.25 - 0.33	
	5203	Layer	Natural	0.33+	
	5204	Cut	Cut of pit	0.33 - 0.45	
	5205	Fill	Backfill of pit [5204]	0.33 - 0.45	
Tr 53	5301	Layer	Turf/Topsoil	0 - 0.15	
	5302	Layer	Sub-soil	0.15 - 0.36	
	5303	Layer	Natural	0.36 - 0.40+	
Tr 54	5401	Layer	Turf/Topsoil	0 - 0.24	
	5402	Layer	Sub-soil	0.24 - 0.41	
	5403	Layer	Natural	0.41+	
Tr 55	5501	Layer	Turf/Topsoil	0 - 0.18	
	5502	Layer	Sub-soil	0.18 - 0.37	
	5503	Layer	Natural	0.37+	
Tr 56	5601	Layer	Turf/Topsoil	0 - 0.33	
	5602	Layer	Natural	0.33+	
Tr 57	5701	Layer	Turf/Topsoil	0 - 0.33	
	5702	Layer	Natural	0.33 - 0.48+	
Tr 58	5801	Layer	Turf/Topsoil	0 - 0.31	
	5802	Layer	Natural	0.31+	
Tr 59	5901	Layer	Turf/Topsoil	0 - 0.34	
	5902	Layer	Natural	0.34+	
	5903	Cut	Cut of ditch	0.34 - 0.59	

	5904	Fill	Backfill of ditch [5903]	0.34 - 0.59	Pottery, burnt clay, animal bone, quern stone
Tr 60	6001	Layer	Turf/Topsoil	0 - 0.35	
	6002	Layer	Natural	0.35+	
Tr 61	6101	Layer	Turf/Topsoil	0 - 0.34	
	6102	Layer	Natural	0.34 - 0.45+	
	6103	Cut	Cut of ditch	0.34 - 0.78	
	6104	Fill	Silting of ditch [6103]	0.34 - 0.78	pottery
Tr 62	6201	Layer	Turf/Topsoil	0 - 0.47	
	6202	Layer	Natural	0.47 - 0.57	
Tr 63	6301	Layer	Turf/Topsoil	0 - 0.02	
	6302	Layer	Sub-soil	0.02 - 0.31	
	6303	Layer	Natural	0.31 - 0.35+	
Tr 64	6401	Layer	Turf/Topsoil	0 - 0.08	
	6402	Layer	Sub-soil	0.08 - 0.29	
	6403	Layer	Natural	0.29 - 0.38+	
Tr 65	6501	Layer	Turf/Topsoil	0 - 0.05	
	6502	Layer	Sub-soil	0.05 - 0.39	
	6503	Layer	Natural	0.39 - 0.49+	
Tr 66	6601	Layer	Turf/Topsoil	0 - 0.37	
	6602	Layer	Natural	0.37+	
Tr 67	6701	Layer	Turf/Topsoil	0 - 0.04	
	6702	Layer	Sub-soil	0.04 - 0.35	
	6703	Layer	Natural	0.35 - 0.49+	
Tr 68	6801	Layer	Turf/Topsoil	0 - 0.06	
	6802	Layer	Sub-soil	0.06 - 0.36	
	6803	Layer	Natural	0.36 - 0.46+	
Tr 69	6901	Layer	Turf/Topsoil	0 - 0.10	
	6902	Layer	Sub-soil	0.10 - 0.37	
	6903	Layer	Natural	0.37+	
Tr 70	7001	Layer	Turf/Topsoil	0 - 0.30	
	7002	Layer	Natural	0.30 - 0.41+	
Tr 71	7101	Layer	Turf/Topsoil	0 - 0.28	
	7102	Layer	Sub-soil	0.28 - 0.42	
	7103	Layer	Natural	0.42 - 0.50+	
Tr 72	7201	Layer	Turf/Topsoil	0 - 0.12	
	7202	Layer	Sub-soil	0.12 - 0.30	

	7203	Layer	Natural	0.30+	
Tr 73	7301	Layer	Turf/Topsoil	0 - 0.23	
	7302	Layer	Sub-soil	0.23 - 0.40	
	7303	Layer	Natural	0.40 - 0.49+	
Tr 74	7401	Layer	Turf/Topsoil	0 - 0.26	
	7402	Layer	Sub-soil	0.26 - 0.47	
	7403	Layer	Natural	0.47 - 0.60+	
Tr 75	7501	Layer	Turf/Topsoil	0 - 0.19	
	7502	Layer	Sub-soil	0.19 - 0.41	
	7503	Layer	Natural	0.41+	
	7504	Cut	Cut of pit	0.41 - 1.02	
	7505	Fill	Fill of pit [7504]	0.41 - 1.02	
	7506	Cut	Cut of pit	0.41 - 0.86	
	7507	Fill	Silting of pit [7506]	0.41 - 0.86	
	7508	Cut	Cut of pit	0.41 - 0.92	
	7509	Fill	Fill of pit [7508]	0.41 - 0.92	
Tr 76	7601	Layer	Turf/Topsoil	0 - 0.34	
	7602	Layer	Sub-soil	0.34 - 0.39	
	7603	Layer	Natural	0.39 - 0.55+	
Tr 77	7701	Layer	Turf/Topsoil	0 - 0.20	
	7702	Layer	Sub-soil	0.20 - 0.31	
	7703	Layer	Natural	0.31 - 0.54+	
Tr 78	7801	Layer	Turf/Topsoil	0 - 0.31	
	7802	Layer	Sub-soil	0.31 - 0.40	
	7803	Layer	Natural	0.40 - 0.53	
Tr 79	7901	Layer	Turf/Topsoil	0 - 0.24	
	7902	Layer	Sub-soil	0.24 - 0.40	
	7903	Layer	Natural	0.40 - 0.50+	
	7904	Cut	Cut ditch	0.50 - 0.68	
	7905	Fill	Backfill of ditch [7904]	0.50 - 0.68	
	7906	Cut	Cut of ditch	0.50 - 1.08	
	7907	Fill	Upper fill of ditch [7906], backfill	0.50 - 0.77	
	7908	Fill	Lower fill of ditch [7906], backfill	0.77 - 1.08	pottery, glass, Fe nail
Tr 80	8001	Layer	Turf/Topsoil	0 - 0.23	
	8002	Layer	Sub-soil	0.23 - 0.31	
	8003	Layer	Natural	0.31+	
Tr 81	8101	Layer	Turf/Topsoil	0 - 0.28	
	8102	Layer	Sub-soil	0.28 - 0.35	
	8103	Layer	Natural	0.35+	

Tr 82	8201	Layer	Turf/Topsoil	0 - 0.31	
	8202	Layer	Sub-soil	0.31 - 0.36	
	8203	Layer	Natural	0.36+	
Tr 83	8301	Layer	Turf/Topsoil	0 - 0.23	
	8302	Layer	Sub-soil	0.23 - 0.31	
	8303	Layer	Natural	0.31+	
Tr 84	8401	Layer	Turf/Topsoil	0 - 0.24	
	8402	Layer	Sub-soil	0.24 - 0.32	
	8403	Layer	Natural	0.32+	
Tr 85	8501	Layer	Turf/Topsoil	0 - 0.12	
	8502	Layer	Sub-soil	0.12 - 0.36	
	8503	Layer	Natural	0.36+	
Tr 86	8601	Layer	Turf/Topsoil	0 - 0.12	
	8602	Layer	Sub-soil	0.12 - 0.34	
	8603	Layer	Natural	0.34+	
Tr 87	8701	Layer	Turf/Topsoil	0 - 0.12	
	8702	Layer	Sub-soil	0.12 - 0.35	
	8703	Layer	Natural	0.35+	
Tr 88	8801	Layer	Turf/Topsoil	0 - 0.29	
	8802	Layer	Sub-soil	0.29 - 0.36	
	8803	Layer	Natural	0.36+	
	8804	Cut	Cut of ditch	0.36 - 0.72	
	8805	Fill	Upper fill of ditch [8804], backfill	0.36 - 0.58	pottery
	8806	Fill	Lower fill of ditch [8804], silting	0.58 - 0.72	
Tr 89	8901	Layer	Turf/Topsoil	0 - 0.08	
	8902	Layer	Sub-soil	0.08 - 0.34	
	8903	Layer	Natural	0.34+	
	8904	Cut	Cut of pit	0.34 - 0.64	
	8905	Fill	Silting of pit [8904]	0.34 - 0.64	
	8906	Cut	Undated stakehole	0.34 - 0.64	
	8907	Fill	Fill of stakehole [8906]	0.34 - 0.64	
	8908	Fill	Fill of stakehole [8906]	0.34 - 0.58	
Tr 90	9001	Layer	Turf/Topsoil	0 - 0.27	
	9002	Layer	Sub-soil	0.27 - 0.39	
	9003	Layer	Natural	0.39+	
	9004	Cut	Cut of ditch	0.39 - 0.74	
	9005	Fill	Upper fill of ditch [9004], silting	0.39 - 0.68	
	9006	Fill	Lower fill of ditch [9004], silting	0.68 - 0.74	
	9007	Cut	Cut of ditch	0.22 - 0.98+	
	9008	Fill	Lower fill of ditch [9007], backfill	0.85 - 0.98+	

	9009	Fill	Fill of ditch [9007], backfill, re-deposited natural	0.45 - 0.85	
	9010	Fill	Upper fill of ditch [9007], backfill	0.22 - 0.45	Fe nail
Tr 91	9101	Layer	Turf/Topsoil	0 - 0.11	
	9102	Layer	Sub-soil	0.11 - 0.37	
	9103	Layer	Natural	0.37 - 0.47+	
Tr 92	9201	Layer	Turf/Topsoil	0 - 0.15	
	9202	Layer	Sub-soil	0.15 - 0.37	
	9203	Layer	Natural	0.37 - 0.50+	
	9204	Cut	Cut of ditch	0.37 - 0.61	
	9205	Fill	Backfil of ditch [9204]	0.37 - 0.61	pottery, burnt flint
Tr 93	9301	Layer	Turf/Topsoil	0 - 0.14	
	9302	Layer	Sub-soil	0.14 - 0.33	
	9303	Layer	Natural	0.33+	
	9304	Cut	Undated ditch	0.33 - 0.60	
	9305	Fill	Fill of ditch [9304]	0.33 - 0.60	pottery, CBM
	9306	Cut	Cut of ditch	0.33 - 0.73	
	9307	Fill	Fill of ditch [9306]	0.33 - 0.73	pottery
Tr 94	9401	Layer	Turf/Topsoil	0 - 0.11	
	9402	Layer	Sub-soil	0.11 - 0.30	
	9403	Layer	Natural	0.30+	
Tr 95	9501	Layer	Turf/Topsoil	0 - 0.03	
	9502	Layer	Sub-soil	0.03 - 0.41	
	9503	Layer	Natural	0.41 - 0.48+	
	9504	Cut	Cut of ditch	0.41 - 0.76	
	9505	Fill	Silting of ditch [9504]	0.41 - 0.76	pottery, burnt flint, glass, Fe object
	9506	Fill	Backfill of ditch [9504]	0.41 - 0.76	
Tr 96	9601	Layer	Turf/Topsoil	0 - 0.16	
	9602	Layer	Sub-soil	0.16 - 0.36	
	9603	Layer	Natural	0.36 - 0.45+	
Tr 97	9701	Layer	Turf/Topsoil	0 - 0.14	
	9702	Layer	Sub-soil	0.14 - 0.38	
	9703	Layer	Natural	0.38+	
Tr 98	9801	Layer	Turf/Topsoil	0 - 0.30	
	9802	Layer	Sub-soil	0.30 - 0.35	
	9803	Layer	Natural	0.35+	
	9804	Cut	Cut of ditch	0.35 - 0.55	
	9805	Fill	Silting of ditch [9804]	0.35 - 0.55	pottery

Tr 99	9901	Layer	Turf/Topsoil	0 - 0.05	
	9902	Layer	Sub-soil	0.05 - 0.32	
	9903	Layer	Natural	0.32 - 0.38	
	9904	Cut	Cut of ditch	0.32 - 0.42	
	9905	Fill	Backfill of ditch [9904]	0.32 - 0.42	
Tr 100	10001	Layer	Turf/Topsoil	0 - 0.19	
	10002	Layer	Sub-soil	0.19 - 0.38	
	10003	Layer	Natural	0.38+	
	10004	Cut	Cut of ditch	0.38 - 0.52	
	10005	Fill	Fill of ditch [10004]	0.38 - 0.52	pottery
Tr 101	10101	Layer	Turf/Topsoil	0 - 0.18	
	10102	Layer	Sub-soil	0.18 - 0.36	
	10103	Layer	Natural	0.36 - 0.42+	
Tr 102	10201	Layer	Turf/Topsoil	0 - 0.17	
	10202	Layer	Sub-soil	0.17 - 0.48	
	10203	Layer	Natural	0.48 - 0.55+	
Tr 103	10301	Layer	Turf/Topsoil	0 - 0.28	
	10302	Layer	Sub-soil	0.28 - 0.39	
	10303	Layer	Natural	0.39+	
Tr 104	10401	Layer	Turf/Topsoil	0 - 0.13	
	10402	Layer	Sub-soil	0.13 - 0.31	
	10403	Layer	Natural	0.31 - 0.43+	
	10404	Cut	Cut of ditch	0.43 - 0.74	
	10405	Fill	Silting of ditch [10404]	0.43 - 0.74	pottery
Tr 105	10501	Layer	Turf/Topsoil	0 - 0.10	
	10502	Layer	Sub-soil	0.10 - 0.36	
	10503	Layer	Natural	0.36+	
	10504	Cut	Cut of ditch	0.36 - 1.01	
	10505	Fill	Lower fill of ditch [10504], silting	0.57 - 1.01	pottery, CBM, glass, Clay pipe, slag
	10506	Fill	Upper fill of ditch [10504], backfill	0.36 - 0.57	
Tr 106	10601	Layer	Turf/Topsoil	0 - 0.32	
	10602	Layer	Sub-soil	0.32 - 0.38	
	10603	Layer	Natural	0.38+	
Tr 107	10701	Layer	Turf/Topsoil	0 - 0.11	
	10702	Layer	Sub-soil	0.11 - 0.40	
	10703	Layer	Natural	0.40 +	
	10704	Cut	Cut of ditch	0.40 - 0.68	
	10705	Fill	Fill of ditch [10704]	0.40 - 0.68	
Tr 108	10801	Layer	Turf/Topsoil	0 - 0.12	

	10802	Layer	Sub-soil	0.12 - 0.34	
	10803	Layer	Natural	0.34+	
	10804	Cut	Cut of ditch	0.34 - 0.54	
	10805	Fill	Fill of ditch 10804	0.34 - 0.54	
	10806	Cut	Cut of ditch	0.34 - 0.73	
	10807	Fill	Upper fill of ditch [10806]	0.34 - 0.51	
	10808	Fill	Lower fill of ditch [10806]	0.51 - 0.73	
Tr 109	10901	Layer	Turf/Topsoil	0 - 0.09	
	10902	Layer	Sub-soil	0.09 - 0.36	
	10903	Layer	Natural	0.36 - 0.43+	
Tr 110	11001	Layer	Turf/Topsoil	0 - 0.13	
	11002	Layer	Sub-soil	0.13 - 0.26	
	11003	Layer	Natural	0.26 - 0.36+	
Tr 111	11101	Layer	Turf/Topsoil	0 - 0.25	
	11102	Layer	Sub-soil	0.25 - 0.33	
	11103	Layer	Natural	0.33+	
	11104	Cut	Cut of pit	0.33 - 0.53	
	11105	Fill	Silting of pit [11104]	0.33 - 0.53	
	11106	Fill	Burnt clay on the sides of pit [11104]	0.33 - 0.53	
Tr 112	11201	Layer	Turf/Topsoil	0 - 0.04	
	11202	Layer	Sub-soil	0.04 - 0.32	
	11203	Layer	Natural	0.32 - 0.42	
Tr 113	11301	Layer	Turf/Topsoil	0 - 0.36	
	11302	Layer	Natural	0.36+	
Tr 114	11401	Layer	Turf/Topsoil	0 - 0.27	
	11402	Layer	Sub-soil	0.27 - 0.34	
	11403	Layer	Natural	0.34+	
	11404	Cut	Cut of ditch	0.34 - 0.84	
	11405	Fill	Backfill of ditch [11404]	0.34 - 0.84	pottery, CBM, glass, Fe nail
	11406	Cut	Modern ditch/land drain	0.34 - 0.84+	
	11407	Fill	Backfill of ditch [11406]	0.34 - 0.84+	
Tr 115	11501	Layer	Turf/Topsoil	0 - 0.05	
	11502	Layer	Sub-soil	0.05 - 0.34	
	11503	Layer	Natural	0.34 - 0.40+	
Tr 116	11601	Layer	Turf/Topsoil	0 - 0.14	
	11602	Layer	Sub-soil	0.14 - 0.42	
	11603	Layer	Natural	0.42 - 0.52+	
Tr 117	11701	Layer	Turf/Topsoil	0 - 0.12	

	11702	Layer	Sub-soil	0.12 - 0.37	
	11703	Layer	Natural	0.37+	
Tr 118	11801	Layer	Turf/Topsoil	0 - 0.15	
	11802	Layer	Sub-soil	0.15 - 0.35	
	11803	Layer	Natural	0.35+	
Tr 119	11901	Layer	Turf/Topsoil	0 - 0.29	
	11902	Layer	Natural	0.29 - 0.47+	
Tr 120	12001	Layer	Turf/Topsoil	0 - 0.07	
	12002	Layer	Sub-soil	0.07 - 0.45	
	12003	Layer	Natural	0.45+	
	12004	Cut	Cut of ditch	0.45 - 0.61	
	12005	Fill	Fill of ditch [12004]	0.45 - 0.61	pottery
	12006	Cut	Cut of ditch	0.45 - 0.51	
	12007	Fill	Backfill of ditch [12006]	0.45 - 0.51	
Tr 121	12101	Layer	Turf/Topsoil	0 - 0.29	
	12102	Layer	Natural	0.29 - 0.38+	
Tr 122	12201	Layer	Turf/Topsoil	0 - 0.10	
	12202	Layer	Sub-soil	0.10 - 0.39	
	12203	Layer	Natural	0.39 - 0.49+	
Tr 123	12301	Layer	Turf/Topsoil	0 - 0.06	
	12302	Layer	Sub-soil	0.06 - 0.37	
	12303	Layer	Natural	0.37+	
Tr 124	12401	Layer	Turf/Topsoil	0 - 0.32	
	12402	Layer	Sub-soil	0.32 - 0.45+	
Tr 125	12501	Layer	Turf/Topsoil	0 - 0.26	
	12502	Layer	Natural	0.26 - 0.35+	
Tr 126	12601	Layer	Turf/Topsoil	0 - 0.15	
	12602	Layer	Sub-soil	0.15 - 0.35	
	12603	Layer	Natural	0.35+	
Tr 127	12701	Layer	Turf/Topsoil	0 - 0.41	
	12702	Layer	Natural	0.41 - 0.51+	
Tr 128	12801	Layer	Turf/Topsoil	0 - 0.31	
	12802	Layer	Natural	0.31 - 0.43+	
Tr 129	12901	Layer	Turf/Topsoil	0 - 0.06	
	12902	Layer	Sub-soil	0.06 - 0.40	
	12903	Layer	Natural	0.40+	
Tr 130	13001	Layer	Turf/Topsoil	0 - 0.06	
	13002	Layer	Sub-soil	0.06 - 0.36	
	13003	Layer	Natural	0.36+	

Tr 131	13101	Layer	Turf/Topsoil	0 - 0.22	
	13102	Layer	Sub-soil	0.22 - 0.39	
	13103	Layer	Natural	0.39+	
Tr 132	13201	Layer	Turf/Topsoil	0 - 0.05	
	13202	Layer	Sub-soil	0.05 - 0.34	
	13203	Layer	Natural	0.34+	
Tr 133	13301	Layer	Turf/Topsoil	0 - 0.39	
	13302	Layer	Natural	0.39+	
Tr 134	13401	Layer	Turf/Topsoil	0 - 0.40	
	13402	Layer	Sub-soil	0.40 - 0.47	
	13403	Layer	Natural	0.70+	
	13404	Layer	Modern layer	0.47 - 0.70	
Tr 135	13501	Layer	Turf/Topsoil	0 - 0.34	
	13502	Layer	Natural	0.34 - 0.46+	
Tr 136	13601	Layer	Turf/Topsoil	0 - 0.09	
	13602	Layer	Sub-soil	0.09 - 0.38	
	13603	Layer	Natural	0.38+	
Tr 137	13701	Layer	Turf/Topsoil	0 - 0.32	
	13702	Layer	Sub-soil	0.32 - 0.46	
	13703	Layer	Natural	0.46+	
	13704	Cut	Cut of ditch	0.46 - 0.66	
	13705	Fill	Fill of ditch [13704]	0.46 - 0.66	
Tr 138	13801	Layer	Turf/Topsoil	0 - 0.30	
	13802	Layer	Sub-soil	0.30 - 0.45	
	13803	Layer	Natural	0.45+	
Tr 139	13901	Layer	Turf/Topsoil	0 - 0.29	
	13902	Layer	Sub-soil	0.29 - 0.42	
	13903	Layer	Natural	0.42+	
Tr 140	14001	Layer	Turf/Topsoil	0 - 0.05	
	14002	Layer	Sub-soil	0.05 - 0.35	
	14003	Layer	Natural	0.35+	
Tr 141	14101	Layer	Turf/Topsoil	0 - 0.05	
	14102	Layer	Sub-soil	0.05 - 0.36	
	14103	Layer	Natural	0.36+	
Tr 142	14201	Layer	Turf/Topsoil	0 - 0.11	
	14202	Layer	Sub-soil	0.11 - 0.41	
	14203	Layer	Natural	0.41+	
Tr 143	14301	Layer	Turf/Topsoil	0 - 0.32	
	14302	Layer	Sub-soil	0.32+	
Tr 144	14401	Layer	Turf/Topsoil	0 - 0.05	
	14402	Layer	Sub-soil	0.05 - 0.35	

	14403	Layer	Natural	0.35+	
Tr 145	14501	Layer	Turf/Topsoil	0 - 0.35	
	14502	Layer	Natural	0.35+	
Tr 146	14601	Layer	Turf/Topsoil	0 - 0.37	
	14602	Layer	Natural	0.37+	
Tr 147	14701	Layer	Turf/Topsoil	0 - 0.37	
	14702	Layer	Natural	0.37+	
	14703	Cut	Cut of pit	0.37 - 0.53	
	14704	Fill	Fill of pit	0.37 - 0.53	
Tr 148	14801	Layer	Turf/Topsoil	0 - 0.35	
	14802	Layer	Natural	0.35+	
Tr 149	14901	Layer	Turf/Topsoil	0 - 0.13	
	14902	Layer	Sub-soil	0.13 - 0.46	
	14903	Layer	Natural	0.46 - 0.48+	
	14904	Cut	Cut of ditch	0.46 - 1.00	
	14905	Fill	Backfill of ditch [14904]	0.46 - 1.00	CBM, burnt flint, coke
Tr 150	15001	Layer	Turf/Topsoil	0 - 0.36	
	15002	Layer	Sub-soil	0.36+	
Tr 151	15101	Layer	Turf/Topsoil	0 - 0.40	
	15102	Layer	Natural	0.40+	
Tr 152	15201	Layer	Turf/Topsoil	0 - 0.33	
	15202	Layer	Natural	0.33+	
Tr 153	15301	Layer	Turf/Topsoil	0 - 0.11	
	15302	Layer	Sub-soil	0.11 - 0.33	
	15303	Layer	Natural	0.33+	
Tr 154	15401	Layer	Turf/Topsoil	0 - 0.32	
	15402	Layer	Natural	0.32+	
Tr 155	15501	Layer	Turf/Topsoil	0 - 0.32	
	15502	Layer	Natural	0.32+	
Tr 156	15601	Layer	Turf/Topsoil	0 - 0.19	
	15602	Layer	Sub-soil	0.19 - 0.33	
	15603	Layer	Natural	0.33+	
	15604	Cut	Cut of linear feature	0.33 - 0.54	
	15605	Fill	Fill of linear feature [15604]	0.33 - 0.54	
Tr 157	15701	Layer	Turf/Topsoil	0 - 0.17	
	15702	Layer	Sub-soil	0.17 - 0.32	
	15703	Layer	Natural	0.32 - 0.50	

Appendix 2: Photographs



Plate 1 - Overview of Plot 11, looking east



Plate 2 - Pottery fragments in Linear [4703]



Plate 3 - Pottery fragments in Linear [5903]



Plate 4 - Representative Section of Trench 9



Plate 5 - Representative Section of Trench 15



Plate 6 - Representative Section of Trench 28



Plate 7 - Representative Section of Trench 40



Plate 8 - Representative Section of Trench 52



Plate 9 - Representative Section of Trench 56



Plate 10 - Representative Section of Trench 64



Plate 11 - Representative Section of Trench 87



Plate 12 - Representative Section of Trench 143



Plate 13 - Section of linear [9204], looking east



Plate 14 - Section of linear [9504], looking east



Plate 15 - Section of linear [3303], looking north-east



Plate 16 - Section of linear [12004], looking north-east



Plate 17 - Section of linears [12004] and [12006], looking south-east



Plate 18 - Section of linear [4703], looking north-east



Plate 19 - Section of linear [3803], looking north



Plate 20 - Section of linear [3806], looking north



Plate 21 - Overview of Trench 38, looking east



Plate 22 - Section of linear [3907], looking north-east



Plate 23 - Section of linear [5903], looking north-east



Plate 24 - Section of linear [6103], looking north-east



Plate 25 - Section of linear [8804], looking east



Plate 26 - Section of linear [9004], looking east



Plate 27 - Section of linear [9306], looking south-west



Plate 28 - Section of linear [10404], looking north-east



Plate 29 - Overview of linear [1606], looking south-east



Plate 30 - Section of linear [9007], looking north-west



Plate 31 - Section of linear [4504], looking north-east



Plate 32 - Section of linear [304], looking south-east



Plate 33 - Section of posthole [8904], looking north



Plate 34 - Section of pit [11104], looking south-west



Plate 35 - Overview of Trench 35, looking north-west



Plate 36 - Overview of Trench 40, looking west



Plate 37 - Overview of Trench 51, looking south



Plate 38 - Overview of Trench 59, looking south-west



Plate 39 - Overview of Trench 87, looking south-east

Appendix 3: Environmental Archaeological Assessment Report

By: Kate Turner

INTRODUCTION

This report summarises the findings of the rapid assessment of the environmental remains in three bulk soil samples collected during the archaeological evaluation of land along the proposed route of the Stubbington bypass, Hampshire. These samples were taken from two clay layers (contexts 1604 and 1605), and the fill of a suspected fire pit (feature 11104), the context information for which is given in table 1.

The aim of this assessment is to:

1. Give an overview of the contents of the assessed samples;
2. Determine the environmental potential of these samples;
3. Establish whether any further analysis is necessary.

Table 1: Context information for environmental samples, SBSH18

Context No.	Cut	Context type	Context category	Trench number	Environmental Sample No.	Interpretation
1604	1604	Layer	Clay layer	16	2	Clay layer
1605	1605	Layer	Clay layer	16	3	Clay layer
11105	11104	Fill	Fire pit	111	1	Fill of sub-rectangular fire pit [11104]

METHODOLOGY

Three environmental bulk samples, of between eighteen and thirty-seven litres in volume, were processed using the flotation method; material was collected using a 300 µm mesh for the light fraction and a 1 mm mesh for the heavy residue. The heavy residue was then dried, sieved at 1, 2 and 4 mm and sorted to extract artefacts and ecofacts. The abundance of each category of material was recorded using a non-linear scale where '1' indicates occasional occurrence (1-10 items), '2' indicates occurrence is fairly frequent (11-30 items), '3' indicates presence is frequent (31-100 items) and '4' indicates an abundance of material (>100 items).

The light residue (>300 µm), once dried, was scanned under a low-power binocular microscope to quantify the level of environmental material, such as seeds, chaff, charred grains, molluscs and charcoal. Abundance was recorded as above. A note was also made of any other significant inclusions, for example roots and modern plant material.

RESULTS

For the purposes of this assessment samples will be discussed individually, in order to assess environmental potential. Cultural material collected from the heavy residues has been catalogued and passed to the relevant specialists for further assessment. A full account of the sample contents is given in table 2.

Sample <1>, context (11105), fill of pit [11104]

Sample <1> was collected from the fill of a sub-rectangular pit (11104). Wood charcoal was abundant in this deposit, with over one-hundred specimens being recognised, including a moderate concentration of material of a suitable size for species identification (>4 mm in length/width), which may support the interpretation of this feature as a fire-pit. This material could also be the spent fuel from a fire in another area of the site. A small number of charred goosefoot seeds were recovered (<10 specimens), and several un-burnt examples of birch (*Betula* sp.), which are likely to be modern contaminants.

Cultural material was rare; only a minimal amount of burnt flint was identified in the heavy residue. Roots and modern insect remains were recognised in the flot, which may be an indication of bioturbation.

Sample <2>, layer (1604)

Sample <2> was taken from a clay layer at the south-east end of trench 16. Environmental preservation was poor in this sample, with only a small amount of heavily fragmented wood charcoal being recovered,

none of which was of a size for species to be identified, and a low frequency of terrestrial snail shell. As the identified shells are of a non-native burrowing species, these are interpreted to be a sign of post-depositional disturbance. Rootlets and modern plant material were also reported, which may be further evidence of this.

Cultural remains were limited to a moderate amount of burnt flint fragments, several struck flint pieces and a single fragment of pottery.

Sample <3>, layer (1605)

Sample <3>, also collected from a clay layer located in trench 16, was similarly poor in environmental material. Botanical remains were limited to a minimal assemblage of largely non-diagnostic wood charcoal; although several potentially sizeable fragments were recognised in this sample (<10 specimens), the majority were categorised within the smallest size fraction (<2 mm in length/width). This is likely to be the rake-out from a small scale, possibly domestic, fire.

Burnt and struck flint, and a small piece of pottery were extracted from the residue, and roots and modern plant material from the flots.

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK

A rapid assessment of the environmental remains in the Stubbington Bypass bulk samples has shown that preservation of ecofacts is generally poor, and that there is little of diagnostic value in these features. The recommendations for additional work on the assemblage are outlined below. A summary of this assessment should be included in any future publications.

Plant Macrofossils and Molluscs

Due to the low density of remains, no additional work is recommended at this stage.

Wood Charcoal

Preservation of wood charcoal was good in the sample taken from the fire-pit (sample 1). Depending on the nature of the research agenda, additional specialist analysis could be undertaken on this material prior to publication, as this may shed light on the types of wood that were being selected for use as fuel during the use of the site and may also give an idea of the methods of combustion being undertaken (in terms of duration, temperature and other variables). It may also help to provide a partial reconstruction of the local woodland and give an idea of the landscape of the area. Radiocarbon dating could additionally be carried on selected sizeable specimens from samples <1> and <3>, in order to improve the chronology of the site. Species identification should be undertaken prior to dating, to assess if the material is suitable.

Recommendations for future excavations

A rapid assessment has shown that charcoal, and potentially other carbonised plant remains, have the potential to be preserved on this site. Should future interventions be undertaken this should be reflected in the environmental sampling strategy, and samples should, where possible, be collected from well-sealed deposits, with little evidence for post depositional disturbance.

Column samples should be taken from any suitable deposits that are interpreted to be related to stream or channel features, as these may contain remains such as pollen and diatoms, analysis of which may enhance our understanding of the local environment of the site.

Table 2: Assessment of environmental remains, SBSH18

Sample No.	1	2	3
Context No.	11105	1604	1605
Feature No.	11104	1604	1605
Volume of bulk (litres)	37	28	18
Volume of flot (millilitres)	110	12	1
Method of processing	F	F	F
HEAVY RESIDUE			
Charcoal			
Charcoal >4 mm	3		1
Charcoal 2-4 mm	2		
Charcoal <2 mm			
Other Material			
Burnt Flint	2	3	3
Struck Flint		1	1
Pottery		1	1
Flot Residue			
Charcoal			
Charcoal >4 mm	3		
Charcoal 2 - 4 mm	4	1	
Charcoal <2 mm	4	4	2
Frag. of ID size	Y	x	x
Seeds			
	Common Name		
<i>Betula</i> sp.	Birch	1	
Seed cases - indeterminate		1	
Burnt seeds			

<i>Chenopodium</i> spp.	Goosefoots	1		
Terrestrial molluscs				
<i>Cecilioides acicula</i>			1	
Juveniles - indeterminate			1	
Other plant macrofossils				
Modern plant material			2	1
Roots/tubers		2	1	1
Other remains				
Insect remains		1		
Vitreous material			1	

Key: 1- Occasional, 2- fairly frequent, 3- frequent, 4- abundant

REFERENCES

Kerney, M.P. 1999. Atlas of the Land and Freshwater Molluscs of Britain and Ireland. *Colchester: Harley.*

Stace, C, 1991. New flora of the British Isles. *Cambridge: Cambridge University Press.*

Appendix 4: Lithic Assessment Report

Barry Bishop November 2018

Introduction

The archaeological investigations at the Stubbington Bypass resulted in the recovery of assemblages of struck and burnt flint. The pieces have all been individually catalogued and this includes details of their contextual origins, raw material and condition, and where possible a suggested date of manufacture (Appendix / Catalogue L01). This report summarises the information contained in the catalogue and assesses the assemblage's archaeological significance and its potential to contribute to the further understanding of the nature and chronology of activity at the site. All metrical descriptions follow the methodology established by Saville (1980).

Quantification and Deposition

Trench	Decortication flake	Core rejuvenation flake	Chip <15mm	Flake	Flake fragment >15mm	Core: flake	Core: blade	Conchoidal chunk	Burnt Stone (no.)	Burnt Stone (wt:g)
Tr16			3	2	1			1	71	760
Tr30		1								
Tr33									1	9
Tr57	1					1				
Tr92									6	16
Tr95									15	136
Tr99							1			
Tr111									3	12
Tr149									1	60
Total	1	1	3	2	1	1	1	1	97	993*

**This flint represents just a small sample of that collected and observed*

Table L01: Quantification of Lithic Material from Stubbington by Evaluation Trench

A total of eleven pieces of struck flint were recovered, the largest quantities coming from natural water features [1604] and [1605] in Trench 16 with three other trenches also contributing fragments. The bulk of the burnt flint submitted for analysis (71 pieces), also came from these features.

Description

Unworked Burnt Stone

A sizable quantity of burnt flint was observed during the investigation, with just a small sample retained for analysis; this is commented on here. The unworked burnt stone all consists of rounded alluvial flint cobbles that have been heated to a variable but generally intense degree, causing them to change to a red or grey-white colour and become 'fire-crazed'. The presence of this flint may indicate that flint was being deliberately burnt at the site. The deliberate heating of flint is often documented from prehistoric sites and a variety of reasons have been forwarded for its production, including for cooking and a variety of craft and industrial processes (e.g. Barfield and Hodder 1987; Barfield 1991; Jeffery 1991).

Struck flint

The raw materials used for the struck flint assemblage comprise fine-grained 'glassy' flint of a wide variety of colours, hues and texture. Cortex, which is commonly present, is either rough but weathered or rolled smooth, and heavily recorticated thermal surfaces also present. Although the flint is generally of good quality, its knapping potential is limited by the frequency of internal thermal flaws. The mix of different flint types and the state of the raw materials indicate that they were most likely to have been obtained from the alluvial deposits that are present close by (BGS 1987).

No typologically diagnostic pieces are present but technological traits indicate that flintworking had commenced at the site by the Mesolithic or possibly Early Neolithic. This is best demonstrated by the opposed platformed blade core recovered from unstratified deposits in Trench 99 and also the core rejuvenation flake recovered from unstratified deposits in Trench 30. The latter had been struck from another opposed platformed blade core that had earlier produced numerous very narrow micro-blades; although broadly dateable to the Mesolithic or Early Neolithic, is most likely to have been struck in the former period. Few other pieces are as dateable although the presence of a rather opportunistically and minimally worked flake core from unstratified deposits in Trench 57 as well as a 'squat' flake (*sensu* Martingell 1990; 2003) recovered natural layer [1604] in Trench 16 suggest some of the flintwork may have been produced in the later prehistoric period, perhaps during the later second or first millennium BC. The natural layers [1604] and [1605] in Trench 16 produced the largest assemblage of struck flint, this amounting to seven pieces. With the exception of the possible later prehistoric date suggested for the 'squat' flake, none is diagnostic although the presence of micro-debitage (flakes and flake fragments less than 15mm in dimension) suggests knapping may have occurred close-by.

Significance

The size of the assemblage is small and certainly not indicative of intensive flint-using activities, although so far only small areas have been investigated. Flintworking is attested close to the natural features in Trench 16 as was the probable production of burnt flint, and a scattering of flintwork suggests widespread, if low-key, Mesolithic or Early Neolithic activity across the development area.

Recommendations

The assemblage by itself is too small to warrant further technological, functional or metrical analyses and no further analytical work is recommended. However, it indicates that additional lithic material accruing from further work excavation could have the potential of significantly adding to understandings of later prehistoric lithic technology in the region as well as addressing specific questions concerning the nature of the occupation at the site. Should further work be considered, the struck flint assemblage reported here should be re-documented in conjunction with any additional material found following the completion of the archaeological programmes. The burnt flint can be discarded. From the point of view of the lithic material, any further fieldwork should focus on obtaining as large and closely contextually defined lithic assemblage as possible, in order to attempt to understand the nature, extent and chronology of any prehistoric lithic-based activities. Should sufficient quantities of lithic artefacts be procured from any future work, full metrical, typological and technological analysis may be warranted.

Bibliography

- Barfield, L. and Hodder, M. 1987 Burnt Mounds as Saunas, and the Prehistory of Bathing. *Antiquity* 61 (233), 370-379.
- Barfield, L. H. 1991 Hot Stones: hot food or hot baths? In M. A. Hodder and L. H. Barfield, (Eds.) *Burnt Mounds and Hot Stone Technology: papers from the 2nd International Burnt Mound Conference, Sandwell, 12-14 October 1990*, 59 – 67. Sandwell Metropolitan Borough Council. Sandwell.
- British Geological Survey 1987 *England and Wales Sheet 315 Southampton: Superficial Deposits*. BGS. Keyworth.
- Jeffery, S. 1991 Burnt Mounds, Fulling and Early Textiles. In M. A. Hodder and L. H. Barfield, (Eds.) *Burnt Mounds and Hot Stone Technology: papers from the 2nd International Burnt Mound Conference, Sandwell, 12-14 October 1990*, 97-108. Sandwell Metropolitan Borough Council. Sandwell.
- Martingell, H. 1990 The East Anglian Peculiar? The 'Squat' Flake. *Lithics* 11, 40-43
- Martingell, H. 2003 Later Prehistoric and Historic Use of Flint in England. In: N. Moloney and M.J. Shott (Eds.) *Lithic Analysis at the Millennium*, 91–97. University College London Institute of Archaeology Publications. London.
- Saville, A. 1980 On the Measurement of Struck Flakes and Flake Tools. *Lithics* 1, 16-20.

Appendix 5: Prehistoric and Roman pottery Assessment Report

By Eniko Hudak

The archaeological evaluation at Stubbington Bypass, Hampshire (SBSH18) produced a small assemblage of prehistoric pottery totalling 225 sherds, 2.641 kg, 1.39 EVEs, and a small assemblage of Roman pottery totalling 324 sherds, 2.496 kg, 2.48 EVEs. The pottery was fully quantified using the standard measures of sherd count, weight, and Estimated Vessel Equivalents (EVEs). The assemblage was recorded using the Winchester form and fabric codes following the practice of the Winchester city excavations (Biddulph and Booth 2011, Brown 2011), extended by form codes for the prehistoric pottery from the Danebury excavations typology (Cunliffe 1984).

Assemblage composition

Overall, a rather restricted range of fabrics is represented in the assemblage with near-equal amounts of prehistoric and Roman fragments, but with a greater variety of Roman fabrics. Diagnostic sherds were scarce but represent a variety of Iron Age and Iron Age tradition jars, and Roman jars and bowls.

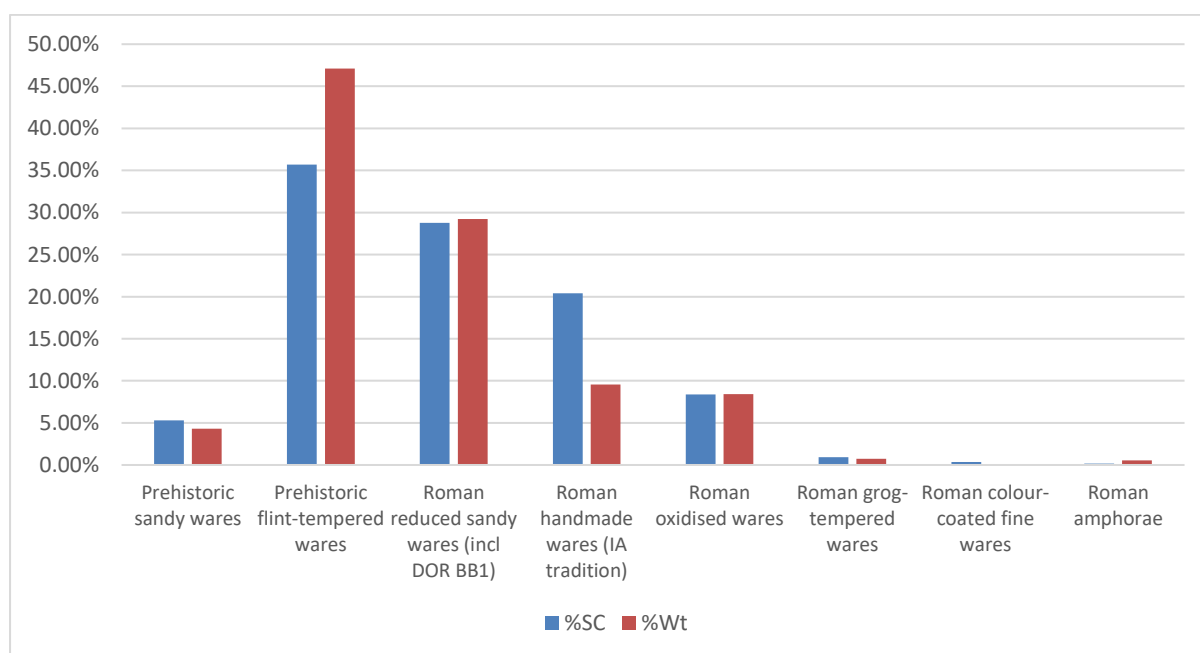


Figure 1 – Quantification by sherd count and weight per fabric group

The prehistoric pottery could be assigned to two broad fabric groups based on their main inclusions according to the categories of the Winchester city groups (Brown 2011): Fabric A is a sandy fabric with a variety of coarse inclusions, and Fabric B has predominantly flint temper and is the most commonly occurring fabric in the assemblage. The abundance and size of the flint temper varies greatly within the group, but most had abundant medium flint fragments, and are likely to be of local origin. Fabric A includes rim fragments of JC3 type jars with beaded-rims dated to the late Iron Age to the Early Roman period, and wheel-made JE type jars with upstanding rims of the same date. Fabric B however included large joining fragments of a JB3 type rounded jar with upright rim of possibly early to mid-Iron Age date, and of a JC2 type proto-bead-rim jar dated to the mid- to late Iron Age.

The Roman pottery encompasses a greater variety of fabrics. The most common fabrics are the range of fine, medium, and coarse reduced sandy wares (ZF, ZM, ZC) in bead-rim and BB-style jar forms. Oxidised sandy wares (WC, YC, YFD, NFA) including fabrics similar to Verulamium region products, as well as Iron Age tradition sparse flint-tempered fabric (XF) in bead-rim jar form, grog-tempered fabrics (SG), and a few sherds of Dorset BB1 (ZMA) in forms of triangular-rim and incipient flange bowls also occur. There is only a single unstratified fragment of a DR2-4 type amphora (A), and two small fragments of an unsourced colour-coated ware (T). There are no fragments of Terra Sigillata in the assemblage.

The Roman pottery can broadly be dated to the early Roman period (mid-1st to 2nd centuries AD) based on the occurrence of possible transitional fabric XF, bead-rim jars which are of mid-late 1st century date, and Dorset BB1 and BB-style forms in other fabrics, which are normally dated to after AD120. The latest dated fragment in the assemblage is the Dorset BB1 incipient flange bowl in Trench 39, which tends to be later than AD160.

Assemblage distribution

The pottery was recovered from 22 individually numbered contexts from 19 trenches, only 14 fragments were unstratified from three additional trenches (Table 1). Individual context assemblages were mostly small (less than 30 sherds) with three medium-sized (30-100 sherds) from Trenches 38 and 88, and two large (over 100 sherds) assemblages from Trenches 47 and 59. Fragments survived in a variety of states, but were mostly abraded and heavily fragmented, which is also reflected in the rather low mean sherd weight of 9.4 g suggesting a degree of redeposition had taken place. Trenches 20, 30, 33, 47, 57, 89, 92, and 120 produced only prehistoric pottery; trenches 26, 39, 59, 61, 88, 90, 95, 100, and 104 contained only Roman pottery; and trenches 16, 38, 93, 98, and 105 had mixed assemblages including prehistoric, Roman, and a very small amount of post-Roman material (see C. Jarett this volume).

Trench	Context	SC	Wt(g)	EVEs	Spotdate
-	0	1	29	0.14	AD50-150
26	0	1	2		AD50-400
57	0	2	2		PREHIST
89	0	1	4		PREHIST
98	0	9	95	0.1	Poss. 1 st century AD
16	1602	2	5		PREHIST
	1604	4	13		AD50-400
20	2006	1	1		PREHIST
30	3004	1	6		PREHIST
33	3304	3	9		PREHIST
38	3804	33	488	0.51	AD50-100
	3807	60	759	0.15	AD120-400
39	3908	16	223	0.25	AD160-300
47	4704	171	1856	1.29	PREHIST
59	5904	122	668	0.29	AD50-100
61	6104	4	19		AD50-400
88	8805	65	668	0.91	AD120-400
90	9005	7	19		AD50-400
92	9205	2	6		PREHIST
93	9305	1	5		PREHIST
	9307	5	68		AD50-200
95	9505	11	32		AD120-400
98	9805	5	38		AD50-400
100	10005	1	17		AD50-400
104	10405	14	95	0.23	AD120-400
105	10505	1	5		AD50-400
120	12005	6	5		PREHIST

Table 1 – Distribution of the prehistoric and Roman pottery by trench and context

A third of the entire site assemblage both by sherd count and weight was retrieved from Trench 47. The context assemblage of fill (4704) of prehistoric ditch [4703] comprises fresh fragments of two flint-tempered storage jars with large joining fragments of a JB3 type rounded jar with upright rim of possibly early to mid-Iron Age date, and of a JC2 type proto-bead-rim jar dated to the mid- to late Iron Age. It is a possibility that these vessels were deposited complete, however, it has to be noted that the larger joining fragments only comprise the top parts of the vessels.

The Trench 59 assemblage is also considered to be large by sherd count, however, it is heavily fragmented with a very low mean sherd weight of less than 5.5 g. It comprises very small to medium fragments of at least two different vessels; a bead-rim jar in the possibly transitional fabric XF with fine sand and sparse flint tempering and burnished surfaces, and base and body fragments of another vessel (possibly also a jar) in sandy ZM.

Ditches [3803] and [3806] of Trench 38 yielded a total of 93 fragments weighing 1.247 kg, with a higher than overall mean weight of 13.4 g. The assemblages are somewhat mixed with a small amount of prehistoric pottery, but both are dominated by medium and coarse sandy grey wares (ZM, ZC). There are a few diagnostic fragments of bead-rim and storage jars, and there is a single fragment of a Dorset BB1 triangular rim bowl in (3807) of ditch [3806] dated to after AD120.

The last larger assemblage of pottery was recovered from the upper fill (8805) of ditch [8804], which contained 63 sherds of a near complete example of a BB-style everted rim jar in fine sandy grey ware with 84% of its rim present. There are only two other sherds in this context, both in fabric ZM including one of a different BB-style everted rim jar, which are dated to after AD120. Again, there is the possibility that the fine sandy ware jar was deposited as a complete vessel.

Discussion and recommendations

The small size and dispersed distribution of the assemblages limit the discussion beyond dating. The prehistoric and Roman pottery is indicative of multi-period activity with the Roman period extending into at least the second half of the 2nd century AD, but the nature of the activity is yet obscure. Continuity and transition between the Iron Age and Roman period of the site cannot be firmly established yet but based on the presence of transitional forms and fabrics the site has the potential to uncover more evidence and to contribute to our understanding of this period.

Although basic recording and tentative dating of the prehistoric material was carried out for the purpose of the report, it is recommended that the material be sent to a local prehistoric pottery specialist for further analysis, in the event of further work being carried out on site. All the Roman dated pottery has been fully recorded and no further analysis is required.

Bibliography

- Biddulph, E. and Booth, P. (2011) 'Section 1.2: The Roman Pottery' specialist supplement for Ford, B.M. and Teague, S. *Winchester – a city in the making*, Oxford Archaeology Monograph No. 12.
- Brown, L. (2011) 'Section 1.1: The Prehistoric Pottery', specialist supplement for Ford, B.M. and Teague, S. *Winchester – a city in the making*, Oxford Archaeology Monograph No. 12.
- Cunliffe, B. (1984) *Danebury: and Iron Age hillfort in Hampshire*, Volume 2: The excavations, 1969-1978: the finds, Council for British Archaeology Research Report 52.

Fabric/Form code	Expansion
A	Un sourced amphora (Biddulph and Booth 2011)
NFA	Oxidized micaceous fabric with fine sand, possibly originally mica dusted (Biddulph and Booth 2011)
PHFabricA	Fabric A, sandy fabric with a variety of coarse tempering (Brown 2011)
PHFabricB	Fabric B, predominantly flint temper (Brown 2011)
SG	Dark grey fabric with abundant fine sand and common grog and iron oxides (Biddulph and Booth 2011)
T	Un sourced or uncertain colour-coated ware (Biddulph and Booth 2011)
WC	Orange fabric with medium and coarse sand (Biddulph and Booth 2011)
XF	handmade Iron Age tradition fabric with fine sand and common flint (Biddulph and Booth 2011)
YC	Buff fabric with medium to coarse sand and iron oxides (Biddulph and Booth 2011)
YFD	Buff fabric with fine sand, iron oxides, and grey core (Biddulph and Booth 2011)
ZC	Coarse sandy greyware (Biddulph and Booth 2011)
ZF	Fine sandy greyware (Biddulph and Booth 2011)
ZM	Medium sandy greyware (Biddulph and Booth 2011)
ZMA	Dorset BB1 (Biddulph and Booth 2011)
C	Jars, general (Biddulph and Booth 2011)
CH	Bead-rim jars (Biddulph and Booth 2011)
CK	BB-style everted rim jars (Biddulph and Booth 2011)
CN	storage jar (Biddulph and Booth 2011)
IA	Straight sided bowls/dishes (Biddulph and Booth 2011)
JB3	IA rounded jars with upright rims (Cunliffe 1984)
JC2	IA proto-bead-rim jars (Cunliffe 1984)
JC3	IA high-shouldered jars with short upstanding or beaded rims (Cunliffe 1984)
JE	IA globular/high-shouldered wheel-made jars with upstanding rim (Cunliffe 1984)
L	Lids (Biddulph and Booth 2011)

Table 2 – Fabric and form code expansions

Appendix 6: Building Material Assessment Report

Compiled by Dr Kevin Hayward November 2018

INTRODUCTION AND AIMS

One crate (18 bags) of ceramic building material, stone, daub and fired clay as well as some quern stone and whetstone were retained at excavation from Stubbington-By-Pass, Stubbington, Hampshire SBSH18.

This small sized assemblage (83 examples 7551g) was assessed in order to:

- Identify the form and fabric of ceramic building material, daub and any mortar in order to determine whether it was prehistoric, Roman, Saxon, medieval or post medieval in date.
- Identify the fabric of the stone including the quernstone and the whetstone in order to determine what the material was made from and whether or not the material was local or brought in from further afield. Please also refer to Gaimister (2018) for a review of the form of the quernstones and whetstones
- Provide a list of spot dates
- Database SBSH18.mdb accompanies this document.
- Made recommendations for further study.

METHODOLOGY

The application of a 1kg masons hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10).

As there was no Hampshire ceramic building material fabric reference collection housed at PCA each new ceramic building material fabric from this site was prefixed by *STUB* followed by 1, 2, 3 etc thus *STUB1*; *STUB2*. . For the stone conventional Museum of London four-digit fabric code is employed.

ORGANIC COMPOSITE BUILDING MATERIALS AND FIRED CLAY 34 examples 106g

There is a large group of finger pressed Roman fired clay sections from Trench 38 in the Upper Fill [3804] of a Roman ditch [3803]. Each section is 25mm thick and made from a beige red fine clay with little or no inclusions in daub fabric 3102. Sections this size almost certainly from an oven lining. There are also examples Trench 59 in the backfill [5904] of an undated linear feature. This consists of a small

quantity of fired clay. As it is associated with LIA/ERB Lodsworth Quern then this smaller grouping would also seem to date to this period.

CERAMIC BUILDING MATERIAL 36 examples 3299g

Two distinct groupings of ceramic building material have been identified at SBSH18. First, a small group of Roman tile and brick associated with the LIA/ERB ditch fills. Second, post medieval brick, field drains and peg tile from large post-medieval drainage ditch fills.

ROMAN CERAMIC BUILDING MATERIAL 5 examples 227g

The Roman tile and brick, recovered from the evaluation is widely distributed and in a very poor fragmentary state.

FABRICS

Four fabrics were identified

STUB 3 Maroon-Orange white grog fabric with angular black rock inclusions up to 2-4mm silty bands or wisps, black iron oxide and black vesicular slaggy inclusion red-orange sandy-gritty fabric with compact red iron oxide, silty white/yellow laminae and lenses, Reduced core

STUB11 Very coarse sandy red fabric

STUB12 Silty orange sandy fabric – very fine silty laminae with burnt flint inclusions and scattered medium to coarse grained quartz

STUB13 Fine brown coarse black iron oxide fabric with clinker inclusions

FORMS

With the exception of a single unstratified 32mm Lydian brick, all the Roman ceramic building material is in a highly degraded state, consisting of tile or flecks of ceramic building material and may simply be the result of manure spreading.

MEDIEVAL CERAMIC BUILDING MATERIAL

There is no medieval ceramic building material on the site

POST MEDIEVAL CERAMIC BUILDING MATERIAL

31 examples 3072 g

Brick 20 examples 2603g

The post medieval assemblage is dominated by brick found in the fills of post medieval and modern ditches throughout the site in Trench 3 [304], Trench 8 [803], Trench 27 [2705], Trench 30 [3003], Trench 114 [11404] and Trench 149 [14904]. They are all in a poor condition and without any mortar attached it was not possible to date them more accurately than 1600-1900. The 3 locally made fabrics identified are listed below.

STUB 1 Orange loose sandy gritty brick, with burnt white flint fragments

STUB 2 Red crinkly sandy fabric with large red iron oxide 8mm and smaller (5mm) more frequent 5mm inclusions

STUB 4 Orange loose sandy fabric with occasional red iron oxide and white silty streaks

Roofing Materials 7 examples 180g

Post medieval peg tile fragments with a fine moulding sand were recovered from post medieval. Modern ditches Trench 30 [3003], Trench 114 [11404] intruded into Romano British Ditch fill Trench 39 [3906]. Three fabrics identifiable

STUB10 Very fine grained hard orange fabric with inclusions of blood red iron oxide

STUB12 Red sandy peg tile fragments with fine laminae and burnt flint inclusions with coarse common scattered quartz

STUB14 Thin post medieval fine orange silty fabric with a reduced core

Field Terracotta Drains 4 examples 289g

Examples of small (79mm diameter) terracotta field drains were recovered from Trench 114 and Trench 27 in the fill of modern ditches [11404] and [2705] respectively. They are almost certainly 19th to 20th century in date and made out of one fabric

STUB5 Cream fawn terracotta with a biscuity gritty fabric speckled with blood red iron oxide and occasional silty wisps and white lenses.

STONE – Petrology

13 examples 3186g

There was a variety of stone types (7) recovered including stone used for quern and whetstone. For a more detailed appraisal of the quern and whetstone form, please refer to Gaimster (2018). A review of 7 rock types, their geological character, source and probable function/ form are summarised below (Fig. 1).

	Description	Geological Type and source	Quantity	Use at BRHH18
3110	White fine hard prominent oolitic limestone small oyster fragments	Portland Whit Bed (Portlandian) Upper Jurassic Isle of Portland Dorset	1 example 85g	Rubble Post medieval Trench 27 lower fill [2706] of modern ditch
3115	Hard dark grey fissile slate	North Wales Slate Palaeozoic North Wales	1 example 96g	Post medieval roofing slate Intrusion fill [9305] of Romano-British linear Trench 93
3120	Black hard gritty metadolerite	Exotic source unknown probably Pre-Cambrian – Palaeozoic Brittany, Cornwall or Channel Islands	1 example 45g	Hone probably Roman or medieval Unstratified
3120a	Green and pale green variegated slate shiny foliated	Source unknown most probably either Palaeozoic South Wales or Cornwall/Devon	1 example 335g	Medieval to post medieval roofing slate unstratified Trench 98
3120b	Black hard basic alkali igneous rock with white leucite crystals and veining	Source unknown possibly Permian Trap Basalt Devon/Dorset	4 examples 175g	Unclear high temperature pot boiler or more probably stone used in slag production as vesicular bloomer NOT GERMAN LAVASTONE Roman –Medieval in post medieval fill [4505] of linear [4504] Trench 45
3126	Fissile shelly limestone packed full of black oyster fragments	Purbeck limestone (Grub Bed) Lower Cretaceous (Purbeckian) Isle of Purbeck, Dorset	1 example 1826g	Paver slab post medieval Trench 30 fill [3004] of post medieval/modern ditch [3003] 29mm thick
3156	Greensand Medium grained glauconite with black chert round burrows	Lodsworth Greensand Lower Greensand Lodsworth West Sussex	4 examples 620g	LIA/RB Rotary quern fragments Trench 59 Backfill of linear [5904] unknown date unstratified examples Trench 9

Figure 1 Rock types identified from the excavations at BRHH18.

The geological character and source of the quern assemblage deserves further comment. It is all made from Lodsworth greensand, a sedimentary rock with hard, black cherty wisps to facilitate grinding. This was exploited from the Greensand quarries in West Sussex, lying 35km to the east (Peacock, 1987, 61-85). It used extensively throughout central southern England from the EIA to Late Roman period including Havant (Hayward 2018). Its peak production period however, is the very late Iron Age to Early Roman Period (essentially 1st century AD) as shown by the vast quantities identified from Insula IX Silchester (Hayward 2011).

The unstratified Hone made of a gritty hard black igneous rock is likely to have been supplied from a West Country or Brittany/Channel Islands source. It is made of a rock not previously encountered and used for hone production and as such is of potentially considerable interest. There are a number of other “exotics” of uncertain origin namely a black basalt material from [4504] and a curious metaslate blue/green which resembles somewhat the roofing slate from medieval Winchester (Hayward pers. obs.). It is possible that these come from beach deposits where exotics are frequently eroded out of the Quaternary cliff face the result of Ice Age, ice-berg damming (David Bone pers. comm.)

The remainder of the stone assemblage consists of Dorset limestone associated with post medieval roofing, paving and architectural stonework (Purbeck limestone; Portland Whit Bed) and Victorian North Wales slate intruded into a Romano-British linear [9304]

DISTRIBUTION

BUILDING MATERIALS SPOT DATES

Conte xt	Fabric	Form	Size	Date range		Latest dated		Spot date	Spot date with mortar
				of material		material			
0	3120	Meta-dolerite hone	1	50	1600	50	1600	50-400+	No mortar
Trench 9	3156	Lodsworth Greensand Rotary Quern	3	200	AD400 BC	200BC	AD400	50-400	No mortar
Trench 98	3120a STUB3	Roofing slate South Wales or Cornish source; Roman Brick busy grog and silty fabric	2	50	1900	1100	1900	1100- 1500+	No mortar
305	STUB1	Post medieval brick red sandy	4	150	1900	1500	1900	1600- 1900	No mortar
804	STUB2	Post medieval brick red iron oxide fabric	2	150	1900	1500	1900	1600-190	No mortar
2706	3110; STUB1; STUB 4; STUB5	Portland stone Post medieval Red brick sandy and silty brick; Terracotta field drain	13	150	1900	1800	1900	1800- 1900	No mortar
3004	3126; STUB1; STUB 2 ; STUB10	Purbeck limestone paver, Post medieval bricks sandy and red iron oxide, peg tile fragment	4	50	1900	1500	1900	1700- 1900	No mortar
3306	STUB11	Roman tile fragment Coarse sandy fragment	1	50	400	50	400	50-400+	No mortar
3804	3102	Oven lining clay segments	30	150	1600	1500bc	1600	50-400+	No mortar

Conte xt	Fabric	Form	Size	Date range of material	Latest dated material	Spot date	Spot date with mortar
3906	STUB12	Medieval to early post medieval peg tile and Roman tile fragment same fabric	3	50 1800	1400 1800	1400- 1800	No mortar
4505	3120b	Alkali Basalt fragment potentially Roman or medieval	6	50 1600	50 1600	50-1600	No mortar
5904	3156	Lodsworth Greensand and Burnt Clay	5	150 1600	1500bc 1600	50-400	No mortar
9305	3115; STUB11	North Wales slate post medieval and Roman tile fragment	2	50 1900	1100 1900	1700- 1900	No mortar
10505	STUB11	Roman tile iron oxide fabric	1	50 400	50 400	50-400	No mortar
11405	STUB2; STUB5; STUB14	Iron oxide post medieval brick, red terracotta field drain pipe fragment; thin post medieval peg tile reduced core	6	150 1900	1800 1900	1800- 1900	No mortar
14905	STUB1; STUB4	Post medieval sandy and silty brick	5	150 1900	1500 1900	1600- 1900	No mortar

RECOMMENDATIONS/POTENTIAL

This small assemblage of ceramic building material, daub and worked stone from SBSH18 evaluation contains evidence for Roman rural occupation/activity in the area in the form of Lodsworth Greensand quern and an exotic stone hone (Gaimster 2018), with only tiny quantities of Roman ceramic building material, which may in fact be just manures spread. However, there is evidence for Roman occupation in the area from Chark Common (Welburn 2015). Another good indicator for Roman occupation is approaching 1kg of thick (25mm) segments of fired clay almost certainly for oven lining.

The remainder of the assemblage is largely post medieval in the fills of the post medieval ditches and field boundaries throughout containing common forms of brick, peg tile and field drains.

BIBLIOGRAPHY

Gaimster, M. (2018). *The small finds SBSH18*. Unpublished small finds report For Pre-Construct Archaeology West

Hayward, K.M.J. (2011). The worked stone. In: Fulford & Clarke (2011): *Silchester: City in Transition. The Mid-Roman Occupation of Insula IX c.A.D. 125-250/300. A report on excavations undertaken since 1997*. Britannia Monograph 25, Society for the Promotion of Roman Studies, 204-219.

Hayward, K.M.J. (2018). *Assessment of Building Material, Bartons Road Havant.BRHH18*. Unpublished building material assessment for Pre-Construct Archaeology West.

Peacock, D.P.S (1987). Iron Age and Roman quern production at Lodsworth, West Sussex. *The Antiquaries Journal* 67: 1 61-85.

Welburn, K. (2015). *Historic Environment Desk Based Assessment, Stubbington By-Pass, Stubbington*. Unpublished Assessment Report. WSP UK Ltd for Hampshire County Council.

Appendix 7: Stone Objects Assessment Report

Märit Gaimster, with stone identification by Kevin Hayward

The remains of four stone objects were retrieved from the excavations; they are listed in the table below. Only one of the objects came from a stratified context. This is a quern fragment of Lodsworth Greensand, quarried in West Sussex, from context [5904], the backfill of undated boundary/drainage ditch [5903] in Trench 59. The quern fragment was associated with pottery dating from AD 50–100. The fragment does not allow any further identification of the original quern, and whether it was part of the upper or lower stone. Lodsworth Greensand was quarried for querns from the Late Iron Age and throughout the Roman period (Peacock 1987, 69).

The remains of two further querns of two further querns of Lodsworth Greensand are unstratified finds from Trench 90. Both may be in the form of lower stones. One substantial edge piece with a heavily worn grinding surface allows an estimate of the size of the quern as c 320mm in diameter, a size that corresponds well with the smaller hand querns operated by one person (cf. Green 2017, 157). The fragment displays the characteristic convex shape, with a steeply angled grinding surface, of the so-called Sussex type quern of the Late Iron Age (Brown 1984, 418). The second unstratified example is in the form of two conjoining edge pieces of a similar estimated diameter of c 320mm. While this is clearly not part of the lower stone above, as the grinding surface is far less worn, the identification of this example is more problematic. Looking at the similarity in size, the two parts are conceivably, but not conclusively, from a single quern. If this were so, the sloping surface of the upper stone would indicate a Roman rather than an Iron Age quern, as the latter had far heavier and flat-topped uppers (Curwen 1937, 143–44). Alternatively, this is a lower stone fragment from a separate quern.

The fourth stone object, also unstratified but with no specific trench location, is a portable hone in the form of a well-manufactured square-section bar. One original end is present with all four sides tapering from repeated sharpening of blades or small tools with the flat side held flat against the stone. The thinner end of the hone has broken off in antiquity. While the form of this hone is common and well attested, the material is more unusual. It is made of exotic crystalline igneous or metamorphic rock, possibly with an origin in the Channel Islands or Brittany.

Significance and recommendations for further work

The assemblage of stone objects from Stubbington Bypass is small but provides an insight into domestic material culture and activities relating to the site during the Late Iron Age and Romano-British period. Formed of the remains of three hand querns and a portable hone, these objects should be considered in any further publication of the site.

References

- Brown, L. 1984. 'Objects of stone', 407–26 in B. Cunliffe, *Danebury: an Iron Age Hillfort in Hampshire*, vols 1–2, CBA Research Report 52, Council for British Archaeology.
- Curwen E. C. 1937. 'Querns', *Antiquity* **11**, 133–51.
- Green, C. 2017. 'Querns and Millstones in Late Iron Age and Roman London and South-East Britain', 156–79 in D. Bird (ed.), *Agriculture and Industry in South-Eastern Roman Britain*, Oxbow Books.
- Peacock, D. P. S. 1987. 'Iron Age and Roman quern production at Lodsworth, West Sussex', *The Antiquaries Journal* **67**, 61–85.

context	description	pot date
+	Quern of Lodsworth Greensand; two conjoining edge pieces of ?lower stone with top and grinding surfaces present; diam. c 320mm; 40–45mm thick	n/a
+	Quern of Lodsworth Greensand; edge fragment of lower stone with heavily worn angled grinding surface; diam. c 320mm; 30–50mm thick	n/a
+	Hone of non-local dense crystalline igneous or metamorphic rock, possibly with an origin in Channel Islands or Brittany; neatly worked square-section bar form with one original 30 x 30mm end present; tapering on all sides from use to 20 x 20mm section; L 90mm+	n/a
5904	Quern of Lodsworth Greensand; fragment only with remains of heavily worn grinding surface; thickness 50mm+	AD 50-100

SBSH18: stone objects

Appendix 8: Post Roman pottery Assessment Report

Chris Jarrett

A total of thirteen sherds (103g) of pottery was recovered from the archaeological work, which was found in six contexts and was recovered by hand, except for two very small fragments collected from environmental samples. The pottery dates to the Roman, medieval and post-medieval periods. One sherd of post-medieval pottery appears to be intrusive. The pottery recovered from the environmental samples is in a poor condition and difficult to date, otherwise the state of the other material is generally good and only two modern wares have laminated surfaces. The pottery is additionally in a fragmentary state and not all the sherds could be assigned to a vessel shape. Therefore, it seems most likely that the pottery was deposited under both secondary and tertiary conditions. The post-Roman pottery types were recorded according to Brown (2002; 2011). The pottery was quantified by fragment count, estimated number of vessels (ENV) and weight and it is discussed by its date, ware types and distribution.

The pottery types

The pottery can be quantified for the following periods as:

Roman: one sherd, 1 ENV, 5g

Medieval: one sherd, 1 ENV, 7g

Post-medieval: nine sherds, 9 ENV, 101g

Undated: two sherds, 2 ENV, less than 1g

Roman

A single non-diagnostic sherd of a Roman greyware with fine iron-stained clear quartzes was found in fill [10505].

Medieval

A jug sherd made in Southampton whiteware (STWW), dated c. 1270–1300, with an external pale greenish yellow glaze was recovered from context [5105].

Post-medieval

The range of post-medieval pottery types and the range of forms are as follows:

Flower pot (PMRU), c. 1650–1900+, one sherd, 1 ENV, 10g (body/wall sherd, context [305])

London stoneware (LONS), c. 1670–1925, one sherd, 1 ENV, 7g: forms: rounded jug (body sherd with a 'tiger skin' salt-glaze: context [7908])

Post-medieval redware (PMR), c. 1550–1900+, one sherd, 1 ENV, 13g: form: uncertain (flat base sherd, context [2706])

Post-medieval whiteware (PMW), c. 1550–1700, two sherds, 2 ENV, 42g: forms: dish, flared (flat base, context [10505]), unidentified (body sherd, context [11405])

Sunderland-type coarseware (SUND), 1800–1900, one sherd, 1 ENV, 7g: forms: unidentified (body sherd with an internal white slip and a clear glaze that has mostly laminated, context [11405])

Transfer-printed (refined whiteware) (TPW), c. 1780–1900, two sherds, 2 ENV, 3g: forms: bowl (a small body sherd with an external Chinoiserie design and the internal surface has laminated (context [11405]), unidentified ('flow-blue' decoration dated from c. 1830 with a possible *prunus* design and the exterior is pockmarked: context [305]).

Verwood ware (VERW), c. 1600–1900+, one sherd, 1 ENV, 10g: form: unidentified (body sherd, context [4406]).

Undated

The two sherds of undated pottery were both recovered from environmental samples and are both small sized (each fragment weighed less than 1g) and these could not be assigned to a period or ware type with any confidence. From context [1604], environmental sample <2> was recovered a fine fabric fragment with a grey core and one pale brown surface or margin surviving: this item could be of either a Roman or medieval date. A fine sandy reduced dark grey sherd from a thin walled vessel was noted in context [1605], environmental sample <3> and it is possibly of a Roman date.

Distribution

The distribution of the pottery is shown in Table 1.

Context	Cut	Trench	SC	ENV	Wt (g)	Pottery type (form)	Spot date
305	-	3	2	2	15	PMRU (flower pot), TPW, flow-blue (unidentified)	1830–1900
1604	-	16	1	1	<1g	Unidentified (environmental sample <2>)	?Roman or medieval
1605	-	16	1	1	<1g	Unidentified (environmental sample <3>)	?Roman
2706	2705	27	1	1	13	PMR (unidentified)	18th-20th century
4406	4405	44	1	1	10	VERW (unidentified)	1600–1900
5105	5104	51	1	1	8	LONS (rounded jug)	C. 1570–1800
7908	7906	79	1	1	7	STWW (jug)	1270–1300
10505	10504	105	1	1	49	PMW (dish, flared, intrusive), Roman greyware (unidentified)	C. 1550–1700
11405	11404	114	3	3	8	PMW (dish, flared), TPW (unidentified), SUND (unidentified)	1800–1900

Table 1. SBSH18, showing for each context containing pottery, the feature it was recovered from, the trench location, the quantification by sherd count (SC), estimated number of vessels (ENV) and weight, the pottery and forms represented and a spot date.

Significance, potential and recommendations for further work

The pottery is of little significance as it occurs in a small, abraded quantity and with little meaning. The potential of the pottery is to indicate a deposition date for the context it occurred in as well as inferring Roman, medieval and post-medieval activity in the area of the trench the pot was found in. There are no recommendations for further work on the pottery at this stage, although if further archaeological work is undertaken on the project, the importance of the material should be reviewed.

References

- Brown, D.H., 2002, *Pottery in Medieval Southampton c1066-1510*, Southampton Archaeology Monographs 8, CBA Research Report 133.
- Brown, D.H., 2011, Southampton French Quarter 1382 Specialist Report Download F1: Pottery. https://library.thehumanjourney.net/142/1/SOU_1382_Specialist_report_download_F1.pdf [accessed November 9 2018].

Appendix 9: Metalwork Assessment Report

By Callum Paisnel

Introduction

A total of 76 metal finds were recovered from the evaluation undertaken along the line of the proposed Stubbington Bypass, Gosport, Hampshire (SBSH18). The majority of these finds were represented by 70 nails, 68 of which are Iron and two of which are copper-alloy. The remaining group of finds comprises of a cast iron (likely) agricultural tool component (Small Find 1), a copper-alloy thimble (Small Find 2) and four fragments of ferrous wire. All metal finds date to the post-medieval or modern period and are indicative of agricultural activity. The finds are analysed and grouped below.

Methodology

The nails within this assemblage have been recorded using the typologies established by Visser, 1997 with additional reference made to Nelson, 1962. Identification of the thimble (Small Find 2) has been carried out with reference to items listed by Hill, 1995 and Holmes, 1988.

Analysis of the Finds

Cast Iron Tool Component from Ditch [3803] (Small Find 1)

This item measures *46.2mm X 31.6mm* and *6.2mm*. It is a thick cylinder with a sturdy punted bottom. This is made of cast iron and is therefore post 16th century. This find has internal bottom unevenness, indicative of casting and likely retains its original shape, as there is no evidence of a break point. The item may have formed a ferrous cap or join for an agricultural tool or machine component. This item was recovered from the top of fill [3804], which is the upper fill of ditch [3803]. The item may be intrusive here though, dating to the late post-medieval or modern period.

Cu. Alloy Thimble from Context [4505] from ditch [4504] (Small Find 2)

Two fragments of a copper-alloy machine cut thimble were recovered from ditch [4504]. These pieces have *0.7mm* thick walls. The thimble bears a decoration of finely machine stamped uniform honeycomb indentations culminating in a 'waffle' form on the crown. These decorations are the three main characteristics of machine-made thimbles of the 18th century (Hill, 1995, 89). The shape and design of this artefact is indicative of a thimble dating to 1730-1800 (Holmes, 1988).

Iron and Copper-alloy Nails

Accounting for 70 of the 78 metal finds, nails are by far the most prolific find type. Sixty eight of the nails are Iron and all are heavily corroded. By observing the ends of the nails, it is possible to determine the manufacturing process by analysing the nail cross-section, thus giving a rough date.

The three nail fragments found in fill [11405] of ditch cut [11404] are type B machine cut (1810-1900) or wire cut (1890-Present), giving them a firm post-medieval to modern date. The four nail fragments found in fill [4505] of ditch cut [4504] are large machine cut nails (owing to the rectangular cross-section), potentially all fragments are from one nail. These could either be type A or B machine cut nails giving a potential date between 1790-1900.

Thirty five nails were found in fill [7908] of a modern water drainage pipe cut [7906]. Twenty of these nails are clearly modern wire cut nails (1890-Present) and eight are possible Type B machine cut nails (1810-1900), meaning that this ditch is likely to date to the beginning of the 20th Century. Twenty six nails were found in [9010], the upper fill of ditch [9007]; 19 are wire cut (1890-Present) with seven being potential type B machine cut (1810-1900), indicating a post-medieval or modern date for this feature.

The two copper-alloy nails from fills [4505] and [3004] found in ditch [4504] and pit [3003] respectively are both handwrought, as is evidenced by the square cross-section and both likely to date to pre-1800 (Visser, 1988). Copper nails were often used instead of iron nails in mills and storage places, where the risk of sparking and fire was high. They were also often used decoratively (Nelson, 1962).

Iron Wire from Ditch [14404]

Four fragments of thin Fe wire were discovered in fill [11405] of ditch [14404] which are likely modern or post-medieval.

Conclusion and Recommendations

All the metal finds date to the post-medieval or modern period and are indicative of agricultural activity. Small Find 1, is likely a modern tool or machine component and is probably intrusive within ditch [3803], which otherwise yielded only Roman dated material (see other finds reports with these appendices). Small Find 2, a post-medieval thimble is the only domestic find, perhaps lost while carrying out agricultural tasks.

No further action should be taken on the assemblage as these are non-remarkable post-medieval or modern agricultural remnants. The items are not worthy of retention and can be discarded.

Catalogue of Finds

Table 1 below shows a full archive catalogue of all the metal finds.

Table 1, the Archive Catalogue

Trench	Cxt	Context Period	Cxt Type	Material	Find Type	SF	Date	NoF	W(g)	Manufacture Method	Comments
TR30	(3004)	Post-Medieval/ Modern	Pit fill	Copper-Alloy	Nail		Pre 1800	1	1	Cast/ Hand-wrought	A copper-alloy nail head, probably of Post Medieval date, about AD 1600 - 1800. Similar to a copper-alloy nail found in (4505)
TR38	(3804)	Roman	Ditch fill	/Iron	Agricultural Component	1	Post 16th century	1	89	Cast	Likely post 16th century component of an agricultural tool. Likely Post-Medieval or Modern
TR45	(4505)	Post-Medieval	Ditch fill	Iron	Nail		1790-1900	4	16	Machine Cut	Type A or B large machine cut nails (c.1790-1900). Rectangular cross-section.
TR45	(4505)	Post-Medieval	Ditch fill	Copper-Alloy	Nail		Pre 1800	1	2	Cast/ Hand-wrought	A copper-alloy nail, probably of Post-Medieval date, flat, circular head and a shaft which is square in cross-section, not machine made.
TR45	(4505)	Post-Medieval	Ditch fill	Copper-Alloy	Thimble	2	1730-1800	1	1	Machined	Copper-alloy thimble bearing finely machine stamped honeycomb indentations and a waffle crown.
TR79	(7908)	Modern (pre-1950s)	Cut of water drainage pipe fill	Iron	Nail		1810-Present	35	104	Machine Cut/ Wire Cut	Type B cut (1810-1900)/ Wire cut (1890-Present) nails.
TR90	(9010)	Post-Medieval	Linear ditch fill	Iron	Nail		1810-Present	26	173	Machine Cut/ Wire Cut	Type B cut (1810-1900)/ Wire cut (1890-Present) nails.
TR114	(11405)	Post-Medieval/ Modern	Ditch fill	Iron	Wire		Modern	4	4	Cut	Thin internal ferrous wire with possible non-ferrous coating.
TR114	(11405)	Post-Medieval/ Modern	Ditch fill	Iron	Nail		1810-Present	3	2	Machine Cut/ Wire Cut	Type B cut (1810-1900)/ Wire cut (1890-Present) nails.

Abbreviations

Cxt Context
NoF Number of fragments
SF Small find
W(g) Weight (grams)

Bibliography

Hill, E. (1995) Thimbles and Thimble Rings from the Circum-Caribbean Region, 1500-1800: Chronology and Identification. *Historical Archaeology*, 29(1), 84-92. Retrieved from www.jstor.org/stable/25616355 on 17th October 2018

Holmes, E. F. (1988) Sewing Thimbles. *Finds Research Group Datasheet 9. Finds Research group 700-1700, Norwich*

Nelson, L. H. (1968) Nail Chronology: as an aid to dating old buildings. *History News*, 23(11), 203-214.

Visser, T. D. (1997) *Field Guide to New England Barns and Farm Buildings*. Upne

Appendix 10: Industrial Residues Assessment Report

By Gary Taylor

Introduction

A total of 3 items weighing 8g were recovered.

Results

Context	Material	Description	No.	Wt(g)	Context date
10505	slag	Fuel ash slag, ferrous stained	1	5	
14905	coal	coal	2	3	Post-medieval?
Totals			3	8	

Provenance

The items were recovered from ditch fills (10505, 14905).

Discussion

A fragment of probable fuel ash slag was retrieved. This material is produced in high temperatures when silicates, in clay or rock, are in the presence of alkalis, found in the ashes of plant fuels. As such, they do not necessarily derive from metal working, but do indicate pyrotechnological processes (Historic England 2015, 59). This particular piece has some iron staining and may, in this instance, be associated with metal working.

Two fragments of unburnt coal were also retrieved. Found in an area where coal does not occur naturally, these are perhaps of post-medieval date.

Potential and Recommendations

Except for indicating high temperature processes at the site, the other finds are of limited potential and significance and can be discarded.

Context Date Summary

The dating in the following Table is based on the evidence provided by the finds detailed above.

Table 1, Summary of Context Dating

Cxt	Date (Century AD)	Comments
10505	undated	
14905	Post-medieval?	Based on coal

References

ClfA, 2008 *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials*

Historic England, 2015 *Archaeometallurgy Guidelines for Best Practice* (revised edition)

Abbreviations

ClfA Chartered Institute for Archaeologists

No. Number

Wt(g) Weight (grams)

Appendix 11: Animal Bone Assessment Report

Kevin Rielly, November 2018

Introduction

Some 170 strip trenches were excavated within the strip of land prepared for the By-Pass extending across open land to the east, north and north-west of Stubbington, a small town on the Hampshire coast just south of Fareham and 4km east of Portsmouth. Approximately one third (47) of these trenches provided archaeological evidence. Two field systems were observed, one believed to be Romano-British and the other Post-medieval to Modern. Small quantities of finds were recovered from both sets of ditches, with animal bones restricted to just two trenches – 27 and 59. These provided one hand collected fragment each. A series of deposits were sieved (bulk sampled) but these failed to provide any further animal bones.

7.1 Methodology

The bone was recorded to species/taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered.

7.2 Description of faunal assemblage

The site provided a total of 2 bones taken from two deposits – a cattle tooth in several fragments (possibly a maxillary molar) from the fill (5904) of the Late Iron Age/Early Roman ditch [5903] in Trench 59; and a probable cattle calcaneus fragment from the fill (2706) of a post medieval /modern ditch [2705] in Trench 27. This last bone is in a very poor condition but despite this, there is a clear chop mark through the neck of this bone (from a medial direction and then snapped), intended to remove the proximal end. It is also rather large, indicative of a bull or possibly one of the large improved cattle breeds dating from the late 18th and early 19th centuries (and see Rixson 2000,215).

Conclusion and recommendations for further work

The quantity of bones is clearly very small in comparison to the relatively large number of archaeological features. It can be surmised, considering the state of the two bones recovered and perhaps the absence of bones from the samples, that the soils are not conducive to bone survival. From this it can be suggested that while further work will undoubtedly add to this collection, the potential for recovering an assemblage which can provide any meaningful information concerning animal usage in this area, is extremely low.

References

Rixson, D, 2000 *The History of Meat Trading*, Nottingham University Press

Appendix 12: Shell Assessment Report

By Gary Taylor

Mollusc shells recovered during investigations on the Stubbington bypass, Hampshire, are reported, below. The finds were examined and reported in accordance with ClfA guidelines (2008).

Introduction

Three items weighing 10g were recovered.

Results

Context	Species	Description	No.	Wt(g)	Context date
2706	Oyster	Oyster, bottom shells	3	10	

Provenance

The items were recovered from a ditch fill (2706).

Discussion

Three oyster shell fragments were retrieved. They are probably food waste.

Potential and Recommendations

The mollusc shells indicate the consumption of these shellfish but are otherwise of limited potential and significance and can be discarded.

References

ClfA, 2008 *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials*

Abbreviations

ClfA Chartered Institute for Archaeologists

No. Number

Wt(g) Weight (grams)

Appendix 13: Glass Assessment Report

Chris Jarrett

INTRODUCTION

A small sized assemblage of glass was recovered from the site (less than one box). The glass dates entirely to the post-medieval period. None of the fragments show evidence for abrasion and were probably deposited fairly rapidly after breakage. All the glass is in a fragmentary state, although all the sherds could be assigned to an identifiable form. The glass was quantified by the number of fragments, weight and where possible the estimated number of vessels and this was recovered from six contexts and individual deposits produced only small sized groups (fewer than 30 shards). The glass was collected by hand.

All the glass (15 fragments, representing 10 vessels or items and weighing 381g, of which one fragment, 1 ENV, 2g was unstratified) was recorded in a database format, by type colour and form. The assemblage is discussed by vessel shapes, *etc.* and its distribution.

THE GLASS FORMS

The forms (and their quantification) is recorded as follows:

Bottle: 1 fragment, 1 ENV, 2g

Bottle, soda/drink: 1 fragment, 1 ENV, 75g

Jar, cylindrical: 1 fragment, 1 ENV, 34g

Window glass: 2 fragments, 2 ENV, 42g

Wine bottle, cylindrical, late-type: 3 fragments, 1 ENV, 202g

Wine bottle: 4 fragments, 2 ENV, 26g

The forms are discussed by function.

Alcohol storage/serving

Wine bottle

The wine bottle fragments were all made in soda glass and could only be broadly dated to the 18th-20th century. Three fragments made in olive green glass from a single vessel were noted in fill [4406], cut [4405], Trench 44 and consist of a cylindrical wall and parts of the base. In dark olive-green glass was recorded the neck of a wine bottle, which possibly has evidence of the mould seam and could indicate that the vessel was made in a Rickett's-type mould and dates to after c. 1810 (fill [3004], cut [3003], Trench 30).

Wine bottle, cylindrical, late-type

A wine bottle made in black/dark olive-green soda glass was formed in a Ricketts-type mould, which dates the item to after c. 1810. The vessel survives as a base with a rounded conical kick and wall fragments and it was found in fill [7908], cut [7906], Trench 79.

Architecture

Window Glass

The two fragments of window glass were made in clear soda glass and could only be broadly dated to the 19th-20th century. A thin walled fragment was found in fill [2706], cut [2705], Trench 27, while a 6mm thick rectangular fragment has frosted surfaces and fine striations on one surface, indicating that it was manufactured using a casting method. The latter was found in Trench 105 and fill [10505], cut [10504].

Drink storage/serving

Soda/soft drink bottle

The single vessel is represented by two fragments made in clear soda glass. A base fragment is embossed 'H. M. ...', while a shoulder sherd is embossed with a diamond and hexagon tessellated pattern. The bottle represents a branded item for a soft drink and dates to the 20th century. The vessel was found in fill [7908], cut [7906], Trench 79.

Storage

Cylindrical jar

The form survives only as a cylindrical wall sherd with the base surviving as a rounded heel and the vessel is made in opaque white (milk) glass, dated from c. 1870. The jar could have contained a variety of products, such as a cosmetic or pharmaceutical or preparation. The vessel was recovered from fill [11405], cut 11404], Trench 114.

DISTRIBUTION

A summary of the distribution of the glass is shown in Table 1.

Context	Cut Trench	No. of frags	ENV	Wt. (g)	Forms	Spot date
0		98	1	1	2 Bottle	19th-20th century
2706	2705	27	1	1	1 Window glass	19th-20th century
3004	3003	30	1	1	2 Wine bottle	18th-20th century
4406	4405	44	3	1	24 Wine bottle	18th-20th century
7908	7906	79	5	2	231 Bottle, sods, wine bottle, cylindrical late-type	20th century
10505	10504	105	1	1	41 Window glass	19th-20th century
11405	11404	114	3	3	80 Bottle, jar: cylindrical	1870+

Table 1. SBSH18: Distribution of the glass.

SIGNIFICANCE AND POTENTIAL OF THE COLLECTION AND RECOMMENDATIONS FOR FURTHER WORK

The glass is of no significance as it consists of frequently recorded 19th -century and later forms, which are in a fragmentary state and occur in small groups with little meaning. The only potential of the glass is to date the contexts it was recovered from. There are no recommendations for further work on the assemblage.

Appendix 14: Clay Pipe Assessment Report

Chris Jarrett

The assemblage consists of a single stem found in fill [10505], ditch [10504] (Trench 105). The stem is thin with a fine bore and it is most likely to be of a 19th-century date. The stem would appear to be intrusive in a Romano-British dated feature.

The material is of no significance as it has little meaning. The stem has no potential for further research as it appears to be an intrusive item. There are no recommendations for further work on the item.

Appendix 15: OASIS Record

OASIS ID: preconst1-334345

Project details

Project name	Stubbington Bypass, Hampshire: An Archaeological Evaluation
Short description of the project	Pre-Construct Ltd (PCA) was appointed by Hampshire County Council to undertake a geophysical survey and archaeological evaluation on the route of the proposed Stubbington Bypass. This report provides the results of the evaluation which comprised of 157, 25m x 2m trenches. Opened between the 6th of August - 19th of October 2018. The evaluation has demonstrated that areas of the site contain archaeological remains dating to three different time periods; Iron Age, Romano-British and Post-Medieval. The Iron Age and Roman features identified are thought to represent evidence of a field systems. A small square, Romano-British enclosure of unknown purpose was also identified. The activity of these periods is split across two areas of the site. The first around Plot 12, and the second in the middle of Plot 15. Post-Medieval features were identified and investigated, but were not thought to represent a significant archaeological resource.
Project dates	Start: 06-08-2018 End: 19-10-2018
Previous/future work	No / Not known
Any associated project reference codes	SBSH18 - Sitecode
Any associated project reference codes	P/15/0718/CC - Planning Application No.
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	FIELD SYSTEM Late Iron Age
Monument type	FIELD SYSTEM Roman
Monument type	FIELD SYSTEM Post Medieval
Monument type	SQUARE ENCLOSURE Roman
Significant Finds	NONE None
Methods & techniques	"Sample Trenches", "Targeted Trenches"
Development type	Road scheme (new and widening)
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	HAMPSHIRE FAREHAM FAREHAM Stubbington Bypass

Postcode	PO14 2EA
Study area	0 Square metres
Site coordinates	SU 55608 04847 50.839914774065 -1.210153827129 50 50 23 N 001 12 36 W Point

Project creators

Name of Organisation	PCA Winchester
Project brief originator	Hampshire County Council
Project design originator	Thomas Hayes
Project director/manager	Thomas Hayes
Project supervisor	Gareth Howland
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Hampshire County Council

Project archives

Physical Archive recipient	Hampshire Cultural Trust
Physical Contents	"Animal Bones", "Ceramics", "Glass", "Metal", "Worked stone/lithics"
Digital Archive recipient	Hampshire Cultural Trust
Digital Contents	"Stratigraphic", "Survey"
Digital Media available	"Database", "Images raster / digital photography", "Spreadsheets", "Survey", "Text"
Paper Archive recipient	Hampshire Cultural Trust
Paper Contents	"Stratigraphic"
Paper Media available	"Context sheet", "Drawing", "Plan", "Report", "Section"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Stubbington Bypass, Hampshire: An archaeological evaluation report
Author(s)/Editor(s)	Howland, G
Date	2018
Issuer or publisher	PCA Winchester

Place of issue or publication	Winchester
Description	A4 ringbound client report, unpublished.
Entered by	Gareth Howland (gareth.hatt@googlemail.com)
Entered on	20 November 2018

Appendix 16: Geophysical Survey Report (SUMO)

GEOPHYSICAL SURVEY REPORT

sumo

Survey

GEOPHYSICS FOR
ARCHAEOLOGY &
ENGINEERING

Stubbington Bypass, Hampshire

Client
Pre-Construct Archaeology Ltd

Survey Report
13312

Date
August 2018

SUMO Geophysics Ltd
Cowburn Farm
Market Street
Thornton
Bradford
BD13 3HW
T: 01274 835016

SUMO Geophysics Ltd
Vineyard House
Upper Hook Road
Upton upon Severn
Worcestershire
WR8 0SA
T: 01684 592266

geophysics@sumoservices.com
www.sumoservices.com

GEOPHYSICAL SURVEY REPORT

Project name:
Stubbington Bypass, Hampshire

SUMO Job reference:
13312

Client:
Pre-Construct Archaeology Ltd

Survey date:
6-10 August 2018

Report date:
30 August 2018

Field co-ordinator:
Jonathan Hunter BA

Field Team:
Charlotte Mansfield BSc
Oliver Thomas

Report written by:
Rebecca Davies BSc

CAD illustrations by:
Rebecca Davies BSc

Project Manager:
Simon Haddrell BEng AMBCS PCIfA

Report approved by:
Dr John Gater BSc DSc(Hon) MCIfA FSA

TABLE OF CONTENTS

1	SUMMARY OF RESULTS	1
2	INTRODUCTION	1
3	METHODS, PROCESSING & PRESENTATION	2
4	RESULTS	3
5	DATA APPRAISAL & CONFIDENCE ASSESSMENT	3
6	CONCLUSION	3
7	REFERENCES	4
	Appendix A Technical Information: Magnetometer Survey Method	
	Appendix B Technical Information: Magnetic Theory	

LIST OF FIGURES

Figure 01	1:25 000	Site Location Diagram
Figure 02	1:8500	Location of Survey Areas
Figure 03	1:8500	Magnetometer Survey - Greyscale Plots - Overview
Figure 04	1:8500	Magnetometer Survey - Interpretation - Overview
Figure 05	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 1
Figure 06	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Areas 3 and 4
Figure 07	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 5
Figure 08	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Areas 6, 7 and 8
Figure 09	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 10 - North
Figure 10	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 10 - Centre
Figure 11	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 10 - South
Figure 12	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 12 - North
Figure 13	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 12 - South
Figure 14	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Areas 14 and 15
Figure 15	1:1250	Magnetometer Survey - Greyscale Plot & Interpretation - Area 16
Figure 16	1:8500	Minimally Processed Data – Greyscale Plots

1 SUMMARY OF RESULTS

A detailed magnetometer survey was conducted over approximately 14.6 ha of arable farmland around Stubbington, Hampshire. No definite archaeological anomalies have been identified. Linear features of possible archaeological provenance have been detected in one area, while linear trends of uncertain origin are present in several areas. Evidence of modern ploughing is visible in the data, along with former field boundaries, land drains and underground services.

2 INTRODUCTION

2.1 Background synopsis

SUMO Geophysics Ltd were commissioned to undertake a geophysical survey of an area outlined for the construction of a bypass. This survey forms part of an archaeological investigation being undertaken by **Pre-Construct Archaeology Ltd**.

2.2 Site details

NGR / Postcode	North: SU 545 049 / PO14 3ER South: SU 568 026 / PO14 2AA
Location	The site is made up of 16 fields forming a curved survey area to the north-east of Stubbington, Hampshire. The site runs from the B3334 in the north-west, crossing Ranvilles Lane, Peel Lane and Newlands Farm before running alongside the sewage works and terminating at the B3334 in the south.
HER/SMR	Hampshire
District	Fareham
Parish	Stubbington
Topography	Mostly level
Current Land Use	Arable / Pasture
Geology	Solid: Wittering Formation - sand, silt and clay (north-west / south); Whitecliff Sand Member - sand (north-east). Superficial: River Terrace Deposits (undifferentiated) - sand, silt and clay (north-east/south) (BGS 2018).
Soils	Hamble 2 Association (571z) - deep stoneless well drained silty soils and similar soils affected by groundwater (north-west); Fladbury 3 Association (813d) - stoneless clayey, fine silty and fine loamy soils affected by groundwater (south) (SSEW 1983).
Archaeology	No details available.
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	c. 18.6 ha - approximately 4 ha could not be surveyed due to mature crop.

2.3 Aims and Objectives

To locate and characterise any anomalies of possible archaeological interest within the study area.

3 METHODS, PROCESSING & PRESENTATION

3.1 Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (CIfA 2014) and the European Archaeological Council (EAC 2016).

3.2 Survey methods

Detailed magnetic survey was chosen as an efficient and effective method of locating archaeological anomalies.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1.0m	0.25m

More information regarding this technique is included in Appendices A and B.

3.3 Data Processing

The following basic processing steps have been carried out on the data used in this report:

De-stripe; de-stagger; interpolate

3.4 Presentation of results and interpretation

The presentation of the results includes a 'minimally processed data' and a 'processed data' greyscale plot. Magnetic anomalies are identified, interpreted and plotted onto the 'Interpretation' drawings.

When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to other existing evidence, the anomalies will be given specific categories, such as: *Abbey Wall* or *Roman Road*. Where the interpretation is based largely on the geophysical data, levels of confidence are implied, for example: *Probable*, or *Possible Archaeology*. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification *Possible*.

4 RESULTS

The survey has been divided into sixteen survey areas (Areas 1-16).

4.1 ***Probable / Possible Archaeology***

4.1.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest.

4.1.2 A series of weak linear trends have been detected in Area 5 and have been categorised as having possible archaeological origins. The anomalies are characteristic of cut features, such as ditches, though the magnetic responses are weak making further interpretation difficult.

4.2 ***Uncertain***

4.2.1 Weak linear trends are visible in several areas (Areas 4, 10, 12 and 14) and are of uncertain origin. These are unlikely to be archaeological but are thought to be related to possible former field boundaries or other agricultural activity.

4.3 ***Former Field Boundary***

4.3.1 Two positive linear anomalies in Area 10 correspond with the locations of former field boundaries visible on historic OS mapping.

4.3.2 Similar linear anomalies have been mapped in Area 12. These are likely to relate to former field boundaries though no such features are visible in the same locations on available historic maps.

4.4 ***Agricultural – Ploughing / Land Drains***

4.4.1 Closely spaced, parallel linear anomalies are visible across large parts of the site and are a result of modern agricultural activity, such as ploughing.

4.4.2 Weak dipolar linear anomalies can be seen in several areas (Areas 5, 8, 10, 12 and 14) and indicate modern field drains.

4.5 ***Ferrous / Magnetic Disturbance***

4.5.1 Strong bipolar linear anomalies have been identified in Areas 10 and 12. These are associated with underground services such as pipes, cables or drains / culverts.

4.5.2 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

5 DATA APPRAISAL & CONFIDENCE ASSESSMENT

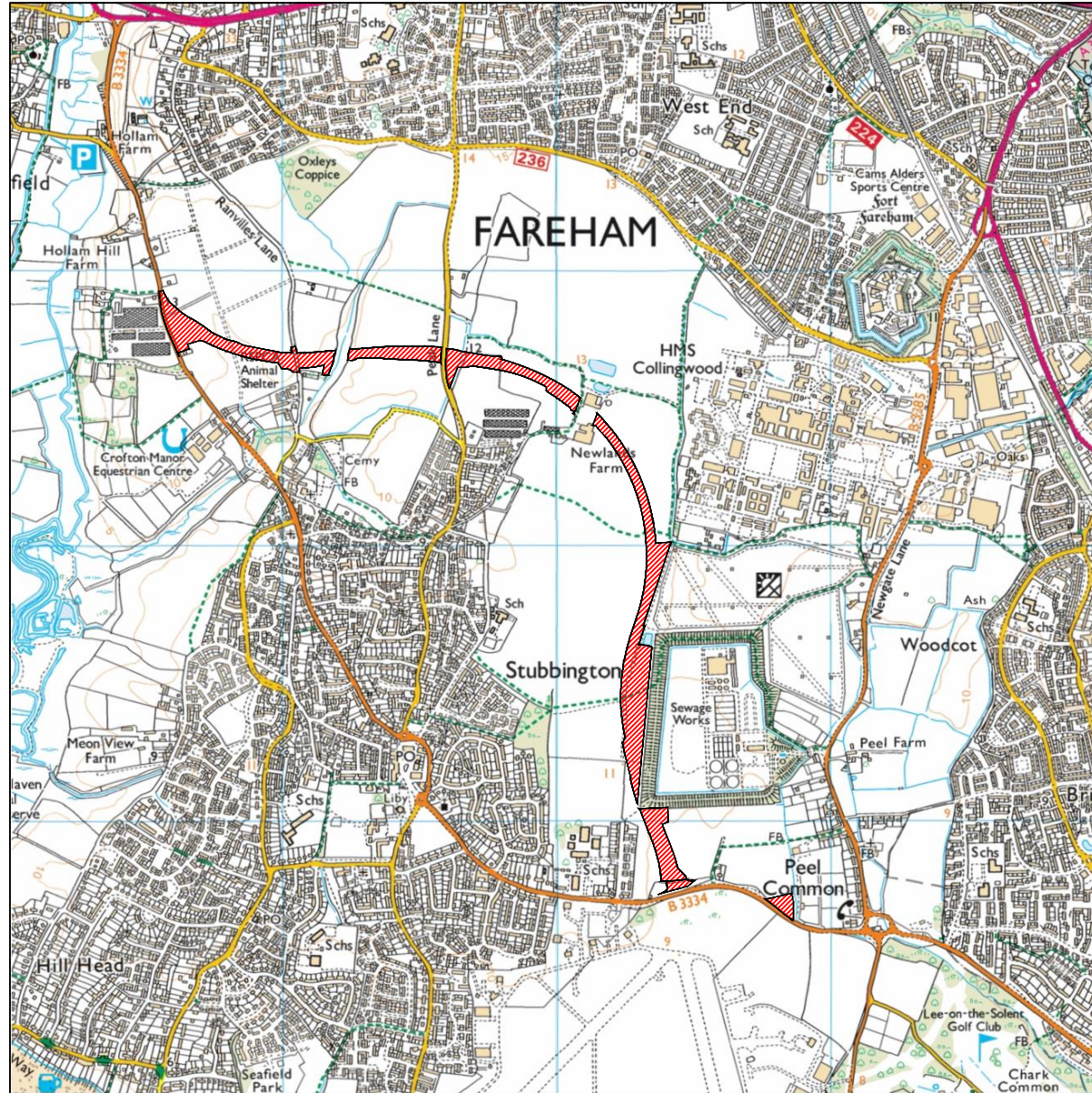
- 5.1 Historic England guidelines (EH 2008) Table 4 states that the average magnetic response on sand and river terrace deposits can be variable. The results from this survey indicate the presence of possible archaeological anomalies, along with field boundaries and evidence of ploughing. It is therefore likely that any archaeological features would have been detected, if present.

6 CONCLUSION

- 6.1 The survey at Stubbington has not identified any definite archaeological anomalies, however a series of possible ditch-like responses may have an archaeological provenance. Linear anomalies of uncertain origin have been identified though they are probably a result of agricultural activity. Former field boundaries and field drains have been mapped, while the remaining responses include ploughing effects, underground services and disturbance from nearby ferrous objects.

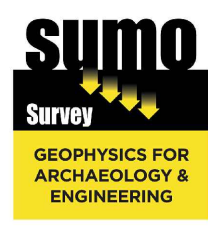
7 REFERENCES

- BGS 2018 British Geological Survey, Geology of Britain viewer [Accessed 30/08//2018] *website*: (<http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps>)
- ClfA 2014 *Standard and Guidance for Archaeological Geophysical Survey*. Amended 2016. ClfA Guidance note. Chartered Institute for Archaeologists, Reading
http://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics_2.pdf
- EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological Council, Guidelines 2.
- EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon
<https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/>
- SSEW 1983 *Soils of England and Wales. Sheet 6, South East England*. Soil Survey of England and Wales, Harpenden.



 Site Location

Reproduced from Ordnance Survey's 1:25 000 map of 1998 with the permission of the controller of Her Majesty's Stationery Office.
Crown Copyright reserved.
Licence No: 100018665



Title:
Site Location Diagram

Client:
Pre-Construct Archaeology Ltd

Project:
13312 - Stubbington Bypass, Hampshire

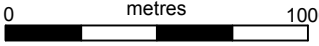


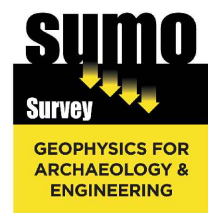
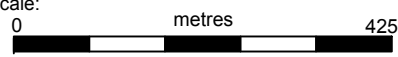
Scale:

1:25000 @ A3

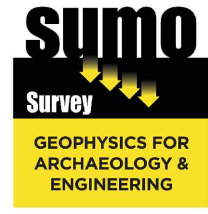
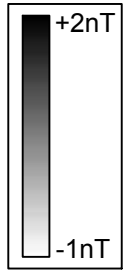
Fig No:
01



	Survey Area - showing 30m grid
	Unsurveyable



Title:	Location of Survey Areas	
Client:	Pre-Construct Archaeology Ltd	
Project:	13312 - Stubbington Bypass, Hampshire	
Scale:	 1:8500 @ A3	Fig No: 02



Title: Magnetometer Survey - Grayscale Plots - Overview

Client: Pre-Construct Archaeology Ltd










Project: 13312 - Stubbington Bypass, Hampshire

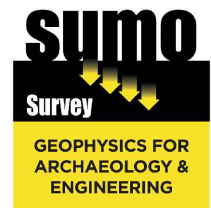
Scale: 0 metres 425
1:8500 @ A3

Fig No: 03



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



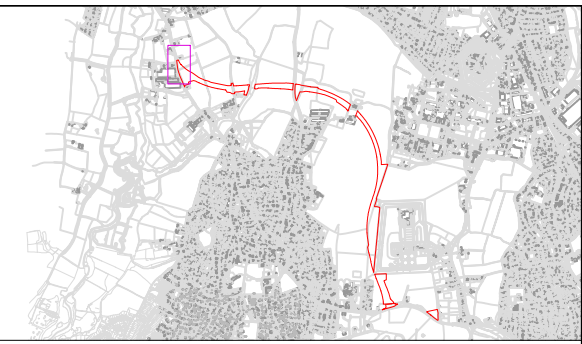
Title: Magnetometer Survey - Interpretation - Overview

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

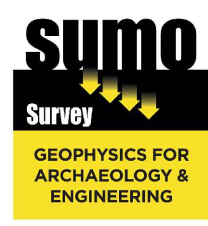
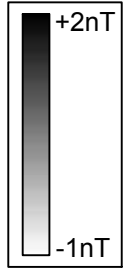
Scale: 0 metres 425
1:8500 @ A3

Fig No: 04



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



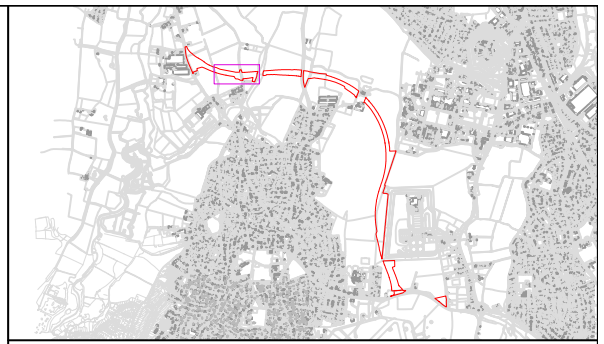
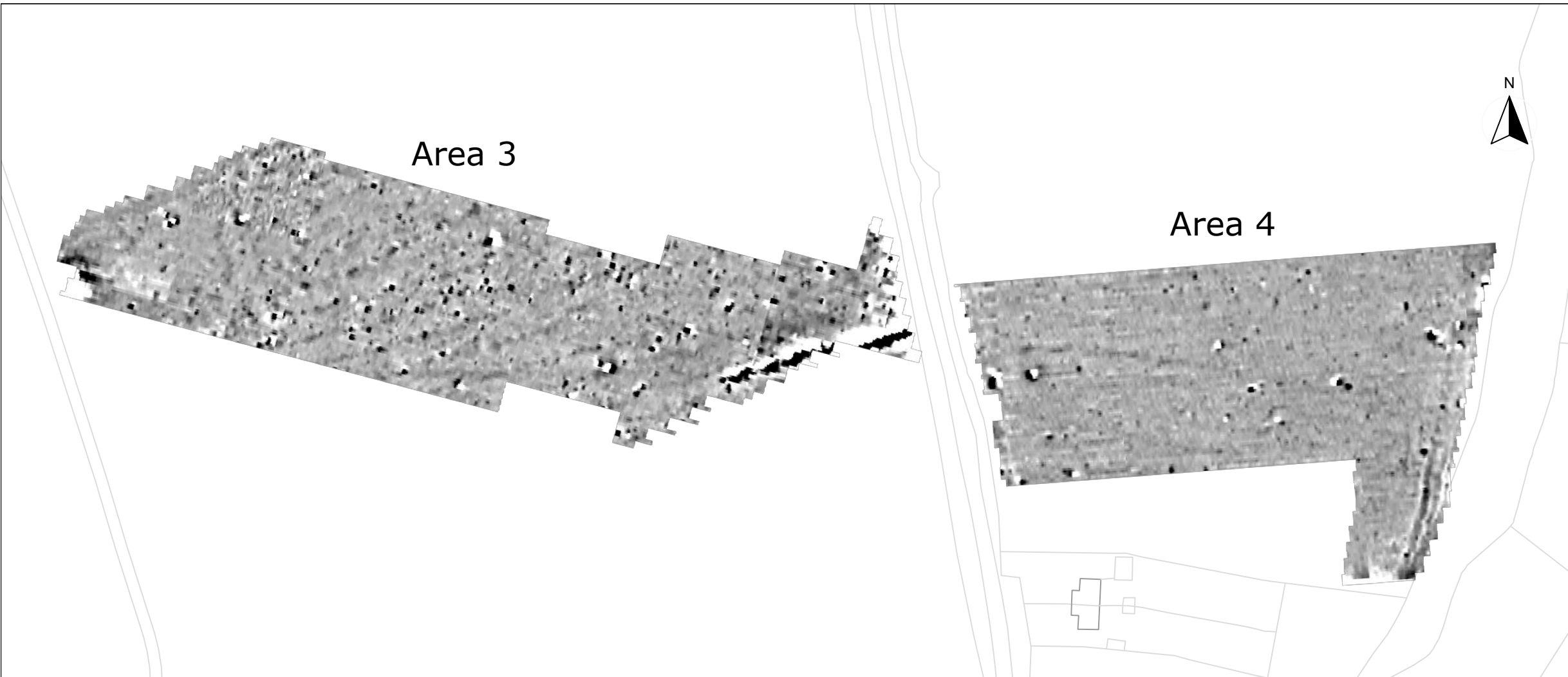
Title: Magnetometer Survey - Greyscale Plot & Interpretation - Area 1

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

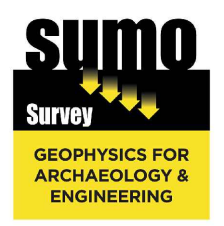
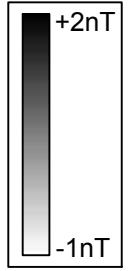
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 05



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



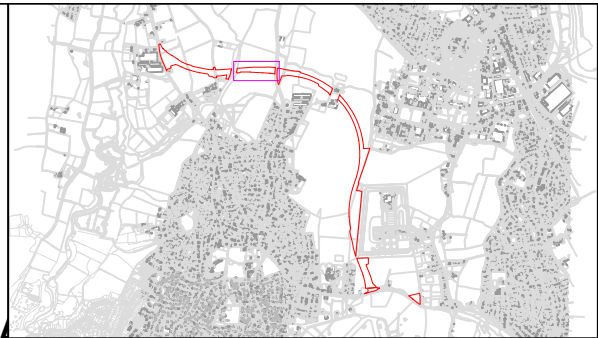
Title: Magnetometer Survey - Greyscale Plots & Interpretation - Areas 3 and 4

Client: Pre-Construct Archaeology Ltd

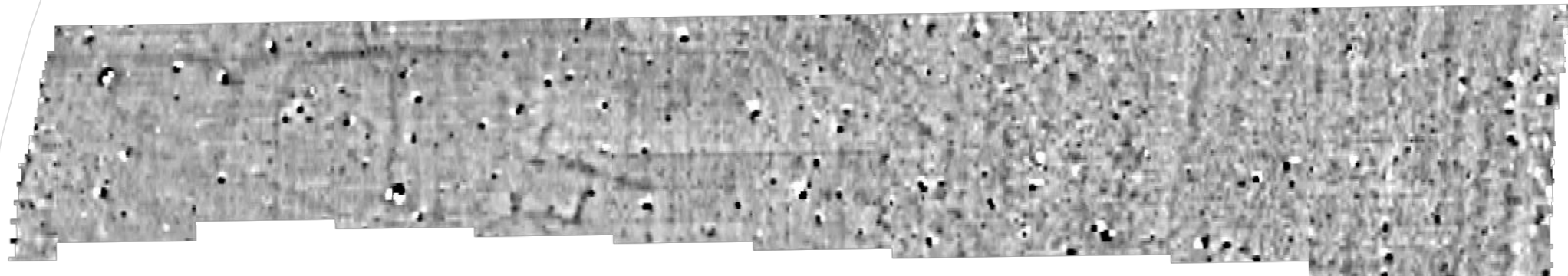
Project: 13312 - Stubbington Bypass, Hampshire

Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 06



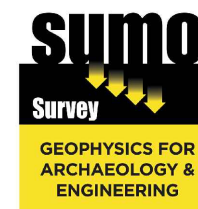
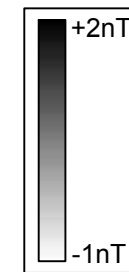
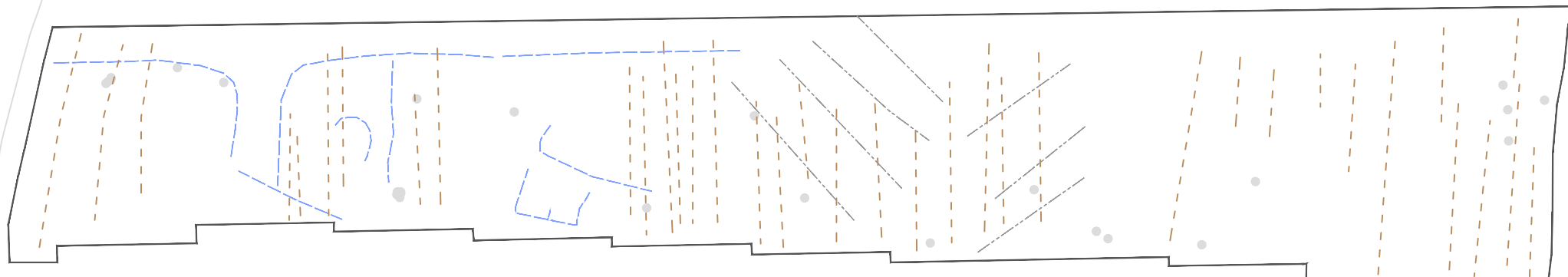
Area 5



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous

Area 5



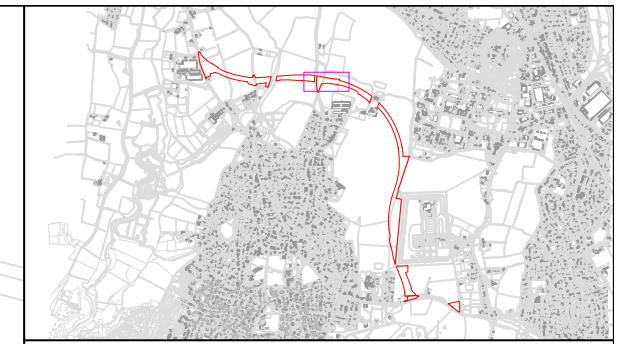
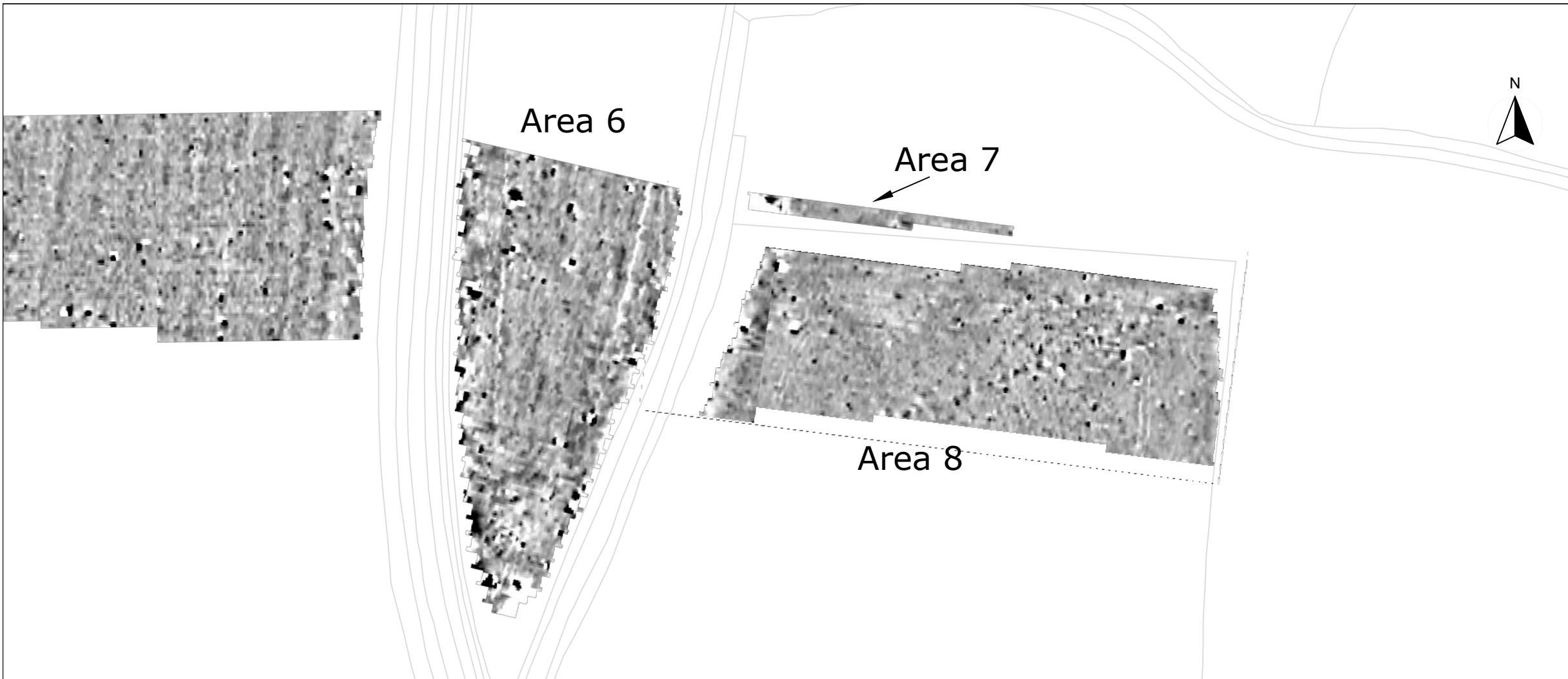
Title: Magnetometer Survey - Greyscale Plot & Interpretation - Area 5

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

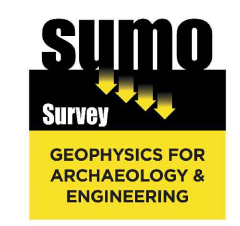
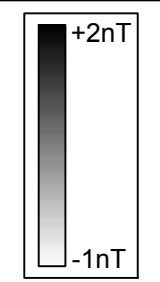
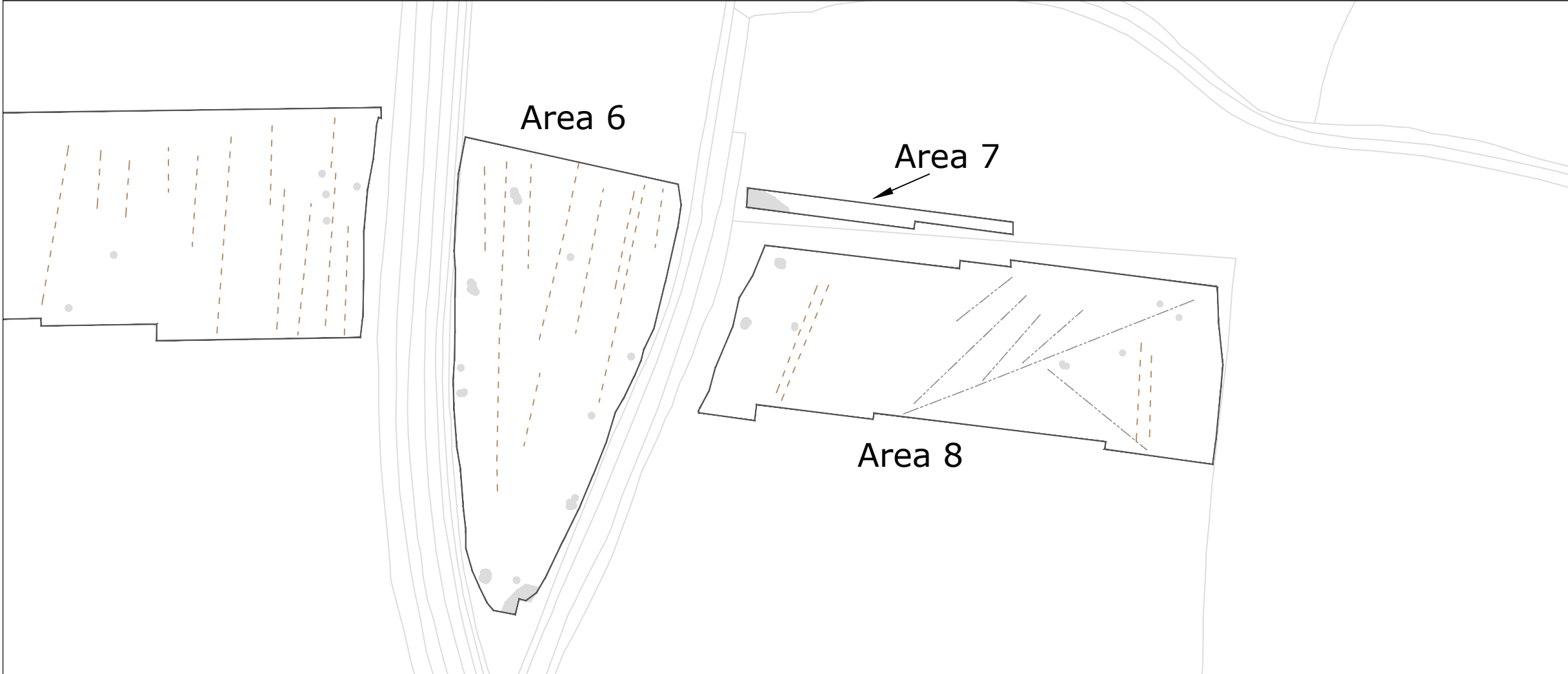
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 07



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



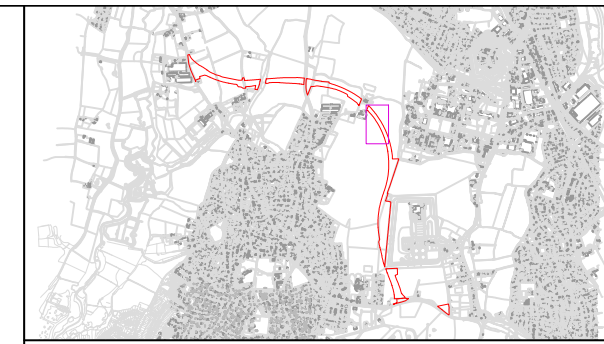
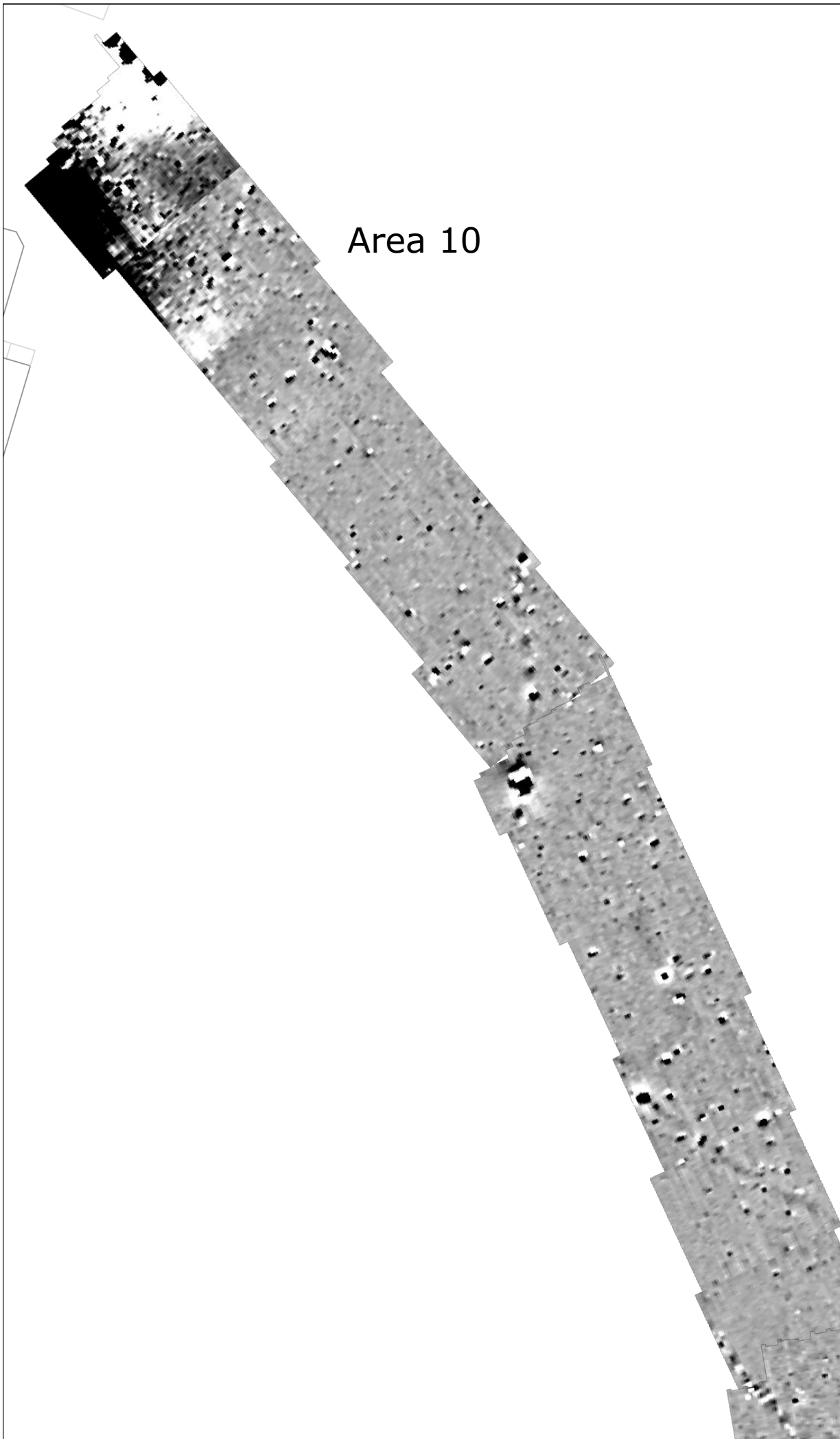
Title: Magnetometer Survey - Greyscale Plots & Interpretation - Areas 6, 7 and 8

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

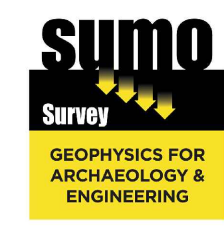
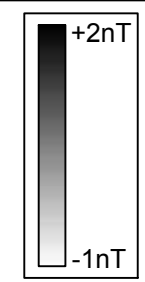
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 08



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Greyscale Plots & Interpretation - Area 10 - North

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

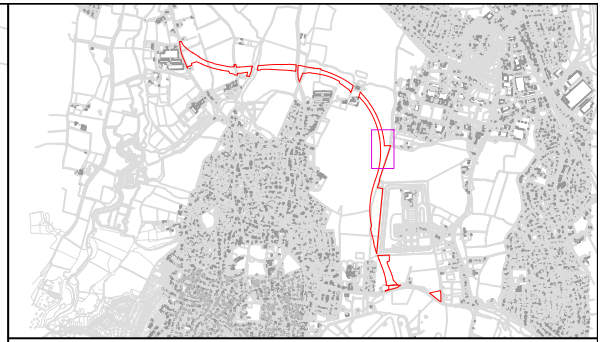
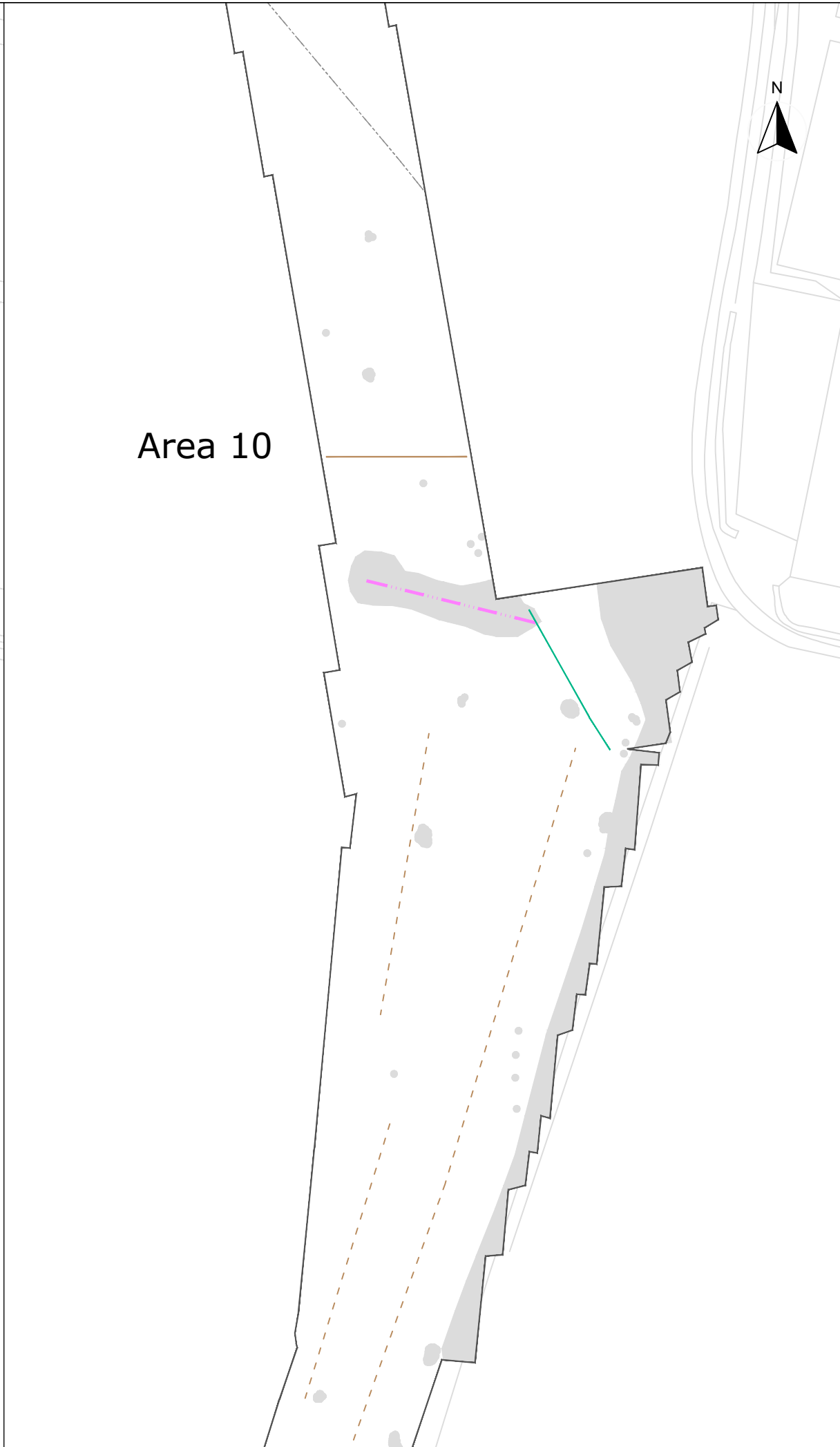
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 09

Area 10

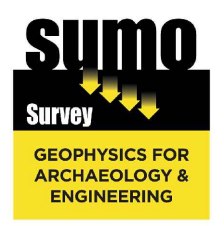
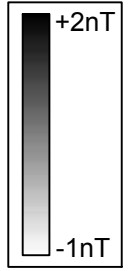


Area 10



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Greyscale Plots & Interpretation - Area 10 - Centre

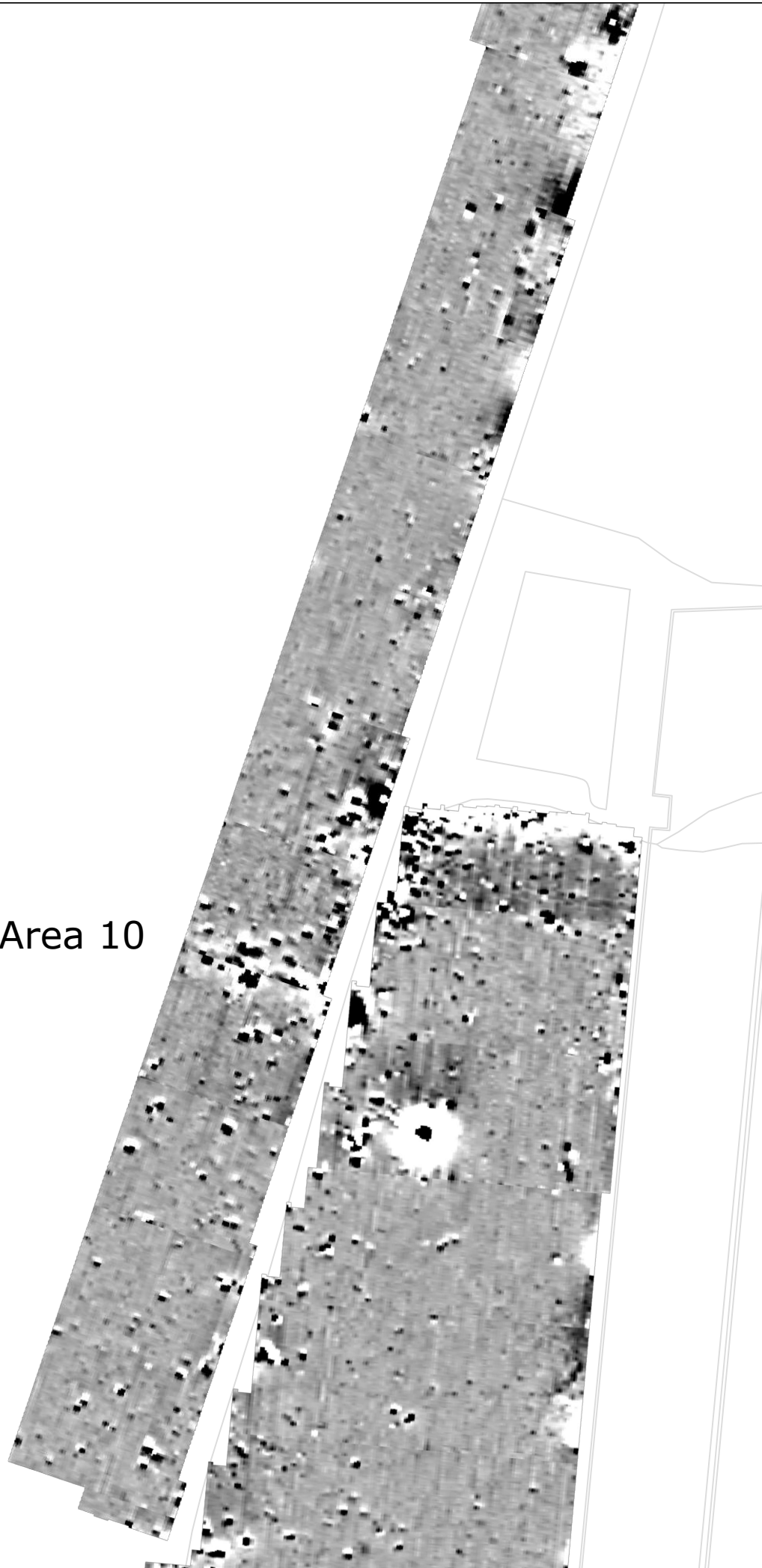
Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

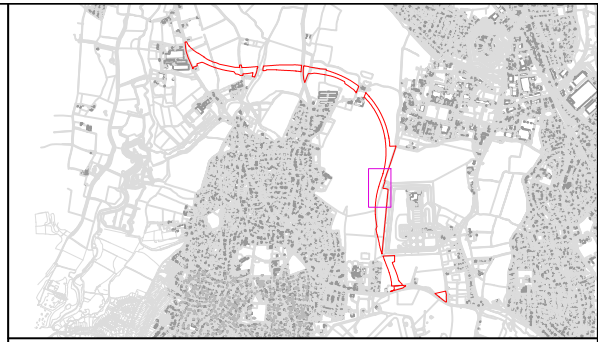
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 10

Area 10

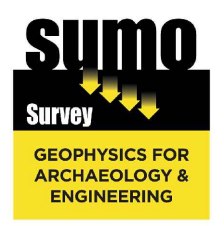
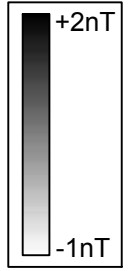


Area 10



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Greyscale Plots & Interpretation - Area 10 - South

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

Scale: 0 metres 62.5
1:1250 @ A3

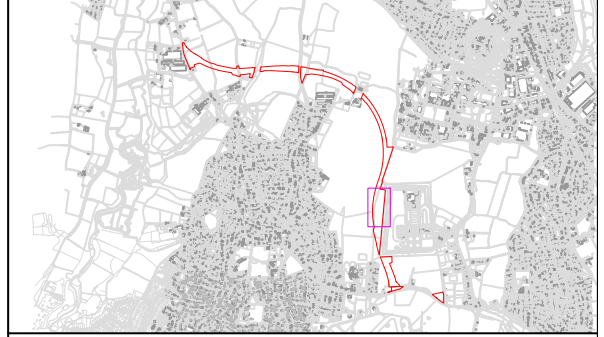
Fig No: 11

Area 10

Area 10

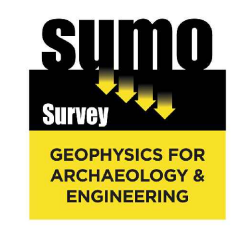
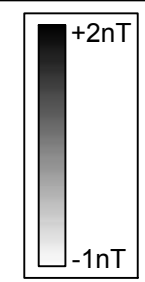
Area 12

Area 12



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Greyscale Plots & Interpretation - Area 12 - North

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

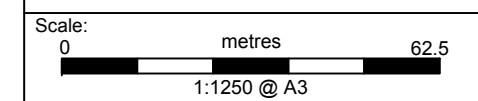
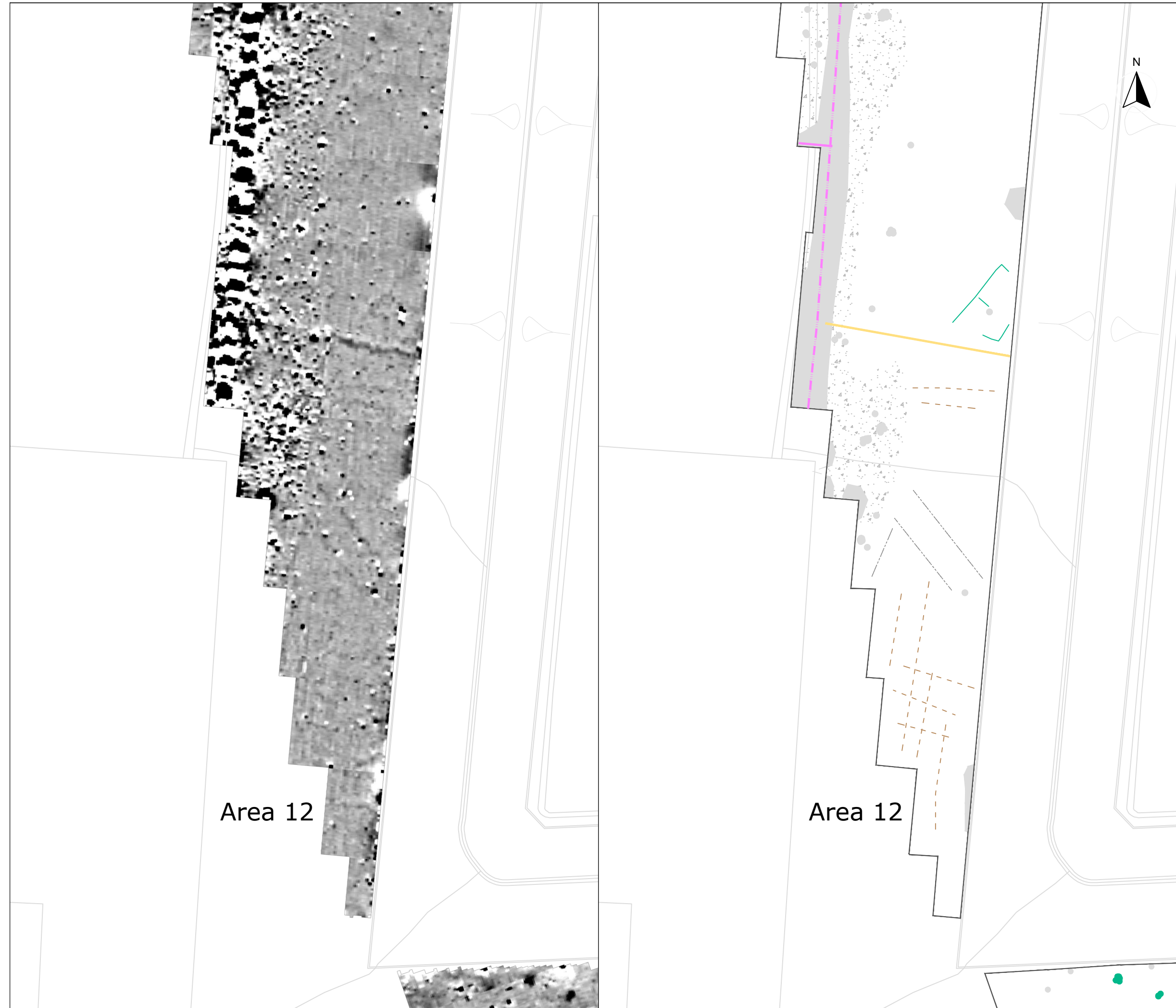
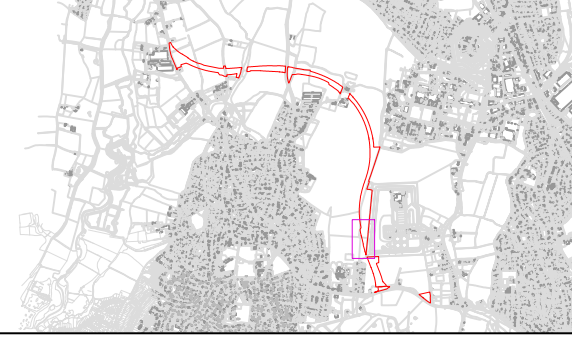


Fig No: 12



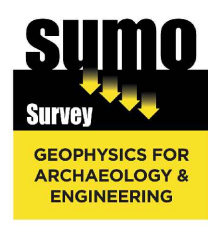
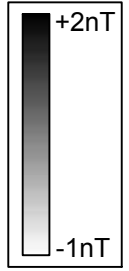
Area 12

Area 12



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



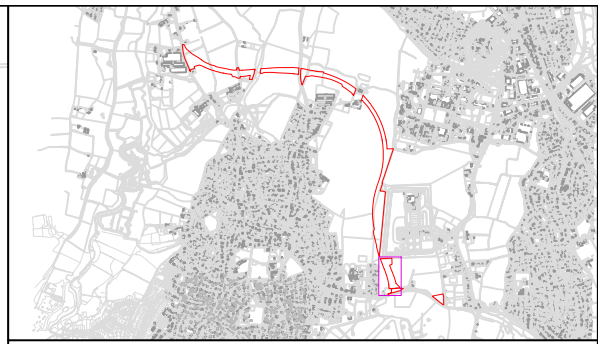
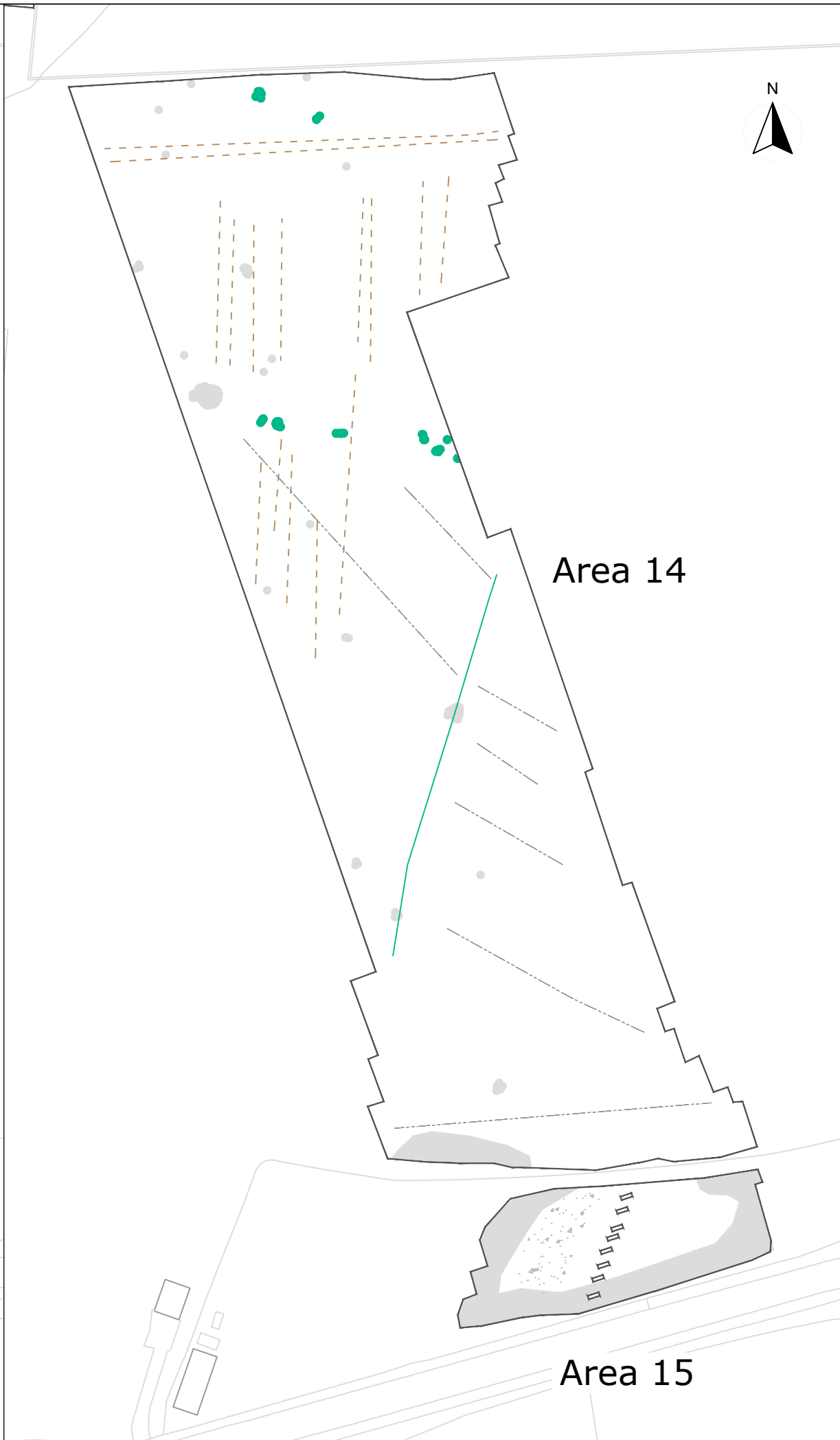
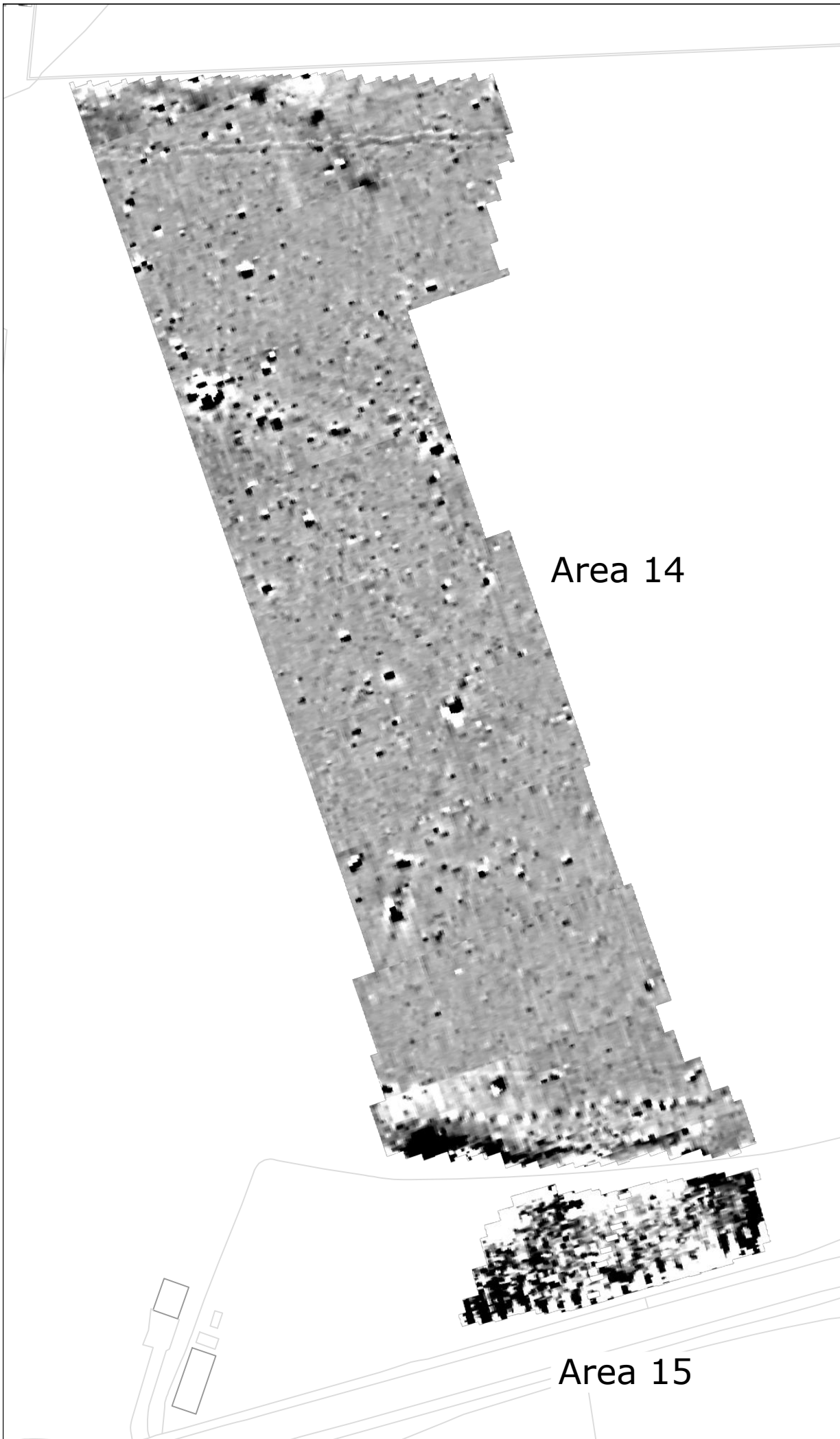
Title: Magnetometer Survey - Greyscale Plots & Interpretation - Area 12 - South

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

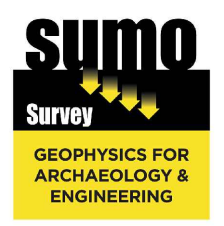
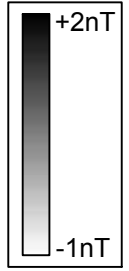
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 13



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



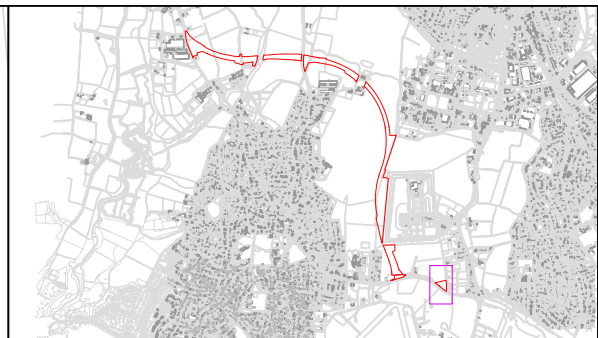
Title: Magnetometer Survey - Greyscale Plots & Interpretation - Areas 14 and 15

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

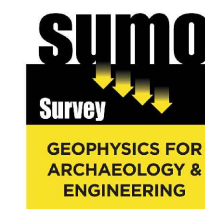
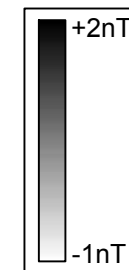
Scale: 0 metres 62.5
1:1250 @ A3

Fig No: 14



KEY

	Possible archaeology (trend)
	Uncertain Origin (discrete anomaly / trend)
	Former field boundary (corroborated)
	Former field boundary (conjectural)
	Agriculture (plough)
	Land drain
	Magnetic disturbance
	Service
	Ferrous



Title: Magnetometer Survey - Greyscale Plot & Interpretation - Area 16

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

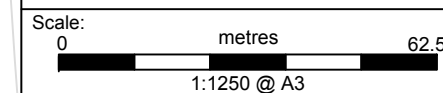
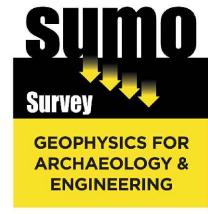
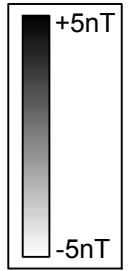


Fig No: 15



Title: Minimally Processed Data - Greyscale Plots

Client: Pre-Construct Archaeology Ltd

Project: 13312 - Stubbington Bypass, Hampshire

Scale: 0 metres 425
1:8500 @ A3

Fig No: 16

Appendix A - Technical Information: Magnetometer Survey Method

Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1m	0.25m

Instrumentation: **Bartington Grad 601-2**

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted vertically, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths. The Bartington instrument can collect two lines of data per traverse with gradiometer units mounted laterally with a separation of 1.0m. The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

Data Processing

Zero Mean Traverse	This process sets the background mean of each traverse within each grid to zero. The operation removes striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

Display

Greyscale/ Colourscale Plot	This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.
--------------------------------	---

Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall, etc.*) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

<i>Archaeology / Probable Archaeology</i>	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
<i>Possible Archaeology</i>	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
<i>Industrial / Burnt-Fired</i>	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
<i>Former Field Boundary (probable & possible)</i>	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
<i>Ridge & Furrow</i>	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
<i>Agriculture (ploughing)</i>	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
<i>Land Drain</i>	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
<i>Natural</i>	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
<i>Magnetic Disturbance</i>	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present. They are presumed to be modern.
<i>Service</i>	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
<i>Ferrous</i>	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.
<i>Uncertain Origin</i>	Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of <i>Possible Archaeology / Natural</i> or (in the case of linear responses) <i>Possible Archaeology / Agriculture</i> ; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

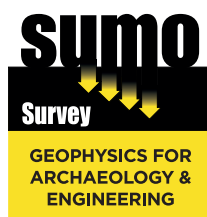
Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.



- Archaeological
- Geophysical
- Laser Scanning
- Measured Building
- Topographic
- Utility Mapping

SUMO Services Ltd, incorporated under the laws of England and Wales,
Company Registration No.4275993.
Registered Office Unit 8 Hayward Business Centre, New Lane, Havant, Hampshire, PO9 2NL

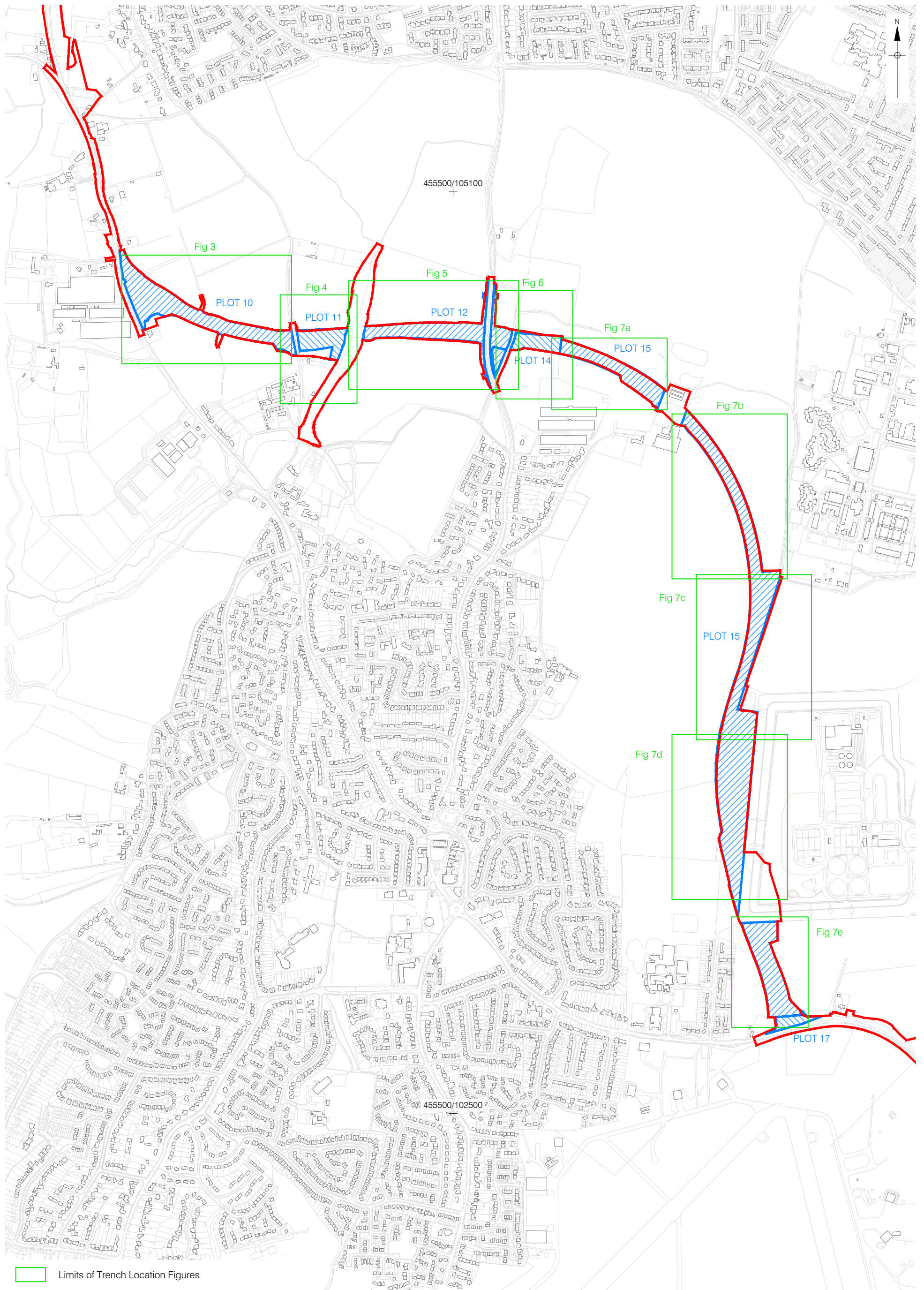


Contains Ordnance Survey data © Crown copyright and database right 2018

© Pre-Construct Archaeology Ltd 2018

19/07/18 MR

Figure 1
Site Location
1:2,000,000, 1:500,000 & 1:25,000 at A4





Archaeological Feature
 Trench containing Archaeology

0 50m

Figure 3
 Trench Locations in Mitigation Plot 10
 1:1,250 at A3



0 50m

Figure 4
 Trench Locations in Mitigation Plot 11
 1:1,250 at A4

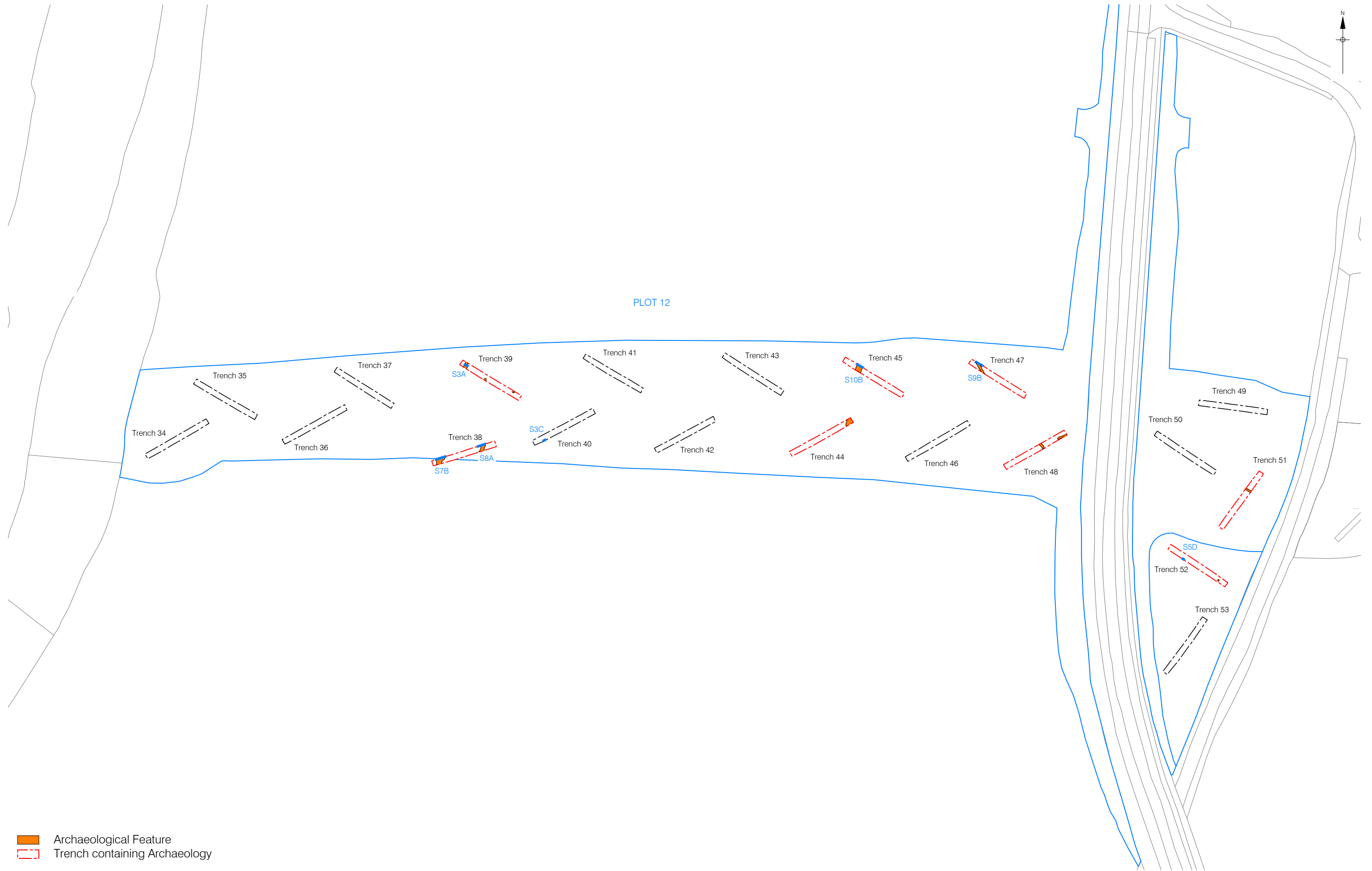
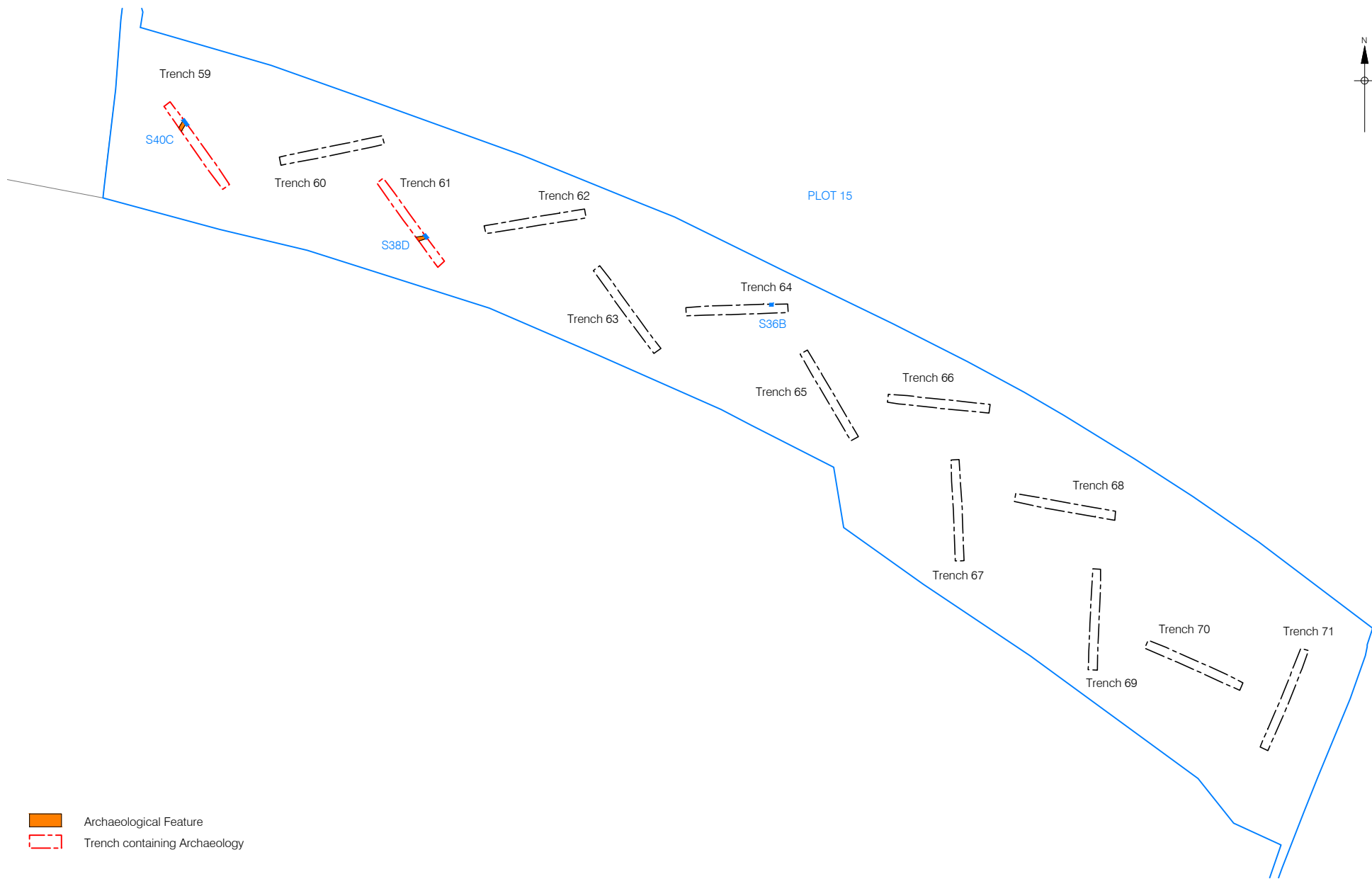


Figure 5
 Trench Locations in Mitigation Plot 12
 1:1,250 at A3



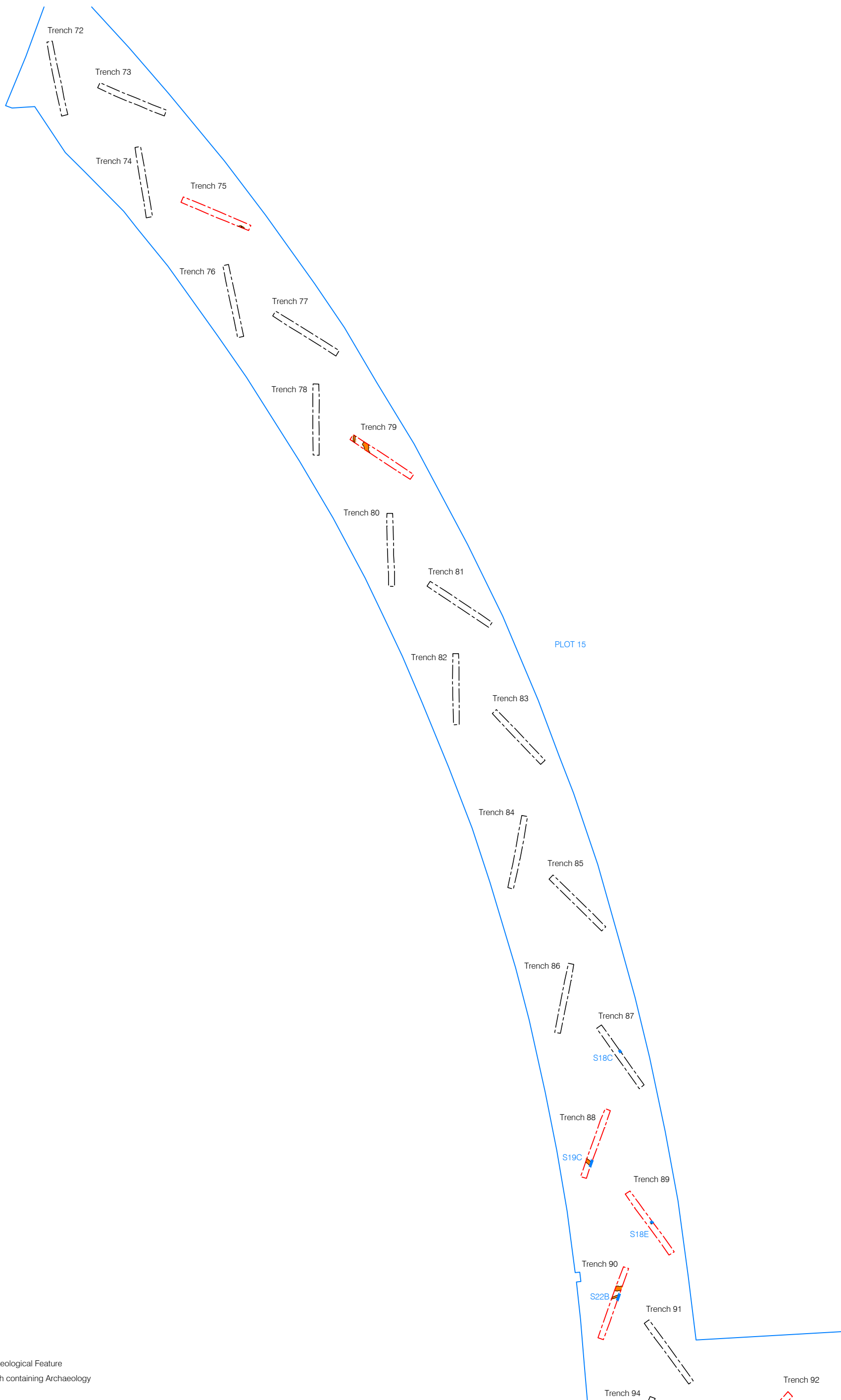
Figure 6
 Trench Locations in Mitigation Plot 14
 1:1,250 at A4



- Archaeological Feature
- Trench containing Archaeology

0 50m

Figure 7a
 Trench Locations in Mitigation Plot 15
 1:1,250 at A4





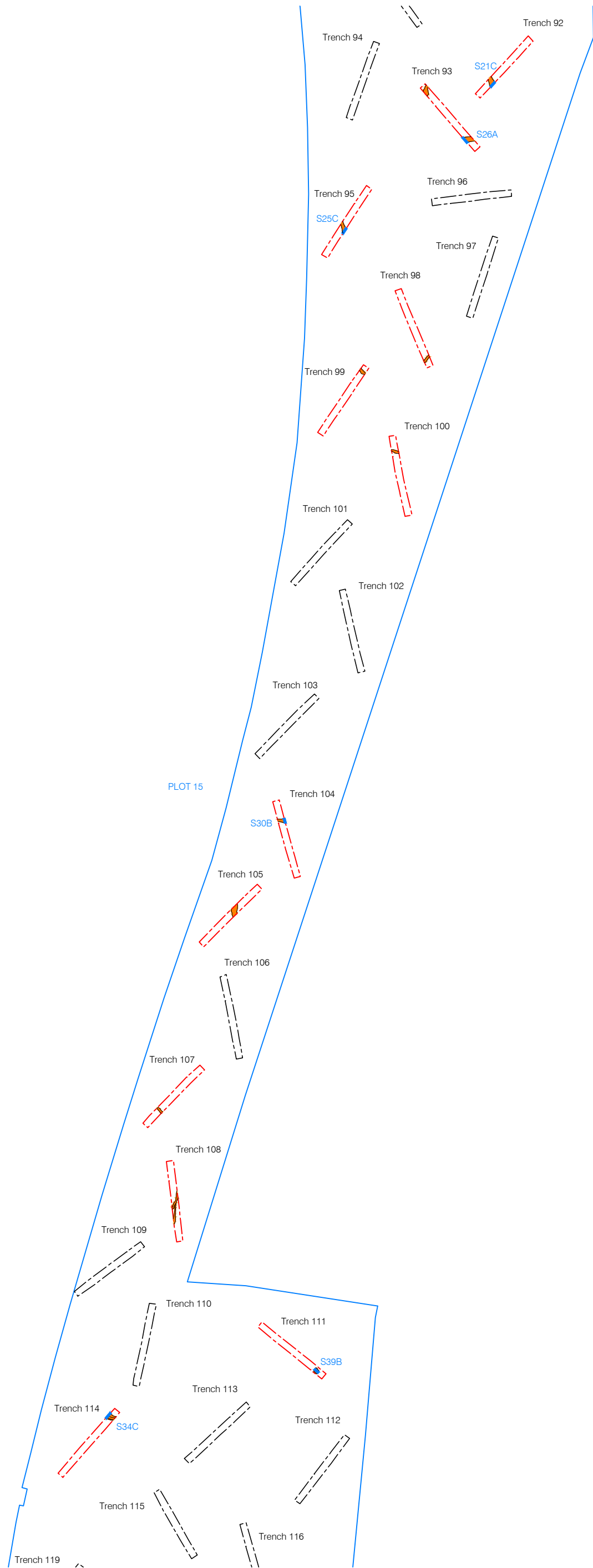
-  Archaeological Feature
-  Trench containing Archaeology



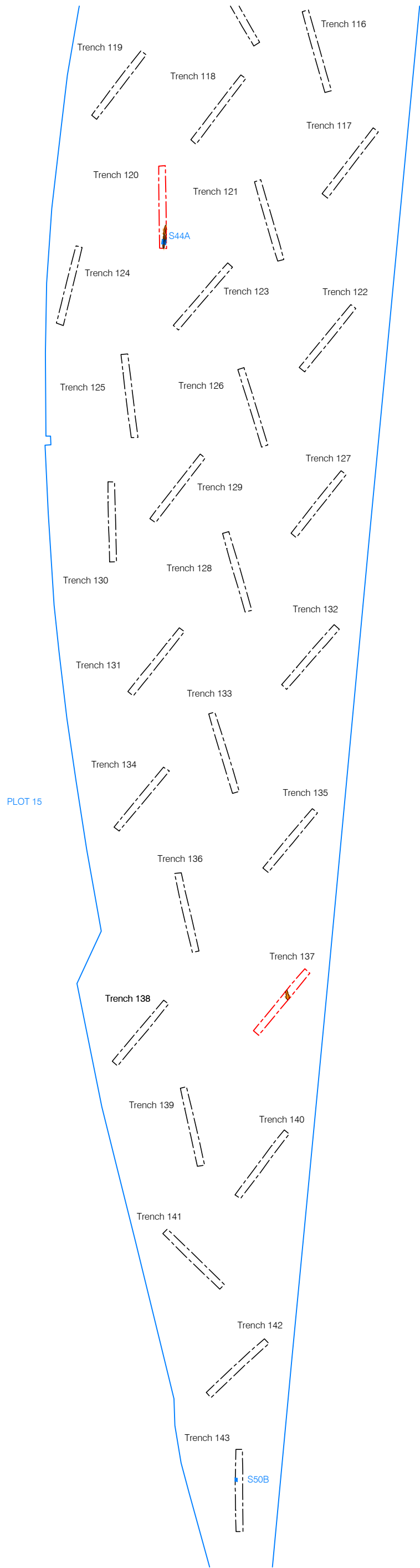
Figure 7b
Trench Locations in Mitigation Plot 15
1:1,250 at A3



Archaeological Feature
 Trench containing Archaeology

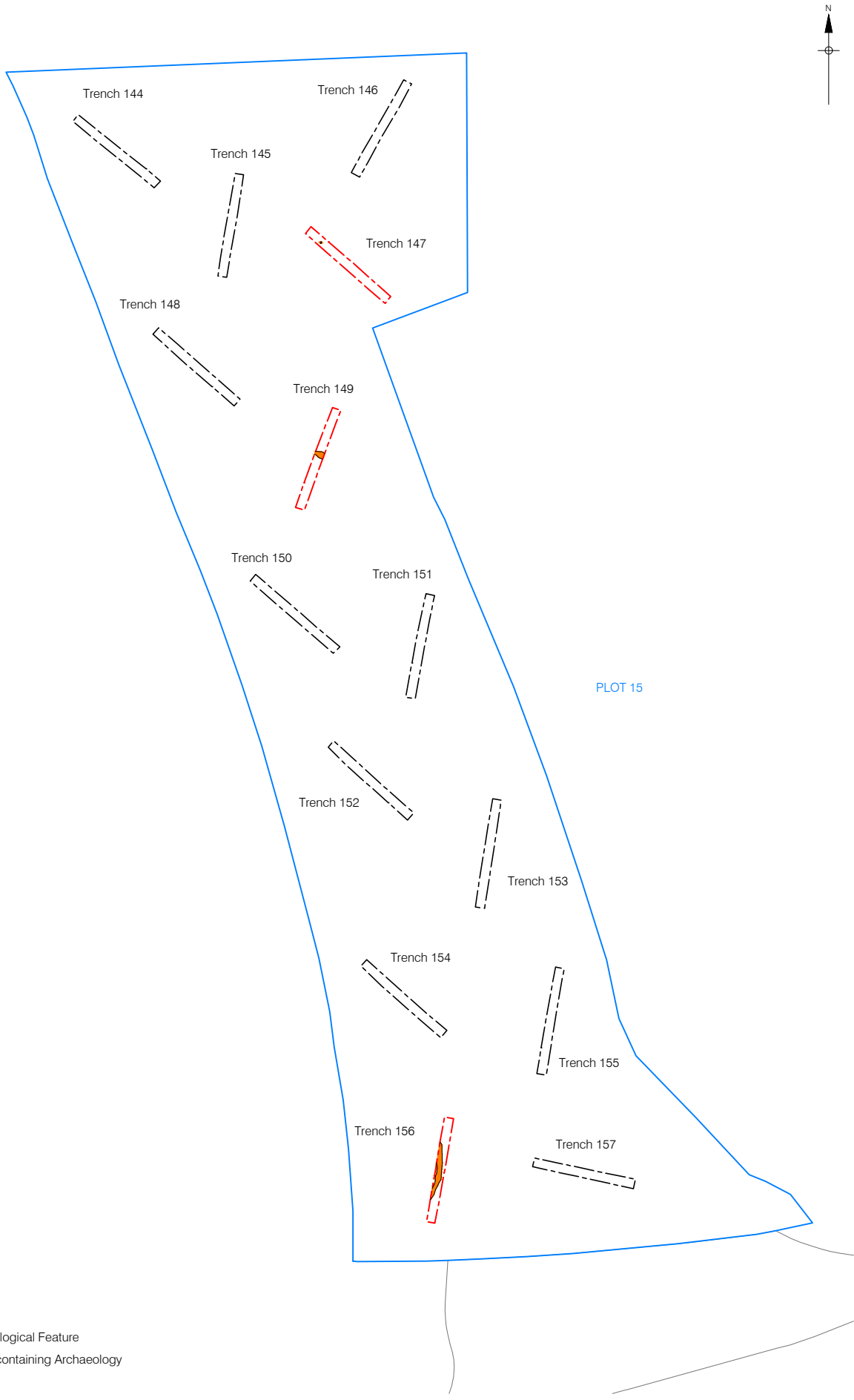


Figure 7c
 Trench Locations in Mitigation Plot 15
 1:1,250 at A3



- Archaeological Feature
- Trench containing Archaeology





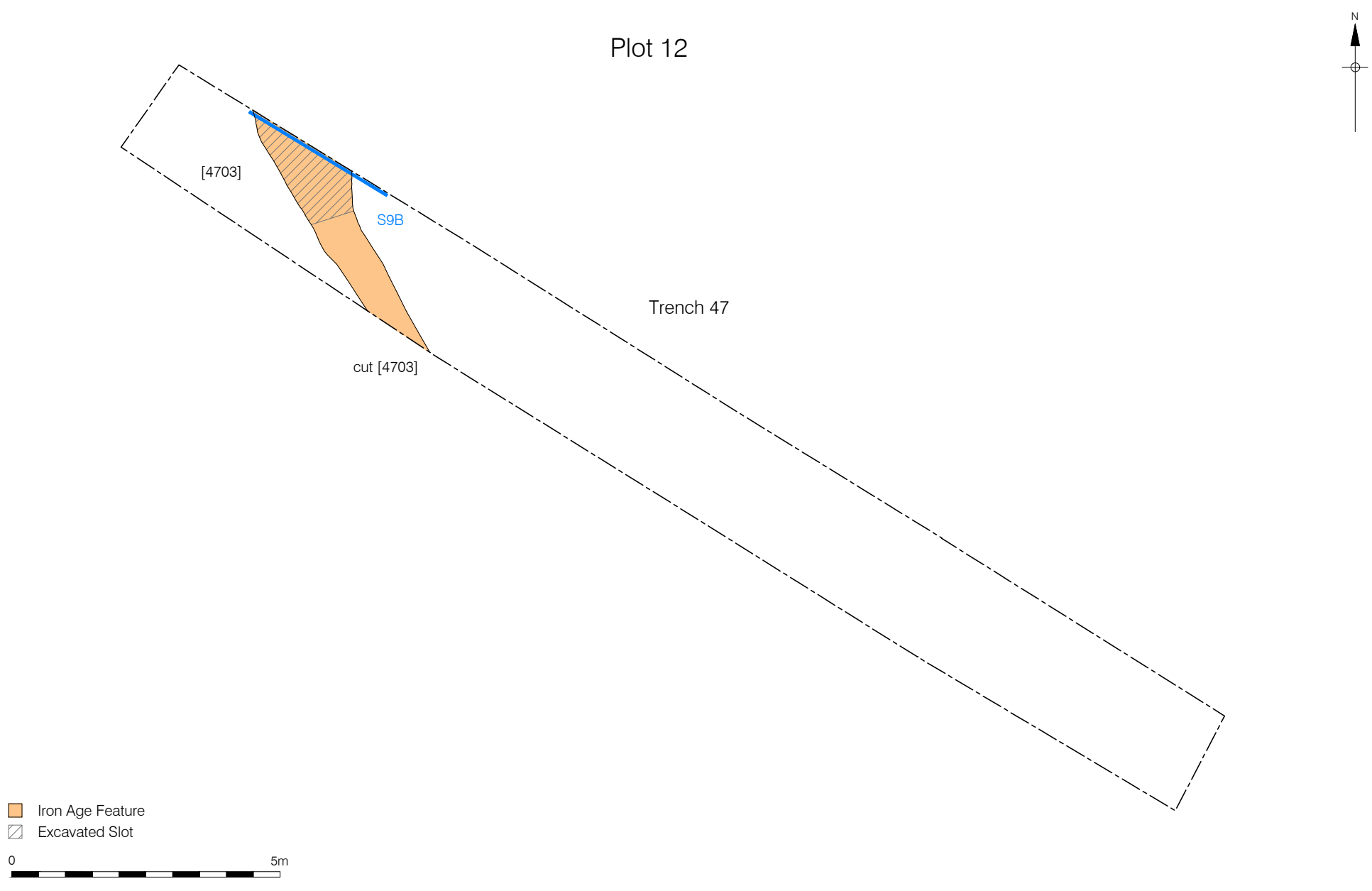
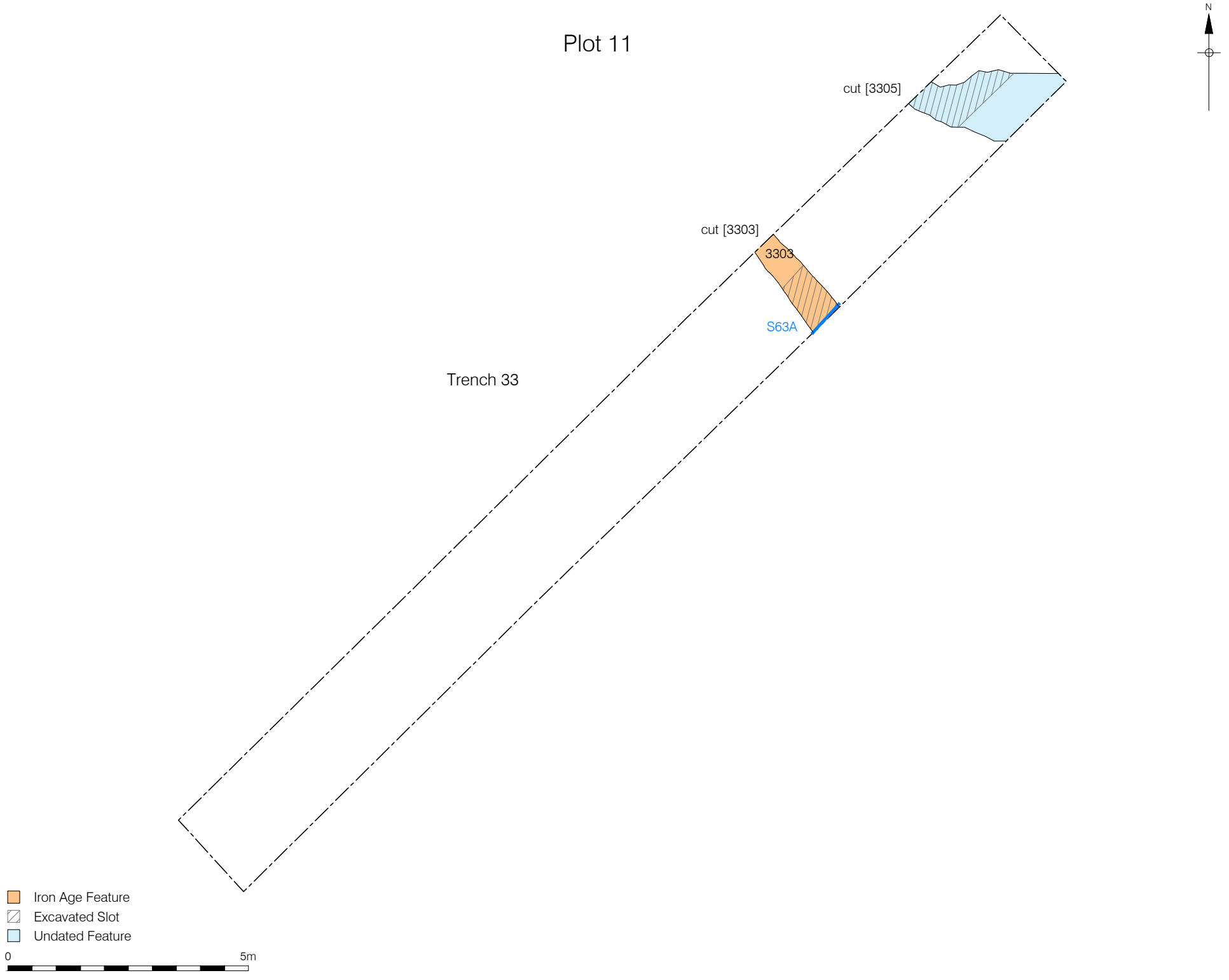
- Archaeological Feature
- Trench containing Archaeology

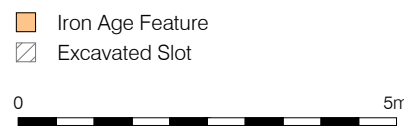
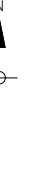
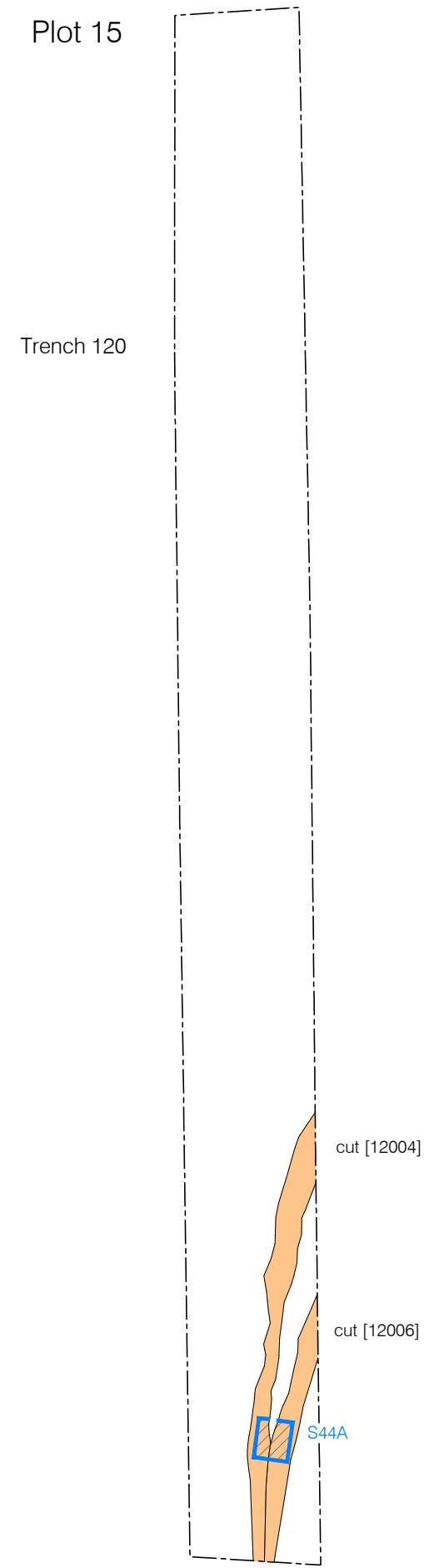
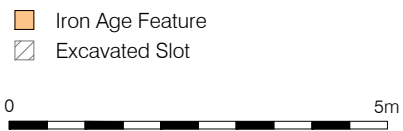
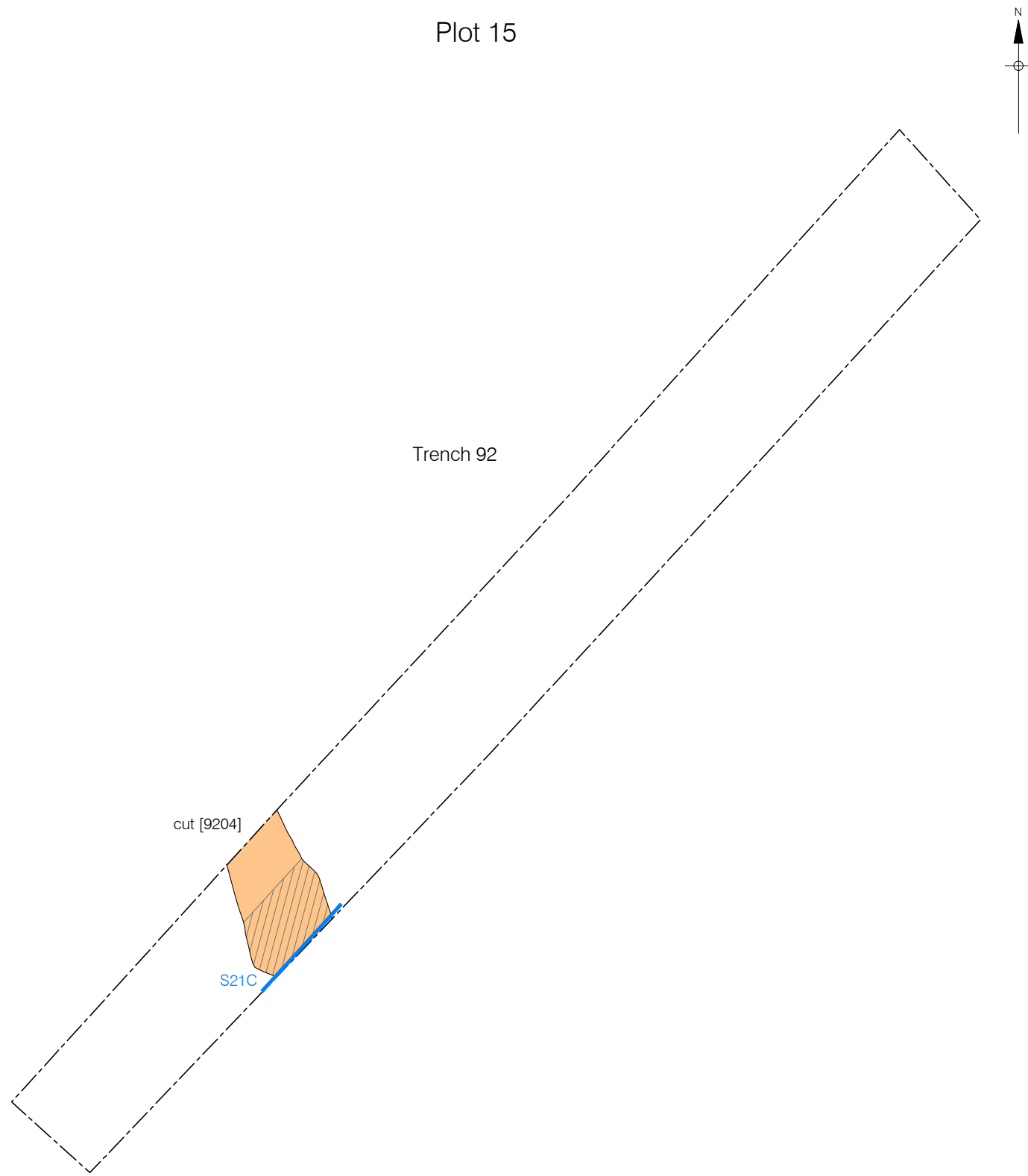
0 50m

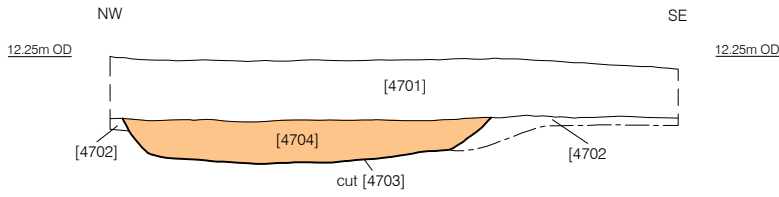
Figure 7e
 Trench Locations in Mitigation Plot 15
 1:1,250 at A4



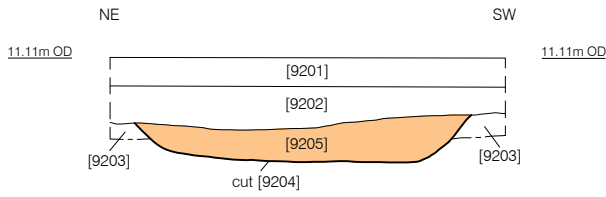
Figure 8
 Plot 12 Magnetometry Data Overlay by Trenches and Features
 1:1,250 at A3



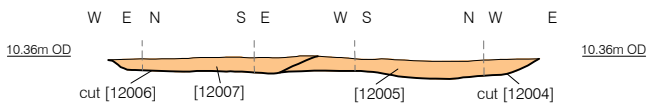




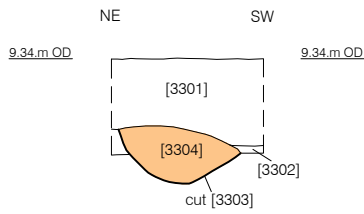
Section 9B
Southwest Facing
Trench 47



Section 21C
Northwest Facing
Trench 92



Section 44A
Trench 120



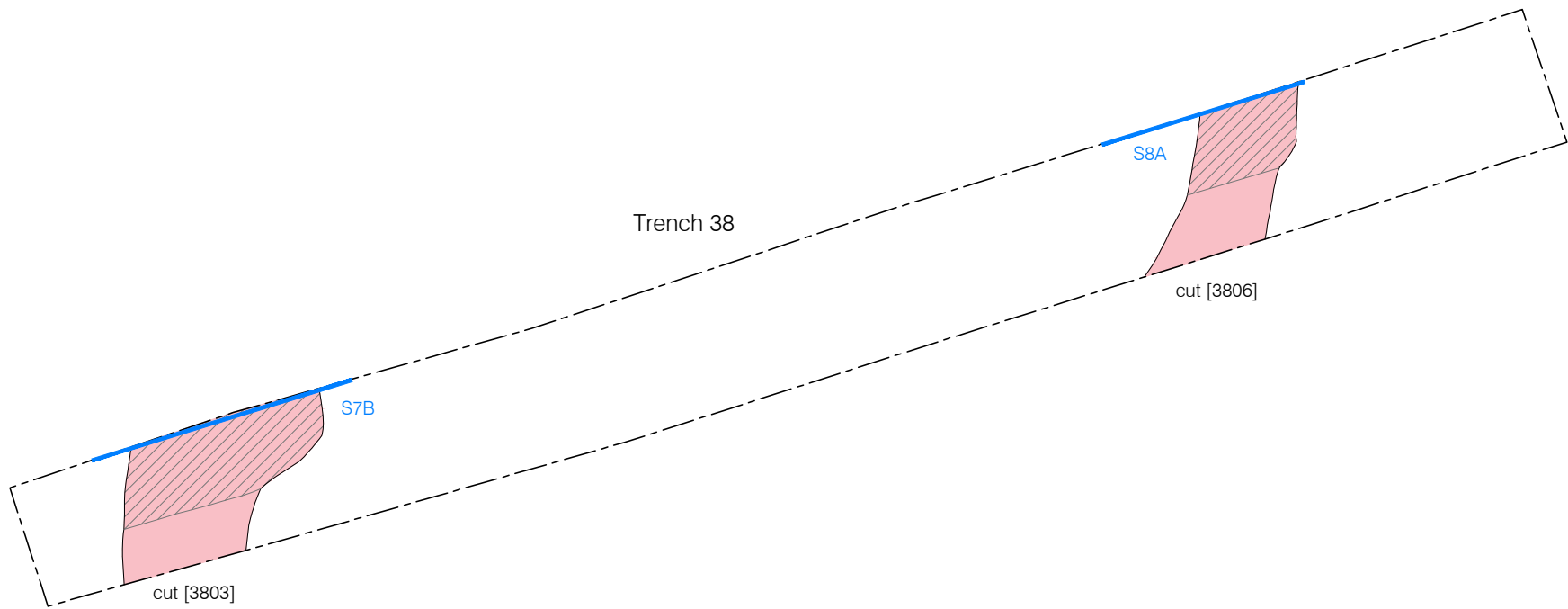
Section 63A
Northwest Facing
Trench 33

Iron Age Feature



Figure 11
Iron Age Sections
1:40 at A4

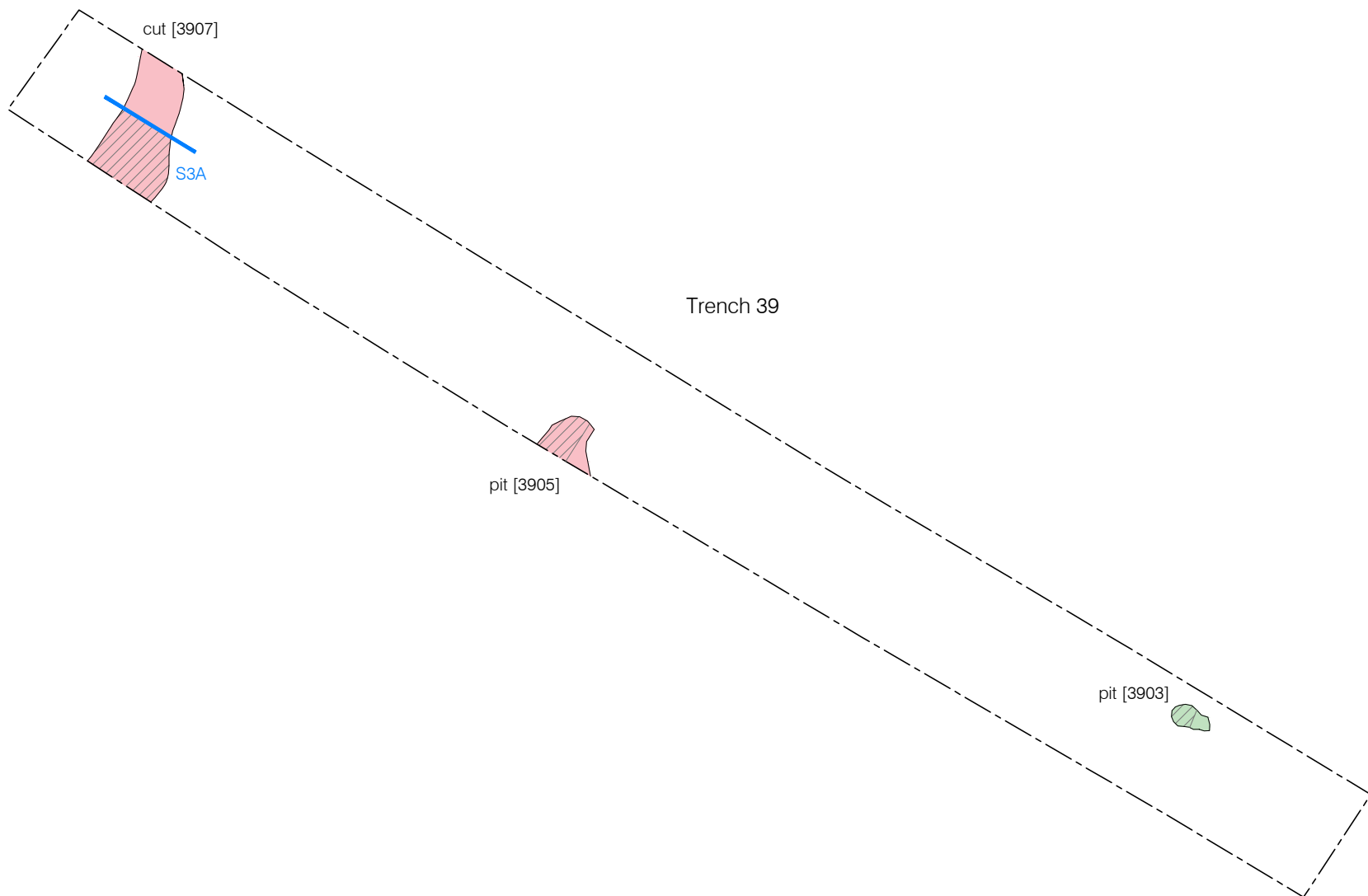
Plot 12



- Romano-British Feature
- Excavated Slot

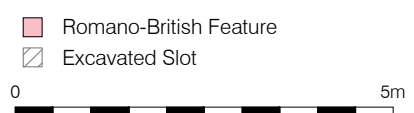
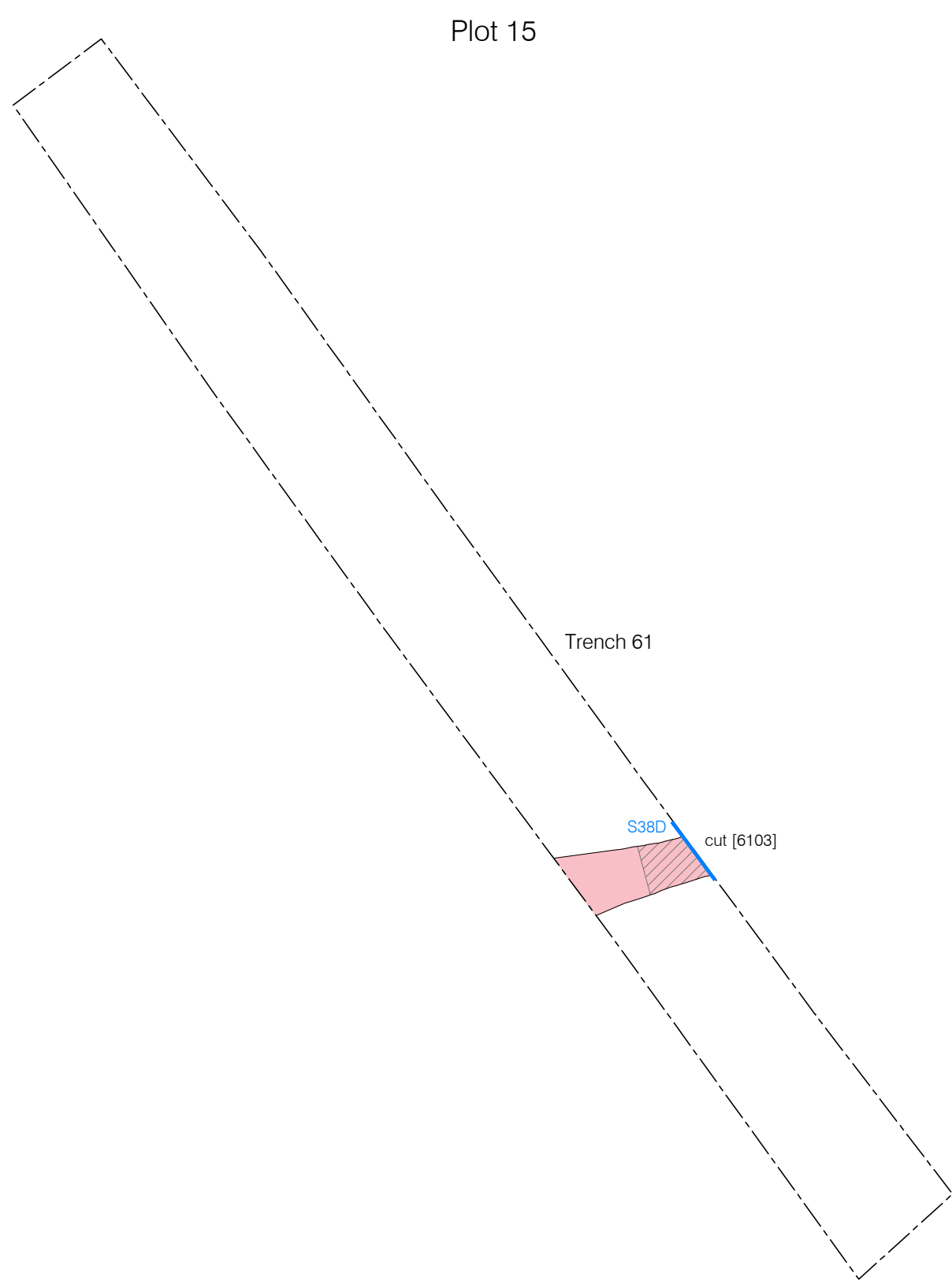
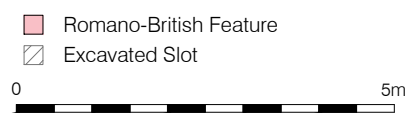
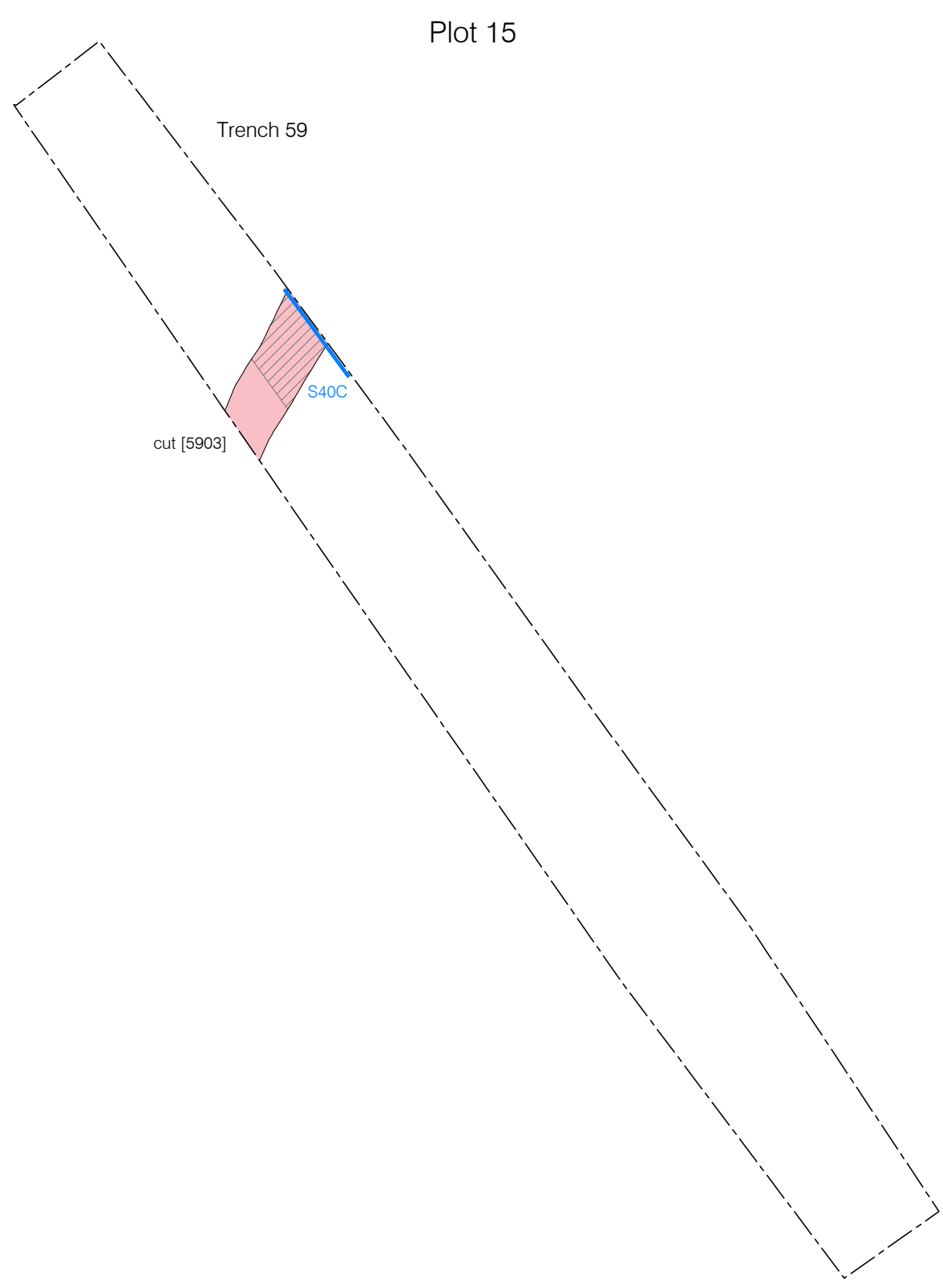


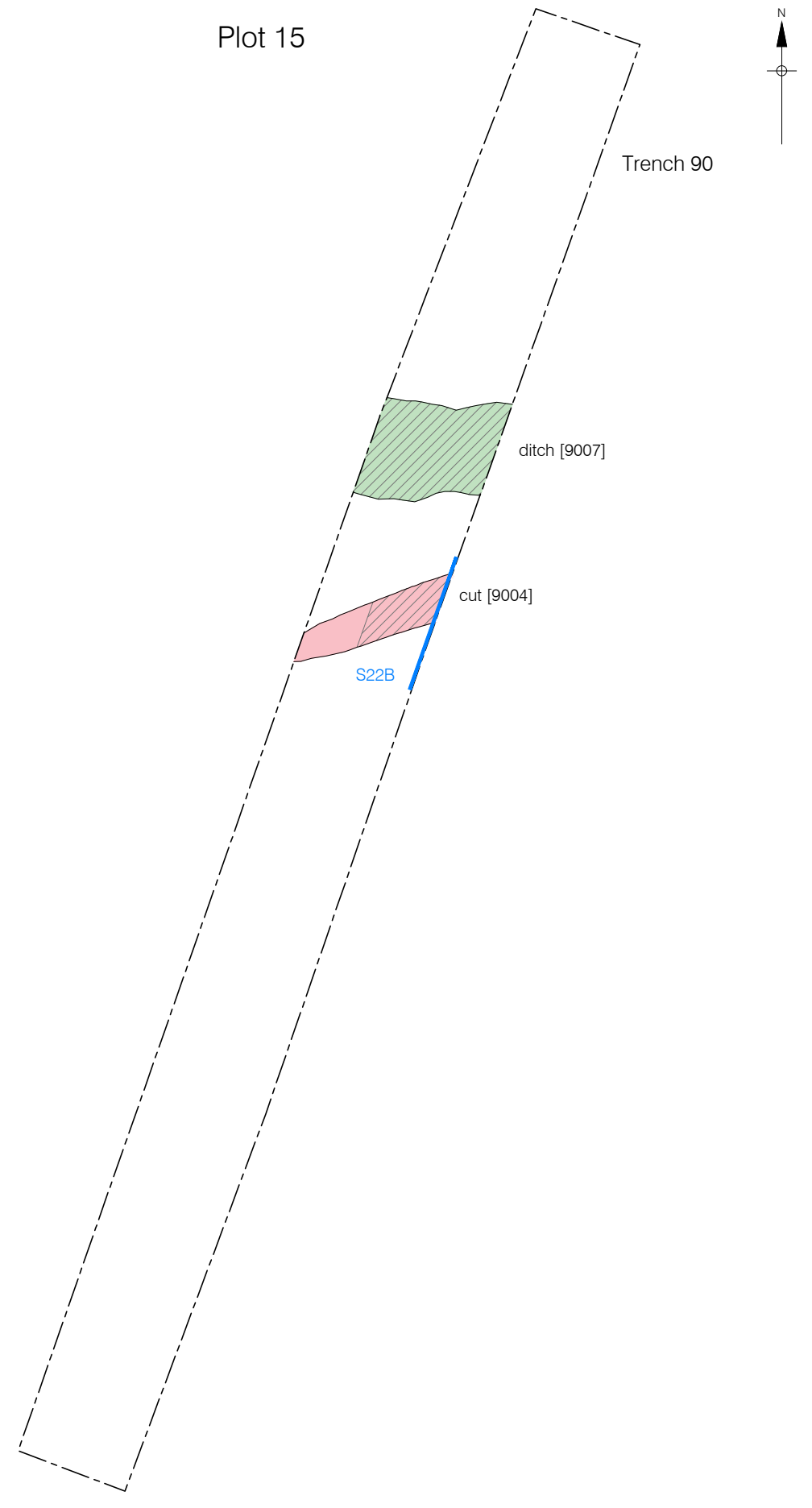
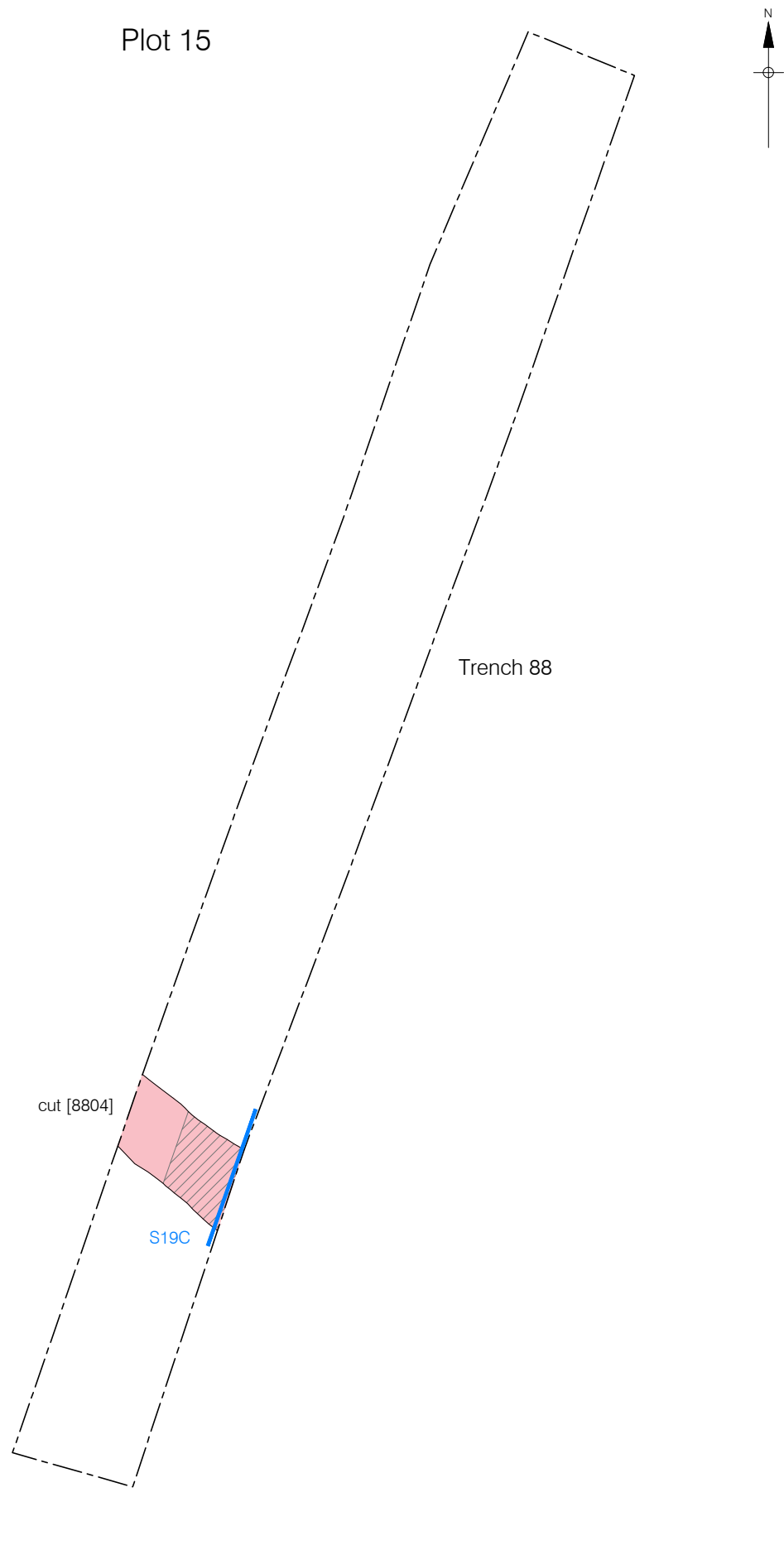
Plot 12



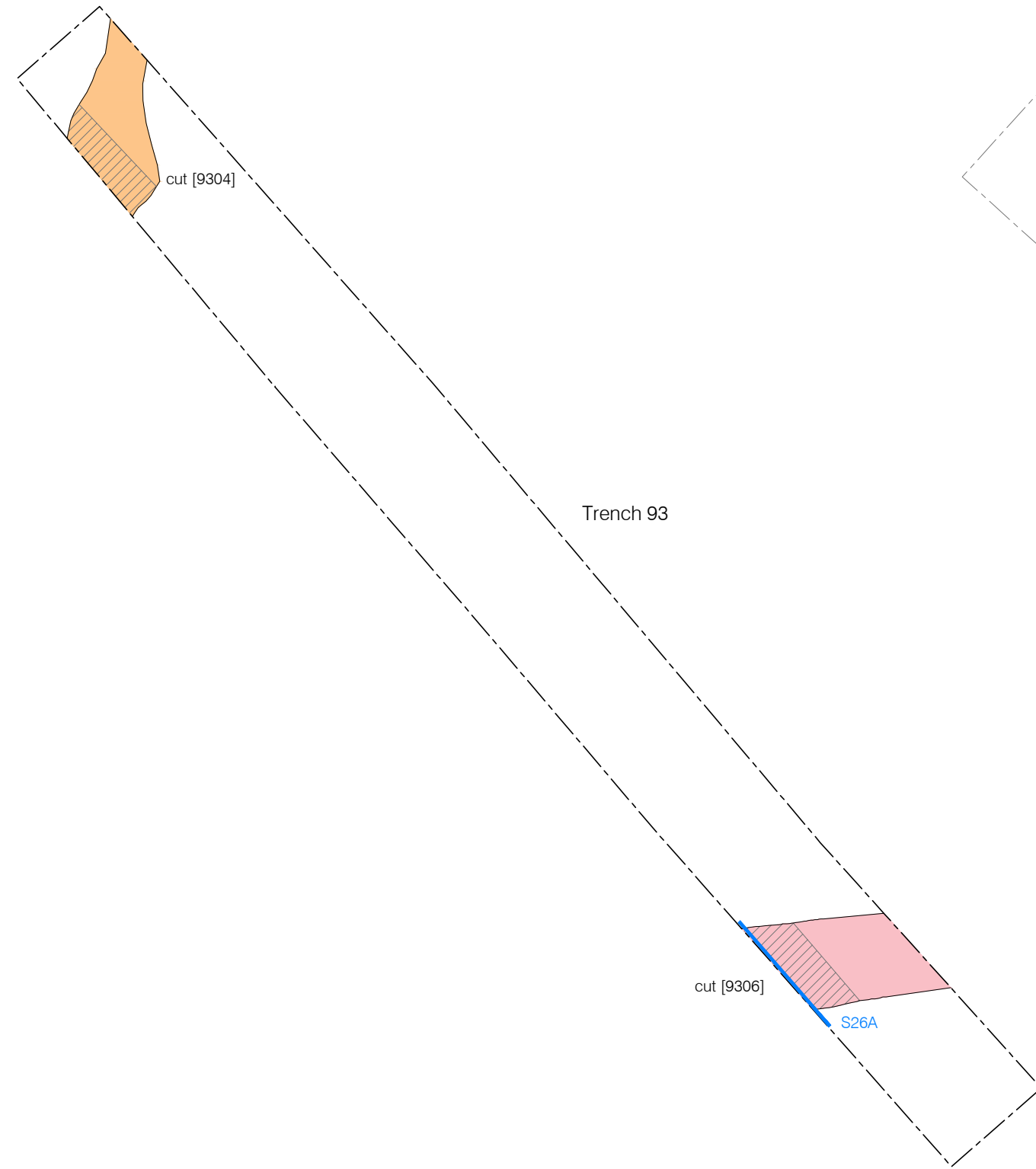
- Romano-British Feature
- Excavated Slot
- Post Medieval Feature







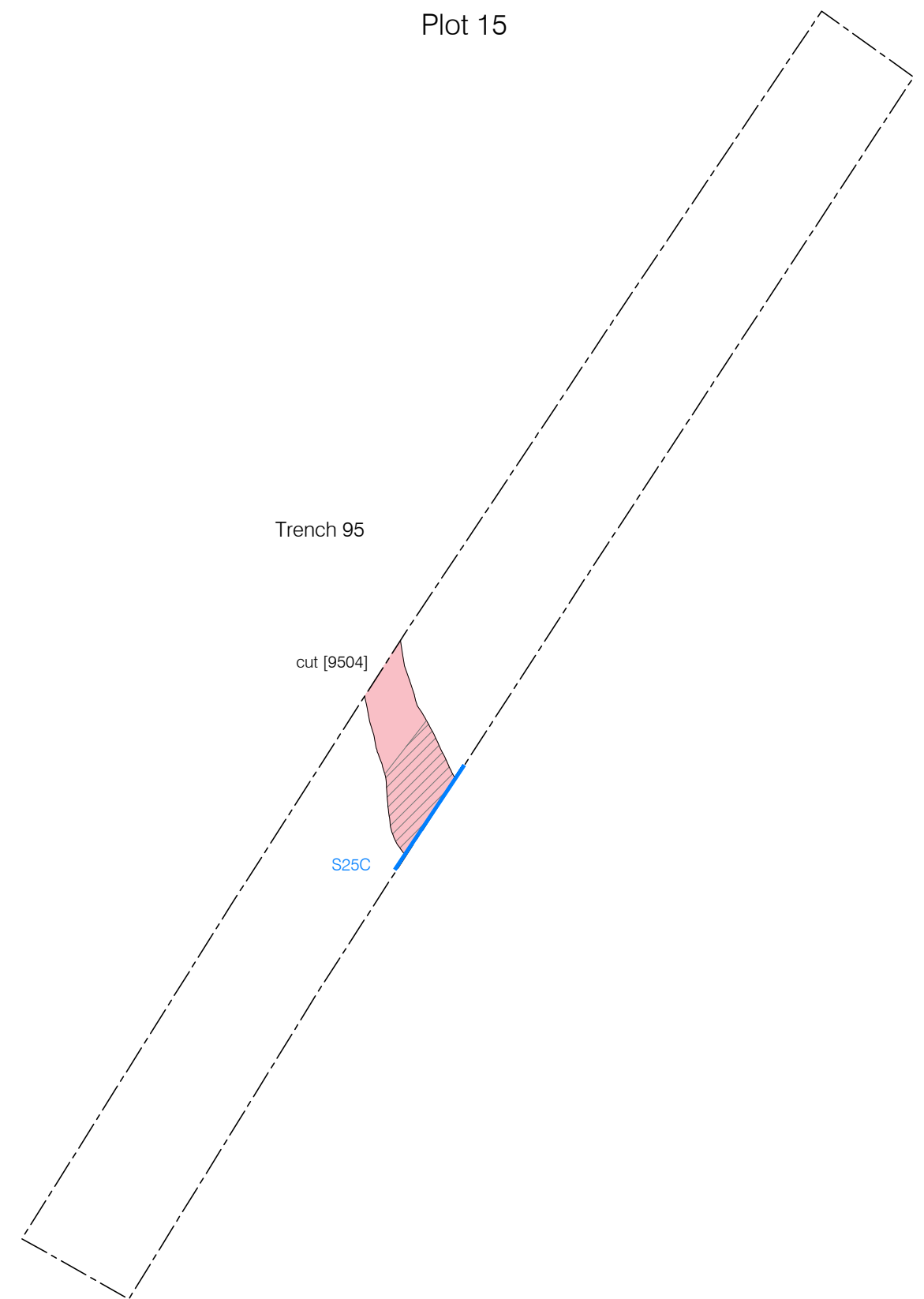
Plot 15



- Romano-British Feature
- Excavated Slot
- Iron Age Feature

0 5m

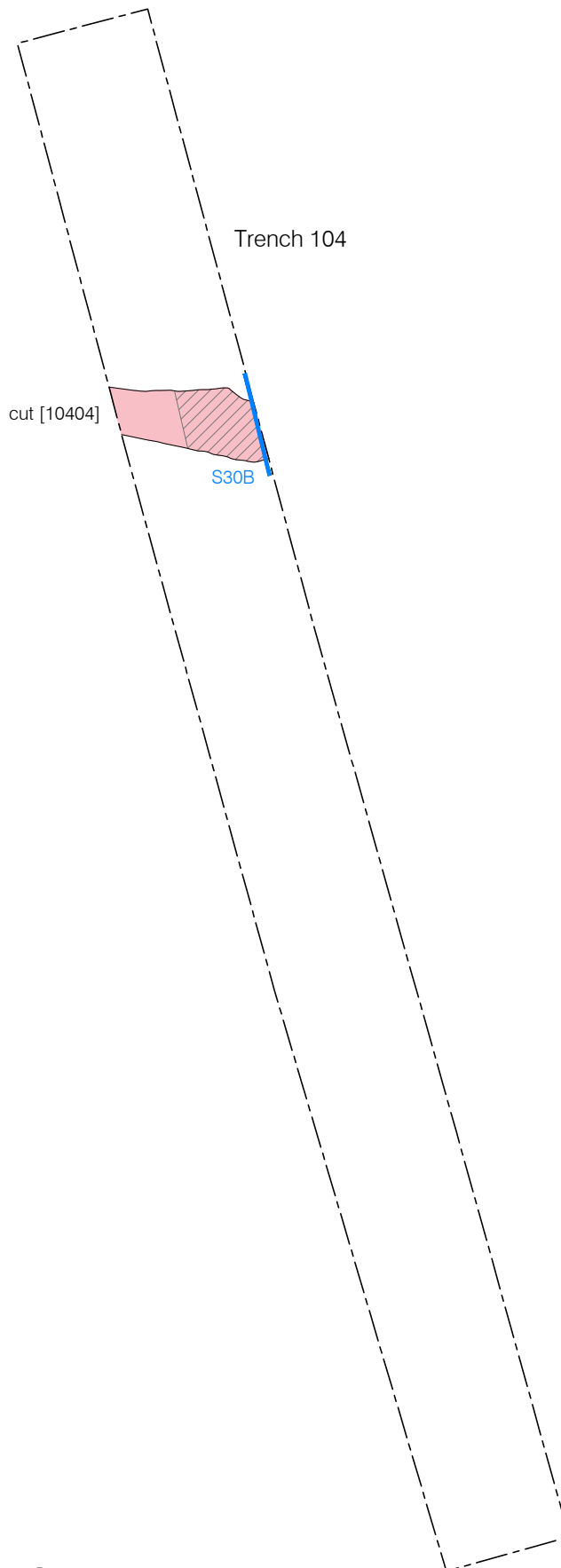
Plot 15



- Romano-British Feature
- Excavated Slot

0 5m

Plot 15



-  Romano-British Feature
-  Excavated Slot

0 5m

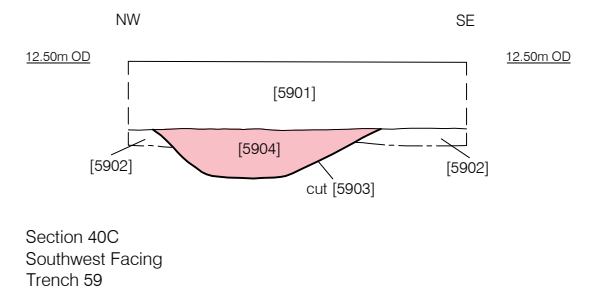
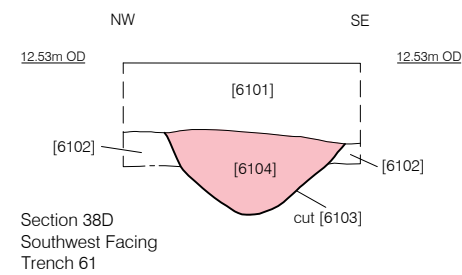
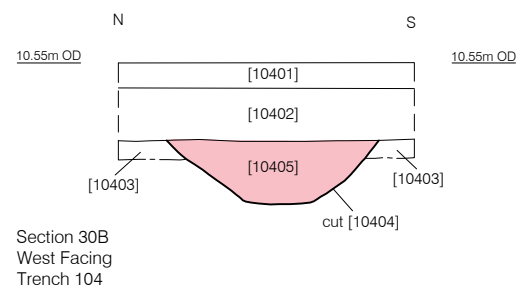
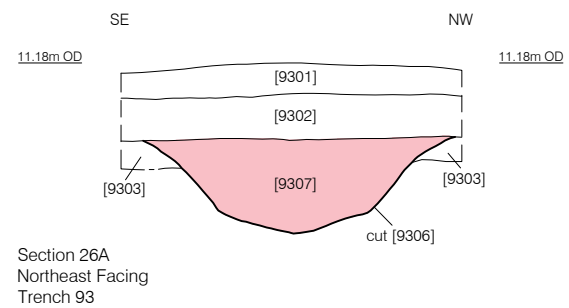
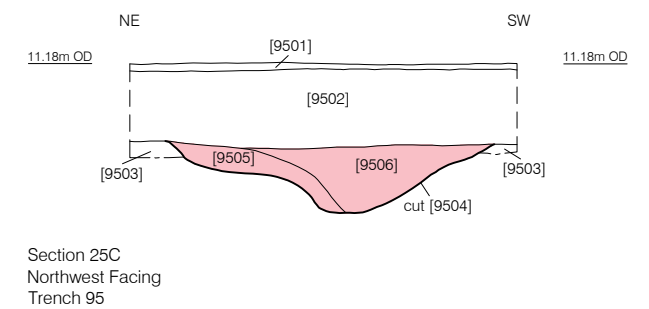
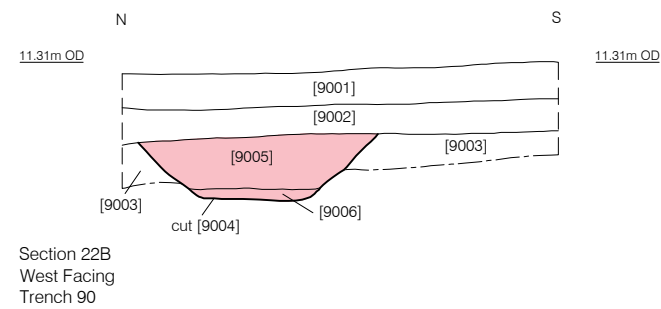
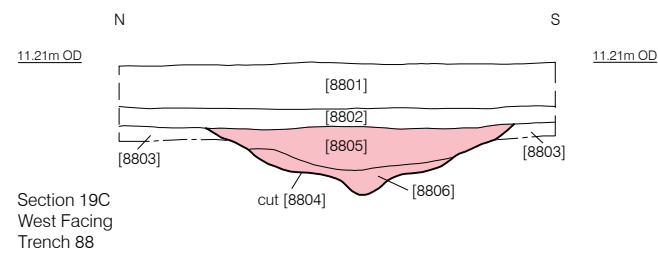
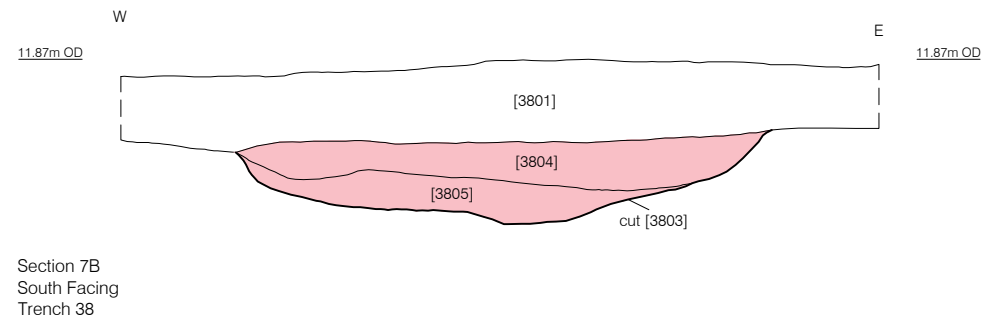
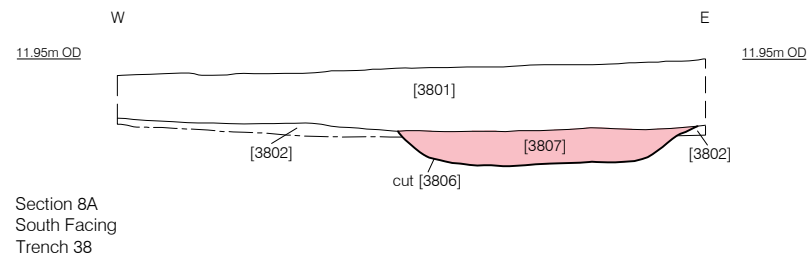
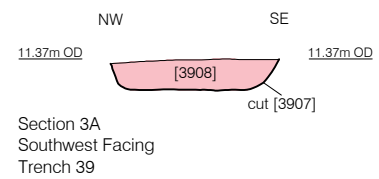
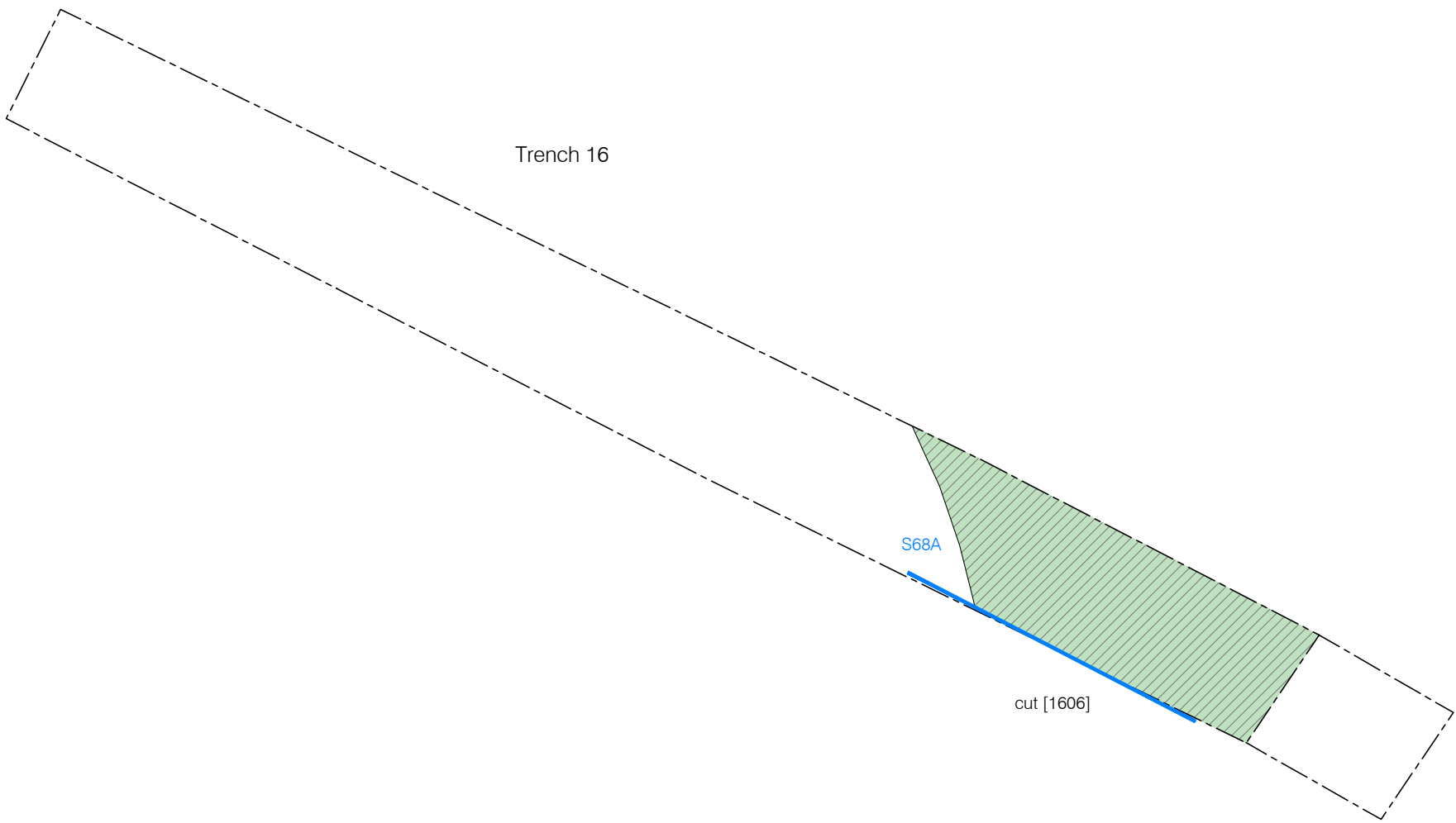


Figure 17
Romano-British Sections
1:40 at A3

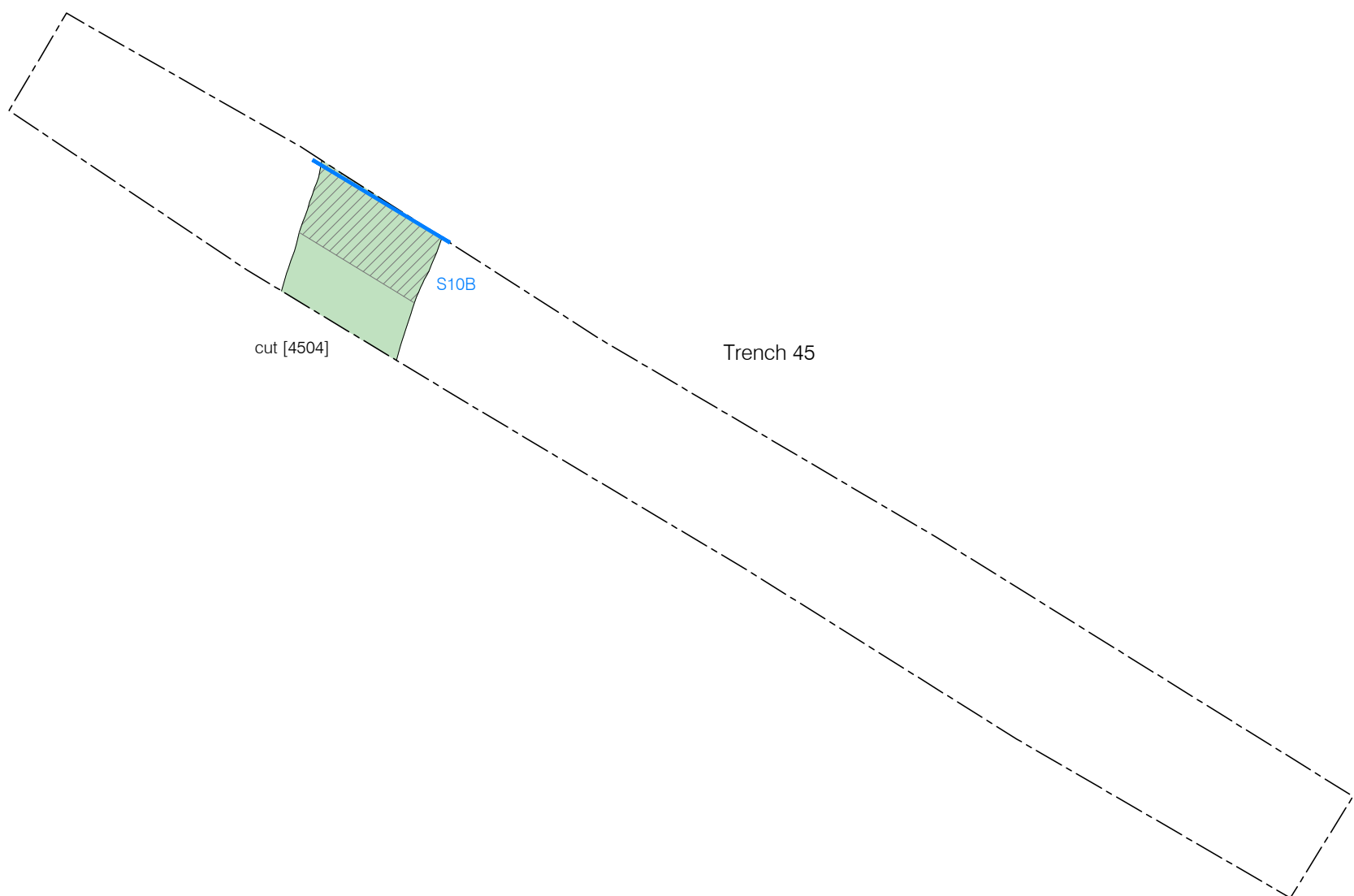
Plot 10



- Post Medieval Feature
- Excavated Slot

0 5m

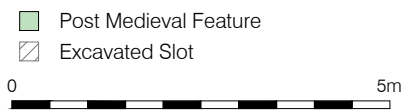
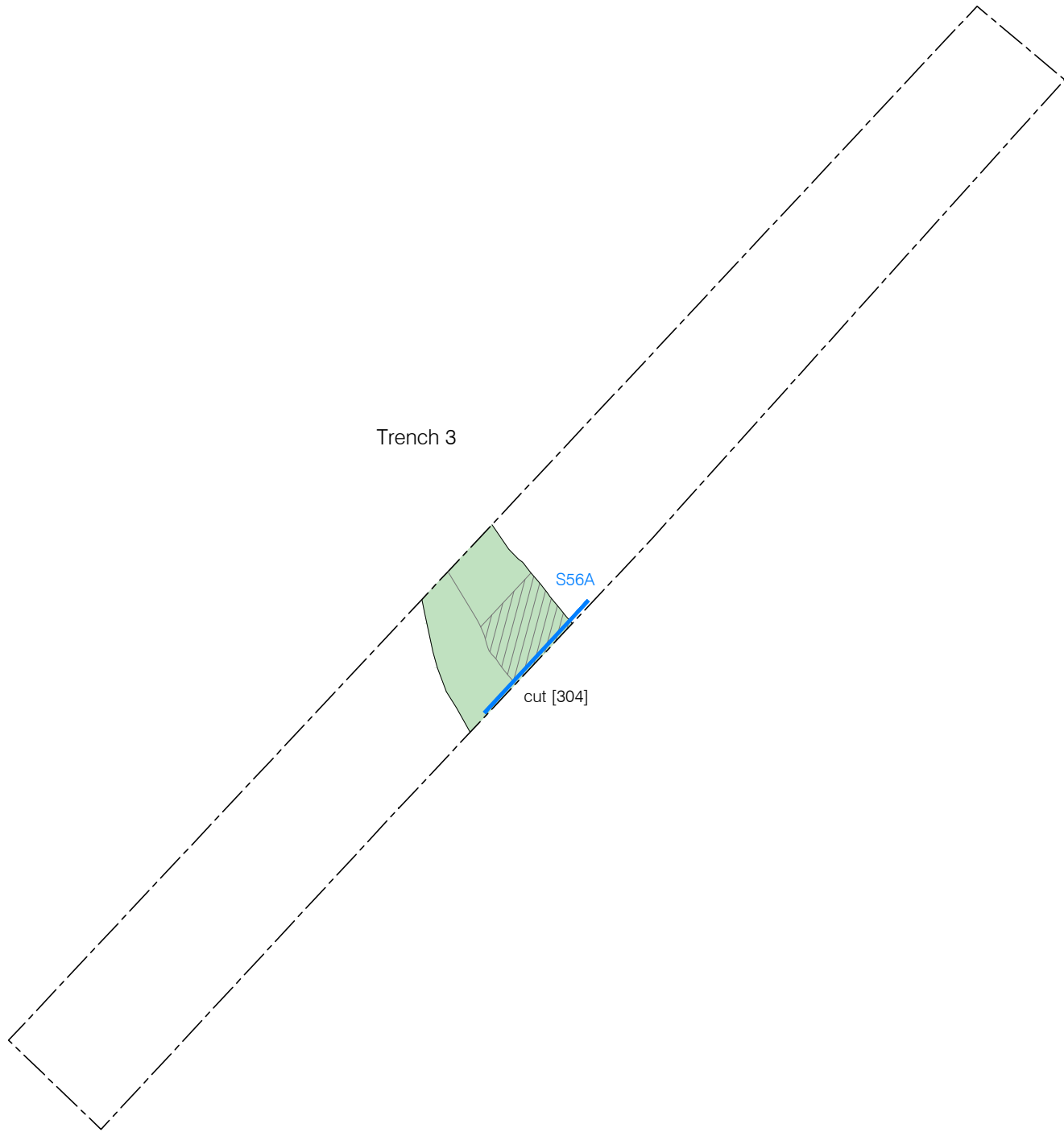
Plot 12



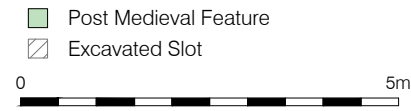
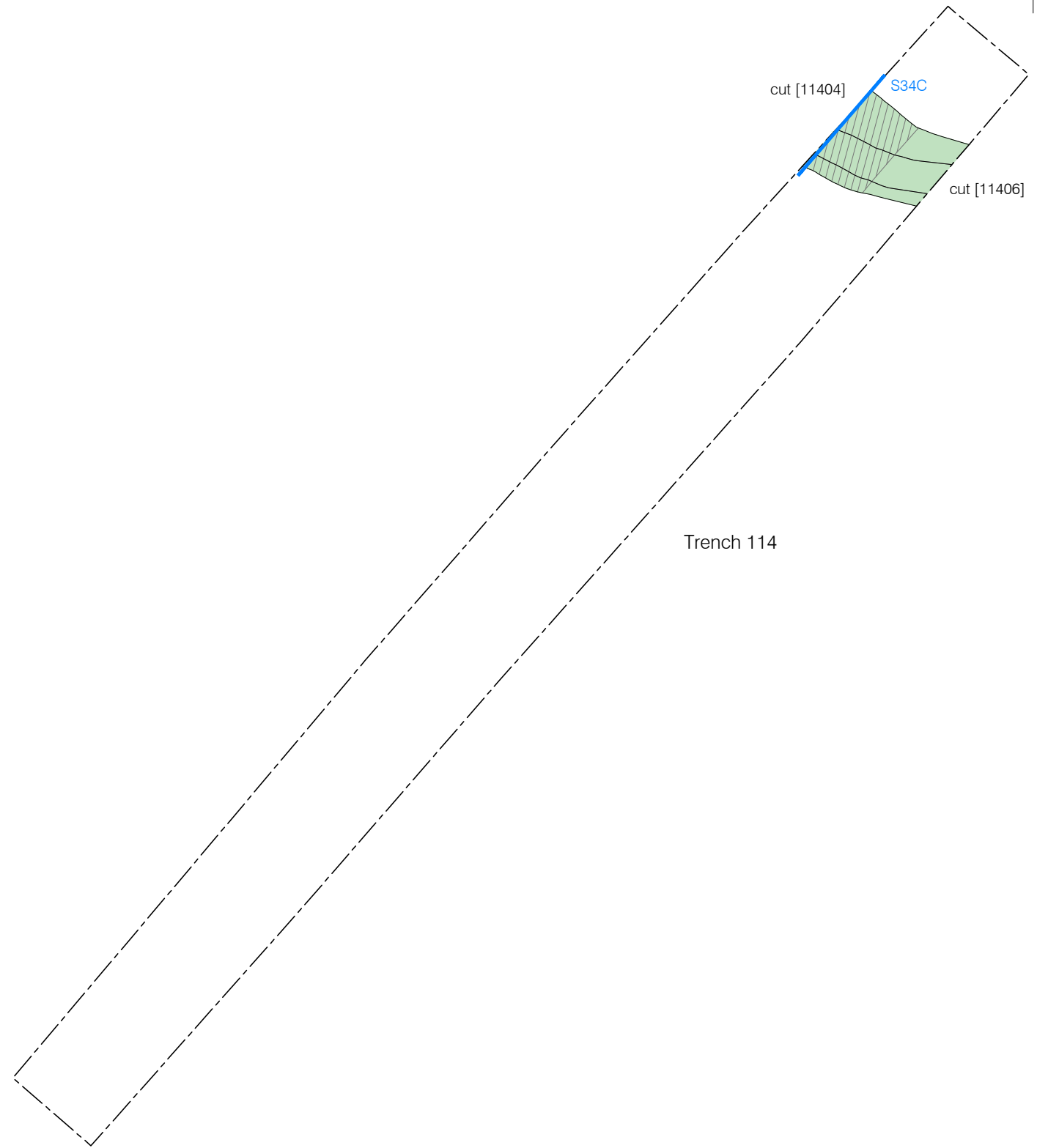
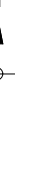
- Post Medieval Feature
- Excavated Slot

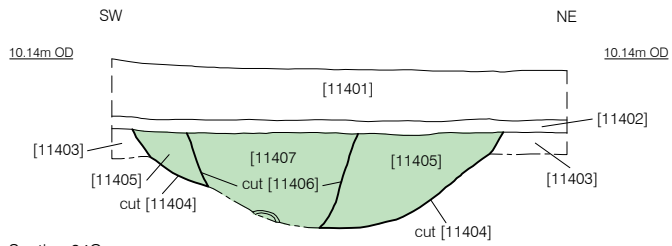
0 5m

Plot 10

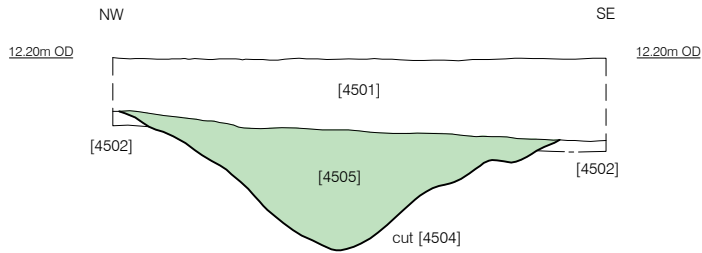


Plot 15

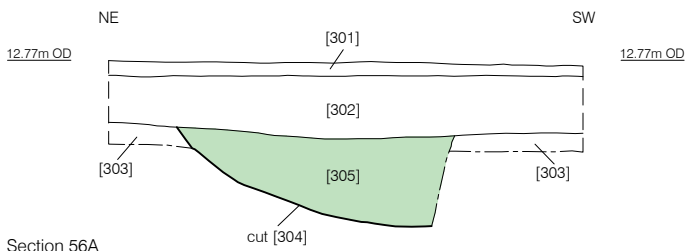




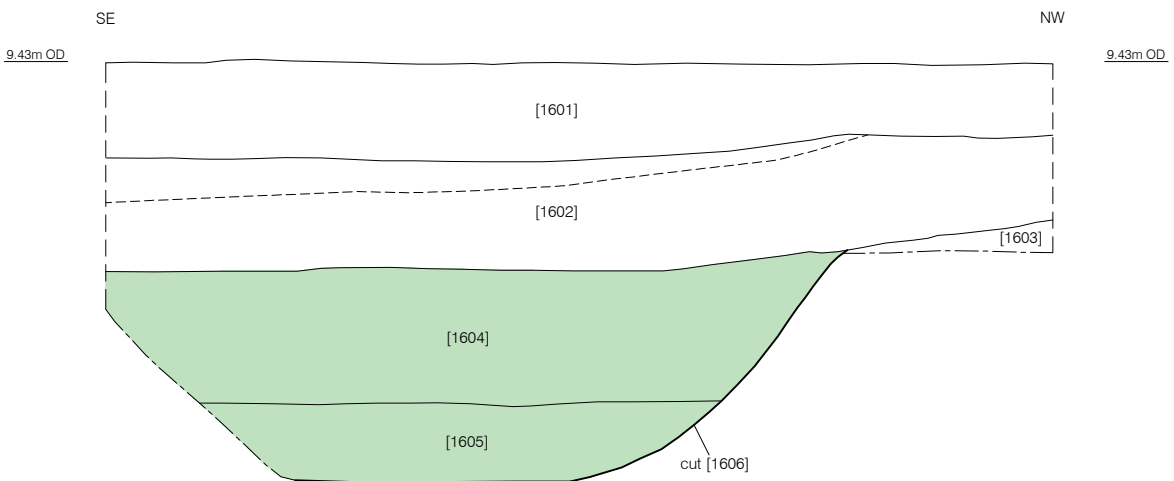
Section 34C
Southeast Facing
Trench 114



Section 10B
Southwest Facing
Trench 45



Section 56A
Northwest Facing
Trench 3

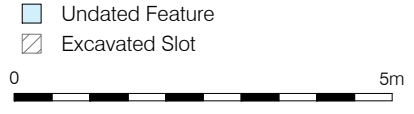
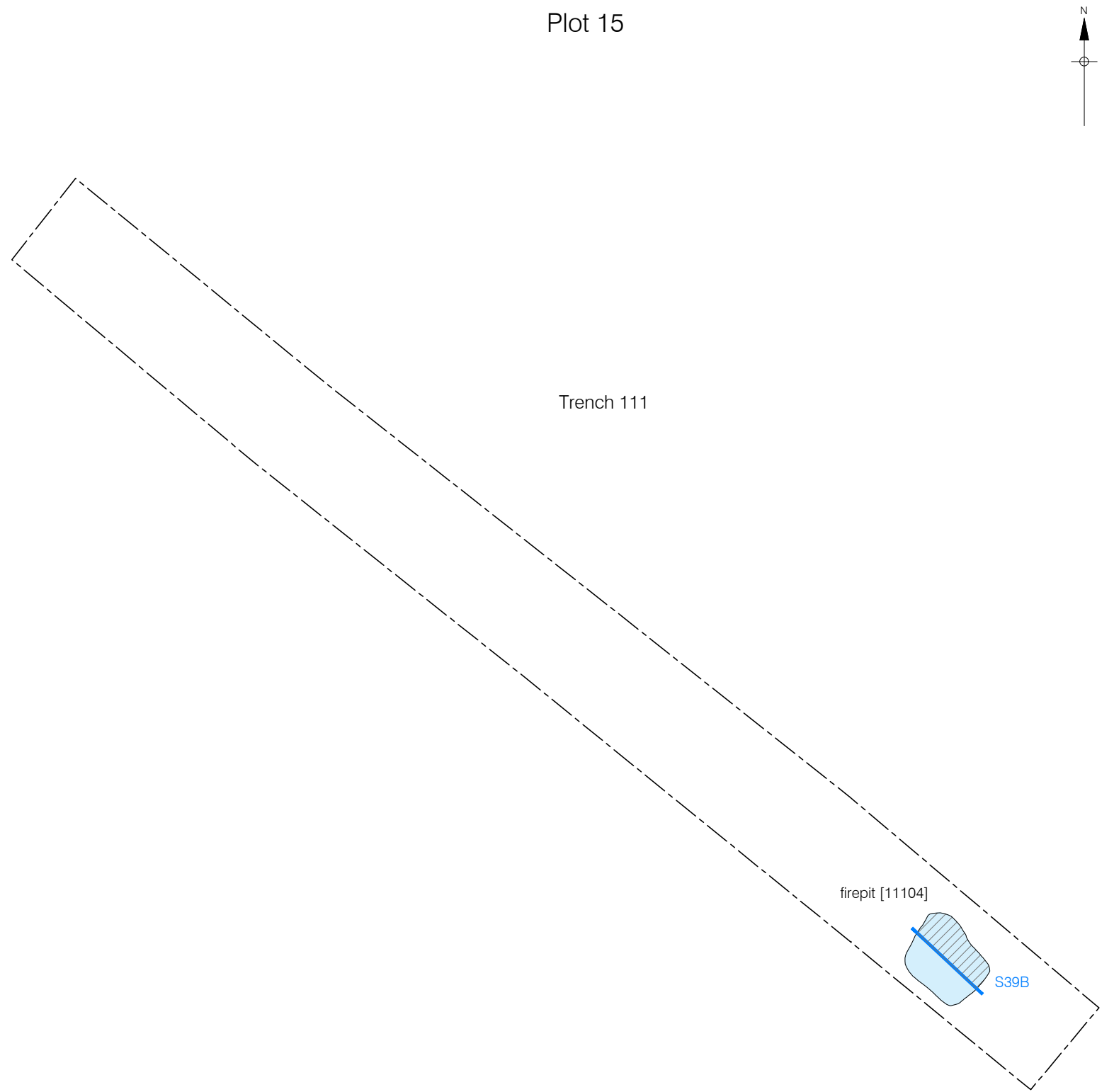
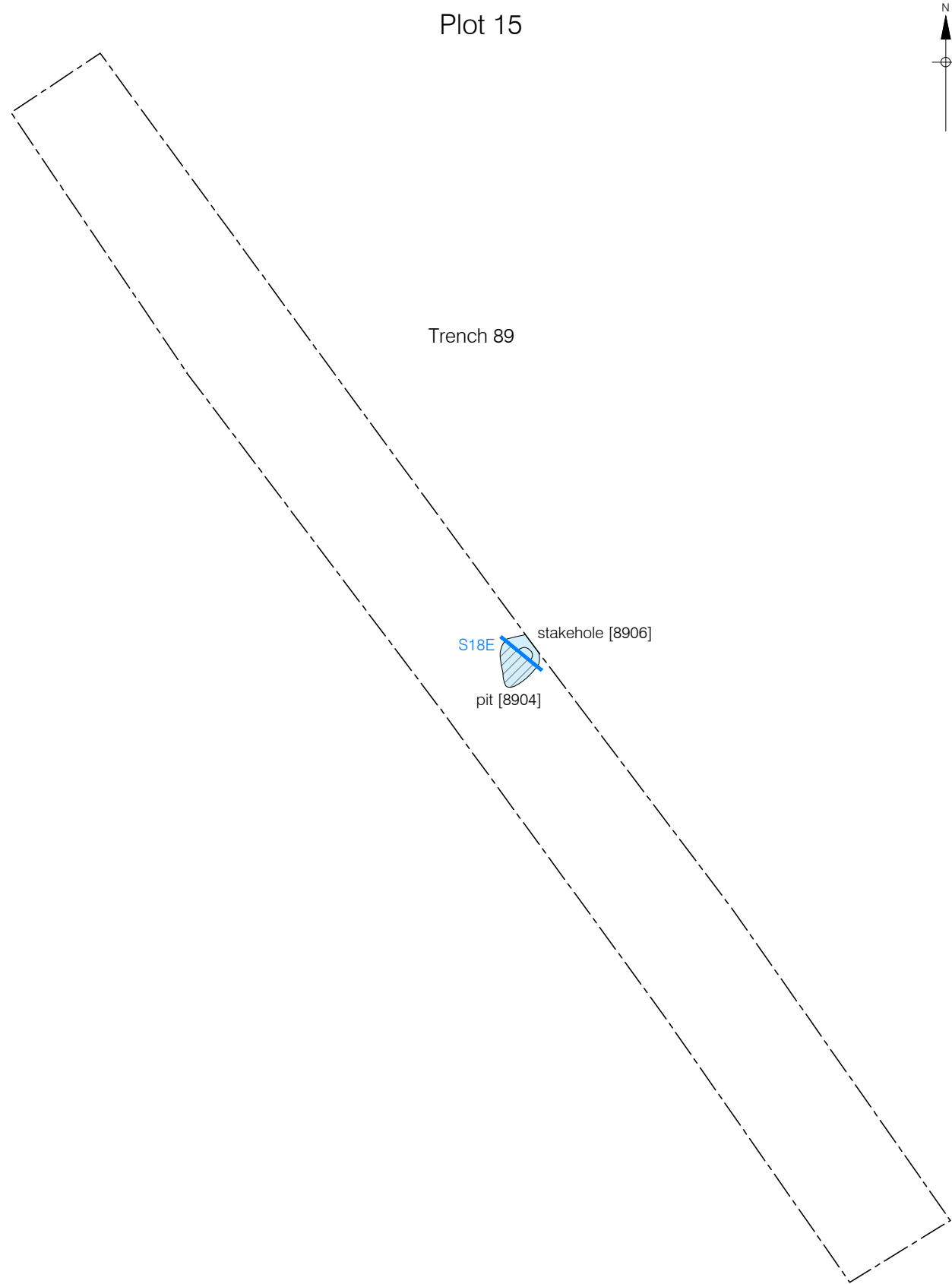


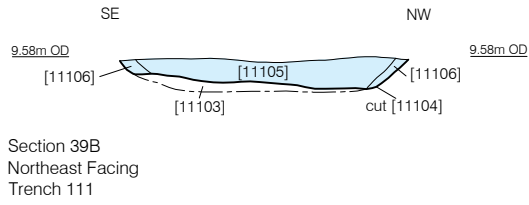
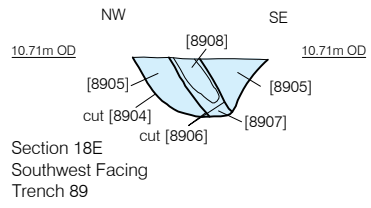
Section 68A
Northeast Facing
Trench 16

■ Post Medieval Feature



Figure 20
Post Medieval Sections
1:40 at A4





□ Undated Feature



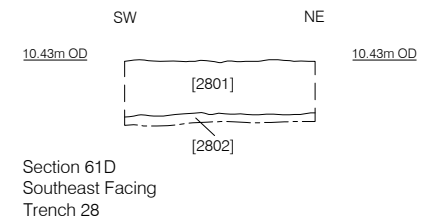
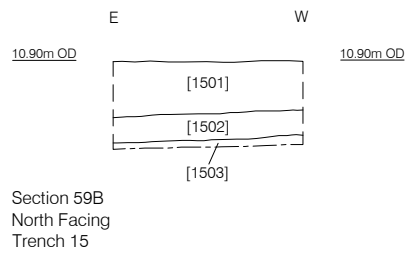
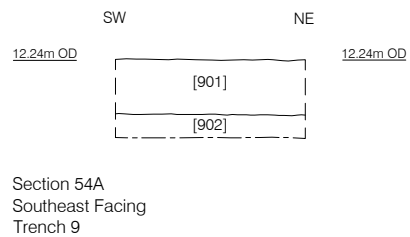
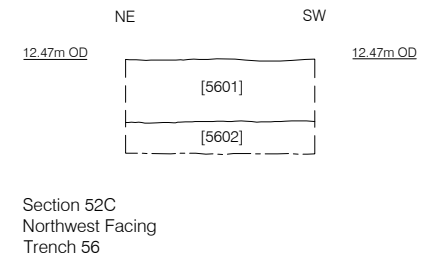
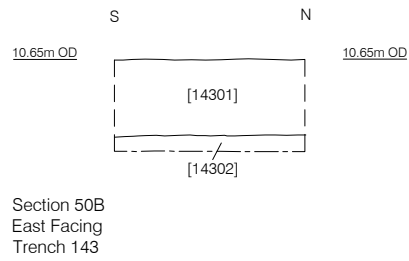
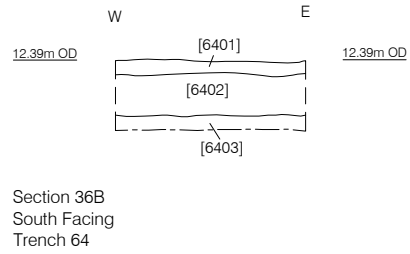
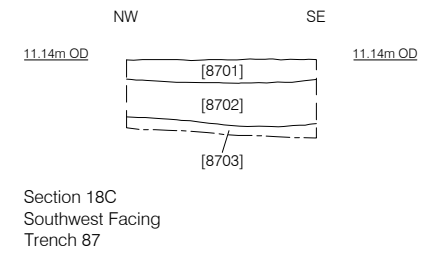
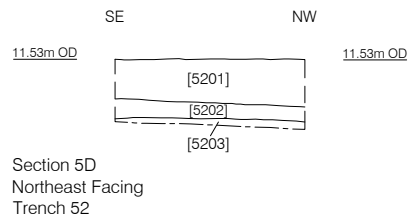
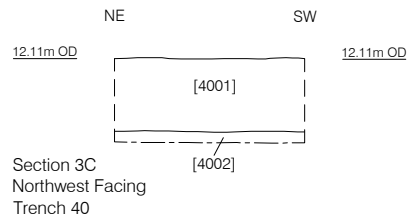


Figure 23
Representative Sections
1:40 at A4