



# M2 Junction 5 Improvements

## Further Archaeological Evaluation Report

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## M2 Junction 5 Improvements, Kent

### *Archaeological Evaluation Report*

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## Summary

Highways England is considering improvements to Junction 5 of the M2 in Kent. Archaeological evaluation of much of the area likely to be affected was undertaken by Oxford Archaeology (hereafter OA) for Hochtief in 2017, but some areas, including two paddocks north of the M2, east of the A249 and north-west of Oad Street, could not be accessed then. Access having been granted by the landowner, Atkins Consulting asked OA to undertake further trenching equivalent to 100m of trench in these paddocks.

Both paddocks had undergone geophysical magnetometer survey, but did not reveal any anomalies thought likely to be of archaeological origin. Historic maps indicated that two lines of WW1 defences passed through the eastern paddock, and the trench in that paddock was targeted to cross these defences.

The 2017 evaluation, which included the fields west of these paddocks, had found that much of the area immediately east of the crossing of the M2 and A249 had been truncated and covered by varying depths of made ground, believed to have occurred during the construction of the M2 in the 1960s. The evaluation therefore also aimed to establish whether these paddocks were similarly affected or were undisturbed.

The evidence from the trenches suggested that neither paddock had been heavily truncated during the construction of the M2. Two small pits or postholes were found in each trench, though no finds were recovered from any of the features. A cable trench and a linear anomaly thought to be of geological origin were also found in Trench 79, and a wide ditch or palisade trench in the eastern trench, Trench 80. This corresponded to the more easterly defence line marked on the WW1 maps, and consisted of a broad shallow trench, but with at least one deeper section along its length. The intervention cut across one of the deeper parts of the trench, and in section there appeared to be a vertical post-pipe with a different fill on either side. This suggests that deeper post-positions were dug at intervals along the trench to support posts and a continuous barrier or barbed wire fencing.

No trace was found of any linear feature corresponding to the more westerly defence line within Trench 80, although the two small pits or postholes lay within the width indicated and may have been postholes for a barbed-wire fence.

A substantial collection of struck flints was found in the topsoil and in the cable trench. These were mainly of Neolithic or early Bronze Age date, and predominantly of late Neolithic/early Bronze Age character. Compared to the struck flints from other parts of the scheme area, there appears to be a focus of activity of this period in the area around these trenches. There were no other finds except brick fragments of later 19<sup>th</sup>/20<sup>th</sup> century date.

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The project was managed for Oxford Archaeology by Tim Allen. The fieldwork was directed on site by Mike Donnelly, who was supported by Reuben Alonso. Survey and digitizing were carried out by Conan Parsons. Thanks are also extended to the teams of OA staff that cleaned and packaged the finds under the supervision of Geraldine Crann, processed the environmental remains under the management of Rebecca Nicholson, and prepared the archive under the management of Nicola Scott.



## 1 INTRODUCTION

### 1.1 Scope of work

1.1.1 Oxford Archaeology (OA) was commissioned by Atkins Consulting on behalf of Highways England to undertake a further trial trench evaluation at the site of M2 Junction 5 in advance of a planning application for junction improvements, in order to inform Highways England and Kent County Council (hereafter KCC) as to whether further archaeological mitigation will need to be conducted either prior to or during the scheme.

1.1.2 Consultation with the KCC Principal Archaeological Officer Simon Mason had established that a 5% evaluation should be carried out of the viable area for investigation, including targeting elements of the WW1 Chatham Defence Line known either from earthworks, from documentary evidence or from geophysical survey. WSP acting for Highways England produced a scope of works (WSP 2017).

1.1.3 Most of the trenching was carried out by OA late in 2017, and an evaluation report was issued (OA 2018a) and approved. Access could not, however, be obtained to certain areas, one of which was at the east end of the north-eastern area. Access was negotiated during 2018 to carry out further trenching in this area, and as a result two further trenches were commissioned.

1.1.4 OA produced a WSI (OA 2018b) for carrying out the work, matching the scope of works issued for the previous trenches. This outlined how OA should conduct the evaluation and included a trench layout, and this was approved by KCC prior to the start of the evaluation.

1.1.5 All work was undertaken in accordance with the National Planning Policy Framework (DCMS 2012), with the MoRPHE Project Manager's guide (Historic England 2015), and in accordance with the Code of Conduct of the Chartered Institute for Archaeologists (CifA), of which OA is a Registered Organisation. The archaeological works were carried out in accordance with the Standards and guidance for archaeological evaluation, excavation and archiving (CifA 2014a; CifA 2014b), and with the KCC requirements for trial trenching.

### 1.2 Location, topography and geology

1.2.1 The Site lies in north Kent some 5km (3.3miles) south-west of Sittingbourne. It includes land all around the current M2 junction, and includes the open ground within the junction as well. The smaller part is a strip running alongside the A249 both to the north and south of the M2, and these strips are part of larger fields continuing to the west. The southern limit is marked by the minor road to Stockbury, the northern limit is opposite the southern end of the village of Danaway. The larger part of the site lies east of the A249, that north of the junction being bounded on the north by the village of Danaway, but with open fields to the east, and that south of the M2 being bounded by Oad Street.

1.2.2 The area of proposed improvements encompasses 21.8hectares; the further area for evaluation lies on the north side of the M2 east of the junction, just west of Oad Street, and constitutes an area of 2.2ha (Fig. 3).

1.2.3 The area for improvement consists of a number of fields: some cultivated, some under pasture, together with small areas of woodland. The further area for evaluation consists of

two paddocks and a training ring, and lies south of a group of stable buildings. It is situated between 80m and 85m aOD, the ground rising gradually from west to east. The topography of the wider scheme is generally undulating, with steeper inclines in places. The nearest significant watercourse is Milton Creek at Sittingbourne some 5km to the north-east, and the Thames Estuary lies 7km due north.

1.2.4 The bedrock geology of the area is mapped as Seaford Chalk, with an area of Thanet Sands on the western side. Superficial Head deposits of sand, silt and clay-with-flints overlie the chalk in the area for further evaluation (Geology of Britain online viewer).

### 1.3 Archaeological and historical background

1.3.1 The archaeological and historical background of the site has been described in detail in the Desk Based Assessment (WSP 2015), and further information has come to light as a result of the 2017 evaluation (OA 2018a). A summary of this will be given below.

1.3.2 Much of the north-east part of the scheme, adjacent to which the further trenches are to be excavated, appeared already to have been truncated, probably during the construction of the M2. Only one evaluation trench dug in this area contained any archaeological features (Trench 72), and this contained two soilmarks, one of which (7203) was excavated, producing a little fired clay from its upper fill. The date of this feature is unknown.

1.3.3 Earlier Mesolithic flintwork has been recovered both from the north-west and south-east parts of the scheme area, in quantities suggesting significant foci of activity. Further flintwork of late Neolithic/early Bronze Age date was also found in both areas, in the south-east area including a possible shaft, indicating a further phase of activity both west and south-west of the further area to be evaluated.

1.3.4 A Beaker burial was found at Sittingbourne that included a copper dagger and a stone wristguard (Bristow 1798). Excavations during quarrying at Borden, some 2.5km north-east of the site, found a flint-working area, from which cores, hammerstones and tools of Neolithic and early Bronze Age date were recovered (Worsford 1948). Prehistoric activity is believed to be widespread on the North Downs of Kent, but there has been very little development in this area to substantiate this, and (until the 2017 evaluation) especially in the area close to Junction 5 of the M2.

1.3.5 Approximately 1km south of the scheme, a pipeline running across the A249 south of Stockbury uncovered an Iron Age settlement including well-preserved furnaces from metalworking (Girbal unpublished; Kent Archaeological Projects 2011). Evaluation at the M2 junction in 2017 revealed a further iron smelting site of similar date on the high ground to the north-west, and another, smaller area of smelting on the south-east. Both areas of activity were dated both by pottery and radiocarbon dates, and, like the earlier site found at Stockbury, demonstrate a transitional Iron Age to Roman smelting technology of regional significance.

1.3.6 The Stockbury valley was probably an important route through the North Downs in prehistory, a role it certainly fulfilled by the medieval period. Three gold coins, two of Cunobelinus, the third of Claudius, were found on the boundary between the parishes of Borden and Tunstall, about 4km east of the site (Arch. Cant. 1874, 299). A third celtic coin was recovered from the same site in 1943, and a fourth in 1968 (Kelly 1969, 259). Excavation during

quarrying at Borden, some 2.5km north-east of the site, revealed ditches and pits of late Iron Age (Belgic) date, together with cremations of early Roman date (Worsford 1948).

1.3.7 Roman Watling Street runs from WNW to ESE some 2.4km to the north of the site. The North Downs were extensively farmed in the Roman period, as is evident from the large number of Roman villas on the north slope south of the Roman road. A group of Roman bronze vessels, a glass and a pottery vessel, probably derived from a high status burial, were recovered during the excavation of a manhole at Borden, and subsequent excavation in the adjacent area revealed early Roman features (Kelly 1964). A walled Roman cemetery is also known from Borden (Ford 1965, 249).

1.3.8 Anglo-Saxon (or Frankish) evidence from the vicinity of the site is sparse, but the village of Stockbury, 1km to the south-west of the site, was already in existence at the Norman conquest, and was recorded in Domesday Book as Stochingeberge (Halsted 1800). Tunstall to the east was also of Saxon origin, and was recorded in Domesday Book under the name Stealle as belonging to Oswald in 1042, and given to Odo after the Norman conquest (Bristow 1798).

1.3.9 The Stockbury valley was an important route through the North Downs at this period, as is shown by the presence of three motte-and-bailey castles along its length. One of these was established on Church Hill east of Stockbury, only 400m west of the south end of the site (Smith *et al.* 2015). This site was later used for the Church Battery, an artillery battery in the WWI Chatham Land Front defences (*ibid.*, 48).

1.3.10 Sittingbourne, which sits astride Watling Street to the north-east, was not mentioned in Domesday Book, but became important as a stop-off point for pilgrims using Watling Street on their way to Canterbury after the death of Thomas-a-Becket in 1187. There are two churches of Early English style in the town. Oad Street, formerly Hoade Street or Wood Street, was of medieval origins, although nothing now remains dating to that period. Danaway is a recent, 19<sup>th</sup> century settlement.

1.3.11 The 1<sup>st</sup> Edition Ordnance Survey 1" to 1 mile map of 1856 shows that the part of the site lying east of the A246 was then part of Chesnut Wood. To the west of the road, much of the southern part was also wooded, but the northern part was open ground. The position was similar in 1894, when the OS 1:2500 county series shows the south-western wooded part was called Church Wood.

1.3.12 The site is known to be part of the area used in WW1 to create the Chatham Land Front defensive line, a complex of bunkers, defensive earthworks and lookout points aimed at defending north Kent from attack in the event of invasion. Around the Chatham battery these are likely to include shelters, tunnels, observation points, fire trenches and battery emplacements. In places these defences are still visible on the ground as positive or negative earthworks.

1.3.13 No previous fieldwalking or archaeological excavation has taken place within the site, but a geophysical gradiometer (magnetometer) survey was carried out by GSB Prospection in 2015 (GSB 2016; Fig. 2). This did not reveal any particular concentrations of potential geophysical anomalies of probable archaeological origin, but did identify short lengths of anomaly that appear to correspond to some of the WW1 defensive features. The survey also identified two small areas of probable ridge-and-furrow cultivation in the eastern part of the site, and a scatter of linear features of uncertain date.

1.3.14 Following the identification of the late Iron Age smelting site north-west of Junction 5, and the realization that some of the areas initially identified as due to recent metal objects and disturbance probably indicated the extent of slag spreads, a further 2ha. area of gradiometer survey was carried out by GSB Prospection in 2018, revealing further potential areas of metalworking debris, and establishing the probable limits on the north-west side (OA 2018a, Appendix G).

## 1.4 Potential

1.4.1 Prehistoric activity of three periods: earlier Mesolithic, late Neolithic/early Bronze Age and late Iron Age, has now been recognized around Junction 5. Struck flints indicating earlier prehistoric activity, and settlement features of late Iron Age date, have also been found at Borden to the north-east, while iron-working sites have also been found at Stockbury 1km to the south-west.

1.4.2 No struck flints or features that were dated as prehistoric were recovered from the evaluation trenches north of the junction and east of the A249, ie closest to the further area for evaluation, but this area had been truncated and/or deeply buried during the construction of the M2, so the absence of activity further east in the area to be evaluated cannot be ruled out. The full extent of this recent truncation has not been established, however, and it is possible that the further area for evaluation may also have been truncated. Overall, therefore, the potential for prehistoric activity must be considered to be moderate.

1.4.3 Although several Roman sites are known in the wider area, the potential for Roman activity appears to be low.

1.4.4 There is no evidence for activity within the site or in the immediate vicinity, although Stockbridge was a late Saxon settlement. The potential for Saxon activity is therefore believed to be low.

1.4.5 The presence of a motte-and-bailey castle only 400m west of the site, and the presence of villages recorded to the south-west and east, means that peripheral activity of the Medieval period may be encountered. Ridge and furrow cultivation was found over parts of the site, showing that parts of the site lay within the fields of these Medieval settlements. No further Medieval features were, however, found during the evaluation in 2017. The potential for Medieval activity is therefore considered to be low to moderate.

1.4.6 The site formed part of the WW1 defences of Kent, and plans of these, as well as some surviving earthworks and structures, show that these will certainly be encountered within the further area for evaluation. The potential for WW1 archaeology is therefore considered to be very high.

## 2 EVALUATION AIMS AND METHODOLOGY

### 2.1 Aims

2.1.1 The project aims and objectives were as follows:

- i. To determine or confirm the approximate extent of any surviving remains.
- ii. To determine the date range of any surviving remains by artefactual or other remains.
- iii. To determine the condition and state of preservation of any remains.
- iv. To determine the degree of complexity of any surviving horizontal or vertical stratigraphy.
- v. To assess the associations and implications of any remains encountered with reference to the historic landscape.
- vi. To determine the potential for the site to provide palaeoenvironmental and/or economic evidence, and the forms in which such evidence may survive.
- vii. To determine the implications of any remains with reference to economy, status, utility and social activity.
- viii. To determine or confirm the likely range, quality and quantity of the artefactual evidence present.
- ix. To provide sufficient information to enable the significance of any archaeological remains that may be found to be established.

### 2.2 Specific aims and objectives

2.2.1 The specific aims and objectives of the evaluation are:

- x. To date the various linear features indicated by the geophysical survey.
- xi. To identify on the ground the WW1 defences indicated on early 20<sup>th</sup> century maps, and to investigate their state of preservation and understand their significance, in order to inform design decisions for the scheme.
- xii. To look for evidence of further elements of the WW1 defences that may not have been marked on the maps, and, if found, to establish their probable function.
- xiii. To clarify whether the absence of other archaeological features indicated by the geophysical survey in the remainder of the site is likely to be correct.

### 2.3 Methodology

#### Scope of works

2.3.1 Due to the limited size of the paddocks in which the work was carried out, Trench 79 was only 40m long, while Trench 80 was 60m long to compensate (Fig. 4).

#### Site-specific methodology

2.3.2 The locations of the agreed trenches were laid out in advance using a GPS.

2.3.3 The trenches were excavated using a JCB wheeled excavator fitted with a toothless bucket under close archaeological supervision.

2.3.4 Spoil was stored on either side of the trench, topsoil separated from subsoil. Soils were monitored for finds visually and a metal detector was used during excavation and on the spoil heaps to check for finds. Some struck flints were found within the topsoil and subsoil in Trench 79, but there were no particular concentrations.

2.3.5 Trenches were excavated to the first horizon at which archaeological features appear, or failing that, to the surface of the undisturbed natural geology. Trenches were not excavated to a depth greater than 1m, as the natural was found at a depth of only 0.4-0.45m.

2.3.6 Where WW1 defences were found, these were carefully cleaned by hand to expose their full extent within the evaluation trench, and to assess their state of preservation.

2.3.7 The exposed remains were cleaned by hand, photographed and planned at an appropriate scale (1:10 or 1:20), and were compared to the plans of the defences obtained in advance of the evaluation, and photographs of well-preserved parts of the defence system already investigated, to assist in their characterization.

2.3.8 No structural elements were removed, though loose finds were planned and lifted. No intact structural elements were found.

2.3.9 The WW1 linear feature found in Trench 80 was excavated by hand to clarify its character, method of construction and state of preservation, and so establish its significance.

2.3.10 No earthwork features were present in the areas investigated by the evaluation.

### 3 RESULTS (FIGS 4 AND 5)

#### 3.1 Introduction and presentation of results

3.1.1 The results of the evaluation are presented below, and include a stratigraphic description of the trenches. The full details of the trenches with dimensions and depths of all deposits can be found in Appendix A. Finds data and spot dates are presented in Appendix B.

3.1.2 Context numbers reflect the trench numbers unless otherwise stated e.g. pit 7908 is a feature within Trench 79, while ditch 8004 is a feature within Trench 80.

#### 3.2 General soils and ground conditions

3.2.1 The ground within the two paddocks sloped downwards from north to south, and in consequence the depth of topsoil and subsoil increased from north to south.

3.2.2 There was no evidence of the made ground seen in the trenches dug previously further west, and the original topsoil and subsoil survived, indicating that this area lay beyond that stripped and landscaped during construction of the M2.

3.2.3 The geology was clay-with-flints, and none of the excavated features reached the underlying chalk.

3.2.4 Ground conditions throughout the evaluation were generally good, and the trenches remained dry throughout. The low angle of the sun made it more difficult to distinguish archaeological features at the start and end of the day, but in between features were relatively easy to identify against the underlying natural geology.

#### 3.3 General distribution of archaeological deposits

3.3.1 Archaeological features were present in both Trench 79 and 80.

#### 3.4 Trench 79 (Fig. 3)

3.4.1 This trench was 40m long and was orientated NNW-SSE (Plate 1). There were no geophysical anomalies of note in this field, nor anything of interest indicated on historic maps. A pit, a small pit or posthole, and a cable trench were revealed in the central part of the trench. Two geological linear anomalies were also visible as soilmarks crossing the trench on a north-south alignment. These were probably caused by water runoff.

3.4.2 Small pit or posthole 7906 lay on the west side of the trench. This was ovoid, and had sloping sides and a flat base (Fig. 4 Section 7900; Plate 2). There were no finds in its sole fill (7905).

3.4.3 Just south of 7906 was a cable trench, excavation of which revealed a cable at shallow depth (Plate 2). The excavated fill produced struck flints and fragments of brick of 19<sup>th</sup>/20<sup>th</sup> century date, which were not retained.

3.4.4 Pit 7908 lay some 3m south of 7906 on the west side of the trench, and continued beyond its edge. The exposed part was 0.92m by 0.58m in area, and had steeply sloping sides and a flat base (Fig. 4 Section 7901). There were two fills, the lower (7909) containing much charcoal, though there was no evidence of burning *in situ* (Plate 3). There were no finds from 7909. The upper fill (7907), which was also without finds, was very similar to the overlying

subsoil, and may have resulted from settling of the lower fill. This probably indicates that the feature is of recent date. In consequence the charcoal-rich fill was not sampled.

### 3.5 Trench 80

3.5.1 This trench consisted of two arms meeting in the middle at right angles (Figs 3 and 4). The western arm was orientated SW-NE (Plate 4), the eastern arm NW-SE. Each arm was approximately 30m long. The trench was laid out to cross two WW1 linear defences marked on Royal Engineer's maps made at the time when the defences were in use. The trench revealed one linear feature and two probable pits, all of which lay in the eastern arm of the trench (Fig. 4).

3.5.2 The linear feature, which ran NE-SW close to the east end of the trench, probably corresponded to the more easterly of two linear defences supposed to cross the eastern field. This was 1.7m wide and 0.76m deep, with a sloping north-west side, a steep south-east side, and a flattish base. The base was much shallower to the south-west than on the north-east; the deeper part is illustrated (Fig. 4 section 8001; Plate 5). There were three fills, 8003 on the south-east, 8010 on the north-west, and a more stony column of soil (8011) between them. This had roughly vertical sides, occupied the deepest part of the feature, and is interpreted as a post-pipe, the linear feature being a relatively shallow trench with deeper holes dug in the base at intervals to take posts. No finds were recovered from any of the fills.

3.5.3 Some 15m further west, pits 8005 and 8008 lay within 2m of one another. Pit 8005 was oval, measuring 0.95m x 0.72m, and was 0.27m deep, with sloping sides and a cupped base (Fig. 4 section 8002; Plate 6). There were two fills (8007 followed by 8006), neither of which contained any finds, although there was a little charcoal in 8006.

3.5.4 Pit 8008 was slightly smaller, measuring 0.8m x 0.62m, and was shallower (0.12m), with gently sloping sides and a flat base. No finds came from its only fill (8009).

### 3.6 Finds summary

3.6.1 The only finds recovered were struck flints from the topsoil in Trenches 79 and 80, and from the fill of the cable trench in Trench 79. Fragments of brick and tile of recent date were also found in the fill of this feature, but were not retained due to their recent date.



## 4 DISCUSSION

### 4.1 Reliability of field investigation

4.1.1 Conditions were generally good during the evaluation, and features were easy to distinguish despite the mixed and variable nature of the underlying geology. All the potentially archaeological features were tested by hand-excavation, and one area of uncertain character towards the south-west end of Trench 80 was machined down under close archaeological supervision to check that this was not archaeological. It proved to be an area of disturbance, probably caused by tree-rooting.

### 4.2 Evaluation objectives and results

4.2.1 The evaluation confirmed the presence of a linear feature corresponding to the location indicated by historic maps for a WW1 linear defensive feature in the eastern field, and although this feature did not produce dating evidence, it appears to confirm the map evidence. The evidence for a possible post-pipe or palisade is of interest, and shows that evidence of some complexity may well be present along this feature.

4.2.2 A range of other features of probable archaeological origin was also found, all of which were small discrete features, clarifying the character and apparent lack of complexity of the remains. None of these features was evident on the geophysical survey, but this is not surprising due to their small size, relatively shallow depth and lack of finds.

4.2.3 No dating evidence was recovered for any of these features, despite hand-sampling of all of them, rendering it impossible to answer the further general aims of the evaluation.

### 4.3 Interpretation

4.3.1 An assemblage of forty-six struck flints was recovered from the topsoil and from a modern feature in Trenches 79 and 80. The material was of several periods: early Neolithic, late Neolithic/early Bronze Age and later Bronze Age/Iron Age, but the majority dated to the late Neolithic/early Bronze Age period. This, while not a sufficient concentration to indicate a clearly defined concentration, certainly indicates a focus of activity in the area surrounding the trenches. The majority of the assemblage consisted of cores and flakes, although two scrapers were also present, so appears to represent both tool manufacture and hide preparation.

4.3.2 The struck flint from these trenches further adds to the picture of substantial use of the M2 Junction 5 area in early prehistory, and the different chronological emphasis of this assemblage suggests shifting foci of activity over time.

4.3.3 Although undated, the trench found towards the east end of Trench 80, which matches the alignment and position of a WW1 defensive line on historic maps, is believed to represent the below-ground element of this defence. From the limited exposure, the trench appears to consist of a shallow broad trench with deeper holes at intervals holding posts, backfilled with different material on either side. Rather than individual postholes, this may indicate that a continuous barrier was erected along the line of the trench, perhaps a line of wooden posts supporting a Dacoit fence, as was used in front of a gun battery at Sheerness (Smith *et al.* 2015, 41).

4.3.4 No trace of a second linear feature within Trench 80 was found where a second defensive line was marked from the Royal Engineer's maps, although two undated small pits or postholes lay within this area. It is possible that this line consisted only of barbed-wire fencing and coils, and that the features that were exposed represent postholes for fence-posts associated with this.

4.3.5 One small pit and a posthole were also found in Trench 79. Both were undated, and although the pit contained some charcoal, the slumping of subsoil into its top may mean that it is of recent date.

#### **4.4 Significance**

4.4.1 The WW1 linear feature is of county significance, both for the structural evidence it appears to contain, but also due to its being an element of a key defensive system of early 20<sup>th</sup> century date.

4.4.2 The presence of struck flints, which are found across much of the area of the proposed Improvements, but do not appear to represent a particular concentration, is on its own of only local significance. As part of the evidence for the prehistoric utilisation of the wider landscape around the M2, however, and of the shifting focus of activity within it, it is of greater significance.

4.4.3 The other features that were found are currently all undated. They may belong with the prehistoric activity indicated by the flintwork, or with the WW1 activity, but unless they prove to belong to structures, can only be considered as of negligible significance.

## APPENDIX A TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench 79						
General description					Orientation	NNW/SSE
Trench containing a pit, a small pit or posthole, and a cable trench. Consists of topsoil and subsoil overlying archaeological features and natural.					Length (m)	50
					Width (m)	1.6m
					Avg. depth (m)	0.4m
Context No.	Type	Length/Width (m)	Depth (m)	Description	Findings	Date
7900	Layer	-	0.30 average	Topsoil increasing from 0.25-0.35 from north to south. Dark reddish-brown, sandy silt, many flint inclusions.	Struck flints	-
7901	Layer	-	0.20 average.	Subsoil., increasing from 0.14-0.24 from north to south. Reddish-brown silty clay, many flint inclusions.	-	-
7902	Layer	-	-	Natural. Clay-with-flints.	-	-
7903	Fill of 7904	0.62	0.15+	Fill of Service trench. Soft mixed yellowish-brown and dark reddish-brown sandy clay, many flint inclusions.	Struck flint, brick	-
7904	Cut	0.62	0.15	Service trench containing cable. Vertical sides, not bottomed.	-	
7905	Fill of 7906	0.4	0.18	Dark yellowish-brown silty sand, frequent flint nodules	-	
7906	Pit cut	0.5 x 0.4	0.18	Cut of small pit with steep sides and a flat base.		
7907	Fill of 7908		0.12	Upper fill. Soft reddish-brown silty clay with frequent flint nodules. Similar to subsoil. Overlies 7909	-	
7908	Cut of Pit	0.92 x 0.58	0.25	Oval soilmark. Steeply sloping sides and a flat base. Continues into baulk.		
7909	Fill of 7908	0.52 x 0.34	0.14	Lower fill. Soft very dark greyish-brown to black silty clay with much charcoal and occasional	-	

				flint pebbles and burnt clay.		
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Trench 80						
General description					Orientation	NE/SW and NW/SE
Trench containing two pits and a WW1 trench that probably contained a fence or series of posts. Consists of topsoil and subsoil overlying archaeological features and natural.					Length (m)	50
					Width (m)	1.6m
					Avg. depth (m)	0.4m
Context No.	Type	Length/Width (m)	Depth (m)	Description	Finds	Date
8000	Layer	-	0.26 average	Topsoil, increasing from 0.24-0.28 from north to south. Dark reddish-brown, sandy silt, many flint inclusions.	-	-
8001	Layer	-	0.13 average.	Subsoil, increasing from 0.10-0.15 from north to south. Reddish-brown silty clay, many flint inclusions.	-	-
8002	Layer			Natural. Clay-with-flints.		
8003	Fill of 8004			Fill of eastern side of ditch. Compact light reddish-brown silty clay with frequent flint nodules and pebbles.	-	
8004	Cut of ditch	1.70	0.76	Sloping west side, steeply sloping east side and flattish base. Filled by 8003, 8010 and 8011. WW1 ditch with deeper post-positions.		
8005	Cut of pit	0.95 x 0.72	0.27	Oval pit with sloping sides and cupped base. Filled by 8006 and 8007.		
8006	Fill of 8005	0.95 x 0.72	0.17	Upper fill. Soft, dark reddish-brown silty clay with occasional flint pebbles and charcoal flecks.	-	
8007	Fill of 8005	0.6 x 0.4	0.24	Lower fill. Flint nodules in a matrix of reddish-brown clay, some smaller flints.	-	
8008	Pit cut	0.8 x 0.62	0.12	Oval pit. Sloping/shelving sides and flat base.		

8009	Fill of 8008	0.8 x 0.62	0.12	Soft, dark reddish-brown clay with frequent flint pebbles, some silt.	-	
8010	Fill of 8004	0.65	0.70	Compact greyish-brown clayey silt with occasional flint pebbles/nodules.	-	
8011	Fill of 8004	0.35	0.76	Friable, flint pebbles in a matrix of greyish-brown clayey silt. Central column within ditch, ? post-pipe.	-	

## APPENDIX B FINDS REPORTS

### B.1 Struck Flint

*By Tom Lawrence*

#### *Introduction (Table B.1.1)*

B.1.1 The evaluation for the M2 Junction 5 produced 46 struck flints from both topsoil and features. No burnt unworked flints were present. The assemblage was fairly homogenous, and a large proportion of flints were diagnostic of date. It is likely that they are Neolithic or Bronze Age, with the possibility of a small Iron Age component. The flints are in poor condition, as would be expected in a topsoil assemblage.

Table B.1.1: The flint assemblage from M2 Junction 5 evaluation

CATEGORY TYPE	Topsoil	Features	Total
Flake	18	3	21
Blade	5		5
Bladelet	1		1
Blade index	6/24 (25.00%)	0/3 (0.00%)	6/27 (22.22%)
Irregular waste	1		1
Levallois flake	2		2
Crested piece		1	1
Core rejuvenation flake	2		2
Core tablet	1		1
Core multi-platform flakes	1	1	2
Core Keeled/Discoïdal	2		2
Core fragment	1		1
Scraper side and end	1		1
Scraper discoïdal	1		1
Flake retouched	1	1	2
Misc retouch	2		2
Total	40	6	46
No. broken (%) (not including waste)	11/39 (28.21%)	1/6 (16.67%)	12/45 (26.67%)
No. retouched (%) (not including waste)	5/39 (12.82%)	1/6 (16.67%)	6/45 (13.33%)

B.1.2 The artefacts were catalogued according to OA South's standard system of broad artefact/debitage type (Anderson-Whymark 2013; Bradley 1999), general condition was noted and dating was attempted where possible. The assemblage was catalogued directly onto an Open Office spreadsheet. During the assessment additional information on condition (rolled, abraded, fresh and degree of cortication), and state of the artefact (burnt, broken, or visibly utilised) was also recorded. Retouched pieces were classified according to standard morphological descriptions (e.g. Bamford 1985, 72-77; Healy 1988, 48-9; Bradley 1999). Technological attribute analysis was initially undertaken and included the recording of butt and termination type (Inizan *et al.* 1999), flake type (Harding 1990), hammer mode (Onhuma and Bergman 1982), and the presence of platform edge abrasion.

#### *Provenance*

B.1.3 The majority of the assemblage (86.96%) derives from the topsoil around Trenches 79 and 80. The rest belong to modern features. The whole assemblage is therefore residual.

### ***Raw material and condition (Table B.1.2)***

B.1.4 The majority of the flints contain weathered chalk cortex indicating that the flints have come from local chalk sources. One piece of bullhead flint derives from the Thanet Sands formation. A further flint contained thermal platforms and may have derived from tertiary sources. The assemblage was mostly lightly or moderately damaged, only 7% of pieces being in fresh condition.

Table B.1.2: flint by condition

Condition	Total	%
Fresh	3	6.82
Light	18	40.91
Moderate	19	43.18
Heavy	4	9.09
<b>Total</b>	<b>44</b>	<b>100</b>

### ***The assemblage***

B.1.5 The assemblage has a moderate blade index (22%). There were a mix of core types, including complex levallois and keeled cores as well as a cubic core and a core fragment geared towards flake production. The curated assemblage consists of two core rejuvenation flakes and a core tablet as well as a crested flake and two levallois flakes. The tool percentage for this site is very high (13%), the majority of the tools being scrapers or retouched flakes. The high tool percentage very probably reflects the nature of topsoil assemblages.

### ***Discussion***

B.1.6 The assemblage contains characteristics from the early Neolithic, late Neolithic/early Bronze Age and possibly the later Bronze Age or Iron Age periods. Early Neolithic activity is represented by a cubic core found within context 7903 and a crested flake found within context 8009. A core tablet from the topsoil around Trench 80 may also be of similar date. The moderate blade index also suggests early Neolithic activity.

B.1.7 Late Neolithic/early Bronze Age activity on this site is defined by the presence of levallois and keeled cores as well as two levallois flakes, all found within the topsoil of Trench 79. The majority of flakes from this assemblage were squat and broad, also supporting a late Neolithic/early Bronze Age date for much of this assemblage.

B.1.8 A very crude multiplatform flake core that used naturally fractured thermal platforms was found in the topsoil of Trench 80. This type of crude technology that utilises poor quality, surface material in an *ad hoc* manner is typical of the later Bronze age (or early Iron Age).

B.1.9 Although this assemblage derives from the topsoil or modern features, it is still of note and the flints from this evaluation should be fully integrated into any future analysis arising from further investigation on the site or the local area. The late Neolithic/early Bronze Age component is more substantial than that from the previous phase of evaluation to the north

and west of the present site (OA 2018a), suggesting a different temporal focus in this part of the M2 Junction 5 landscape.



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**APPENDIX D****SITE SUMMARY DETAILS**

<b>Site name:</b>	M2 Junction 5 further evaluation
<b>Site code:</b>	STM2J 18
<b>Grid Reference</b>	568000 162160
<b>Type:</b>	Evaluation
<b>Date and duration:</b>	December 2018
<b>Area of Site</b>	2.2 hectares
<b>Location of archive:</b>	The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Sittingbourne Museum in due course, under the following accession number: tbc.
<b>Summary of Results:</b>	Atkins Consulting asked OA to undertake further trenching equivalent to 100m of trench in two paddocks north-east of M2 Junction 5 as part of evaluation preparatory to junction improvements.

Geophysical magnetometer survey had been carried out, but did not reveal any anomalies thought likely to be of archaeological origin. Historic maps indicated that two lines of WW1 defences passed through the eastern paddock, and the trench in that paddock was targeted to cross these defences.

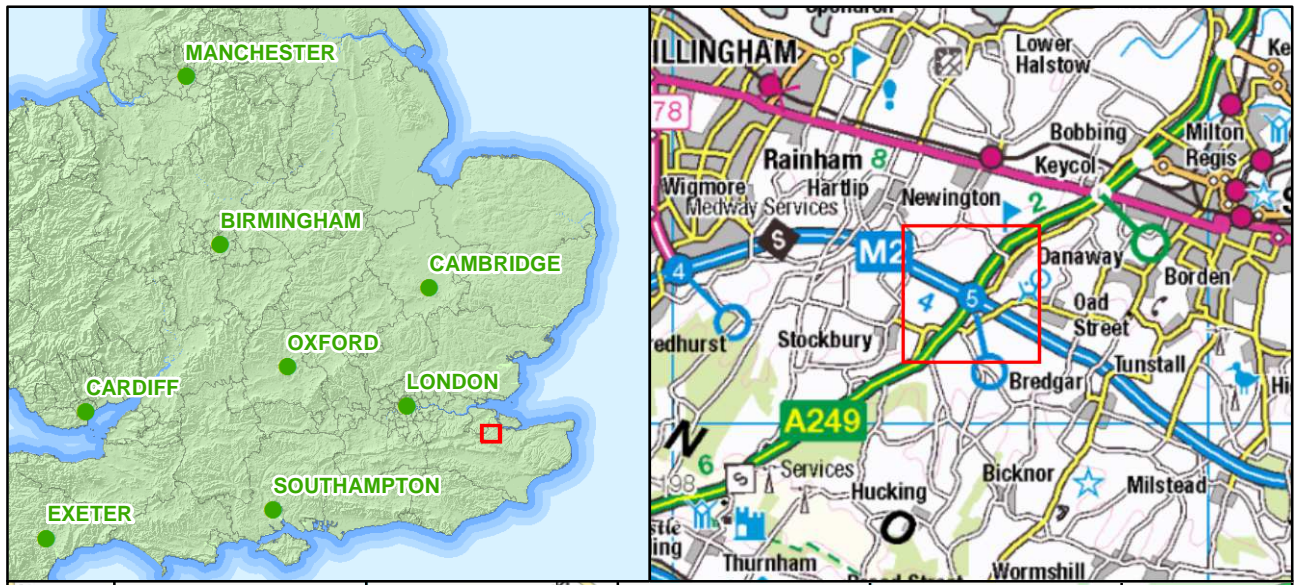
The 2017 evaluation just to the west had found heavy truncation and made ground immediately east of the crossing of the M2 and A249, probably during the construction of the M2 in the 1960s. The evaluation therefore also aimed to establish whether these paddocks were similarly affected, or were undisturbed.

The evidence from the trenches suggested that neither paddock had been heavily truncated. Two small pits or postholes were found in each trench, though no finds were recovered from any of these. A cable trench and a linear anomaly thought to be of geological origin were also found in Trench 79, and a wide ditch or palisade trench in the eastern trench, Trench 80. This corresponded to the more easterly defence line marked on the WW1 maps, and consisted of a broad shallow trench, but with at least one deeper section along its length, and in section there appeared to be a vertical post-pipe with a different fill on either side. This suggests that deeper post-positions were dug at intervals along the trench to support posts and a continuous barrier, or barbed wire fencing.

No trace was found of any linear feature corresponding to the more westerly defence line, although the two small pits or postholes lay within the width indicated, and may have been postholes for a barbed-wire fence.

A substantial collection of struck flints was found in the topsoil and in the cable trench. These were mainly of Neolithic or early Bronze Age date, with a preponderance of pieces of late Neolithic/early Bronze Age character. Compared to the struck flints from other parts of the scheme area, there appears to be a focus of activity of this period around these trenches.

There were no other finds except brick fragments of later 19<sup>th</sup>/20<sup>th</sup> century date.



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Figure 1: Site location map

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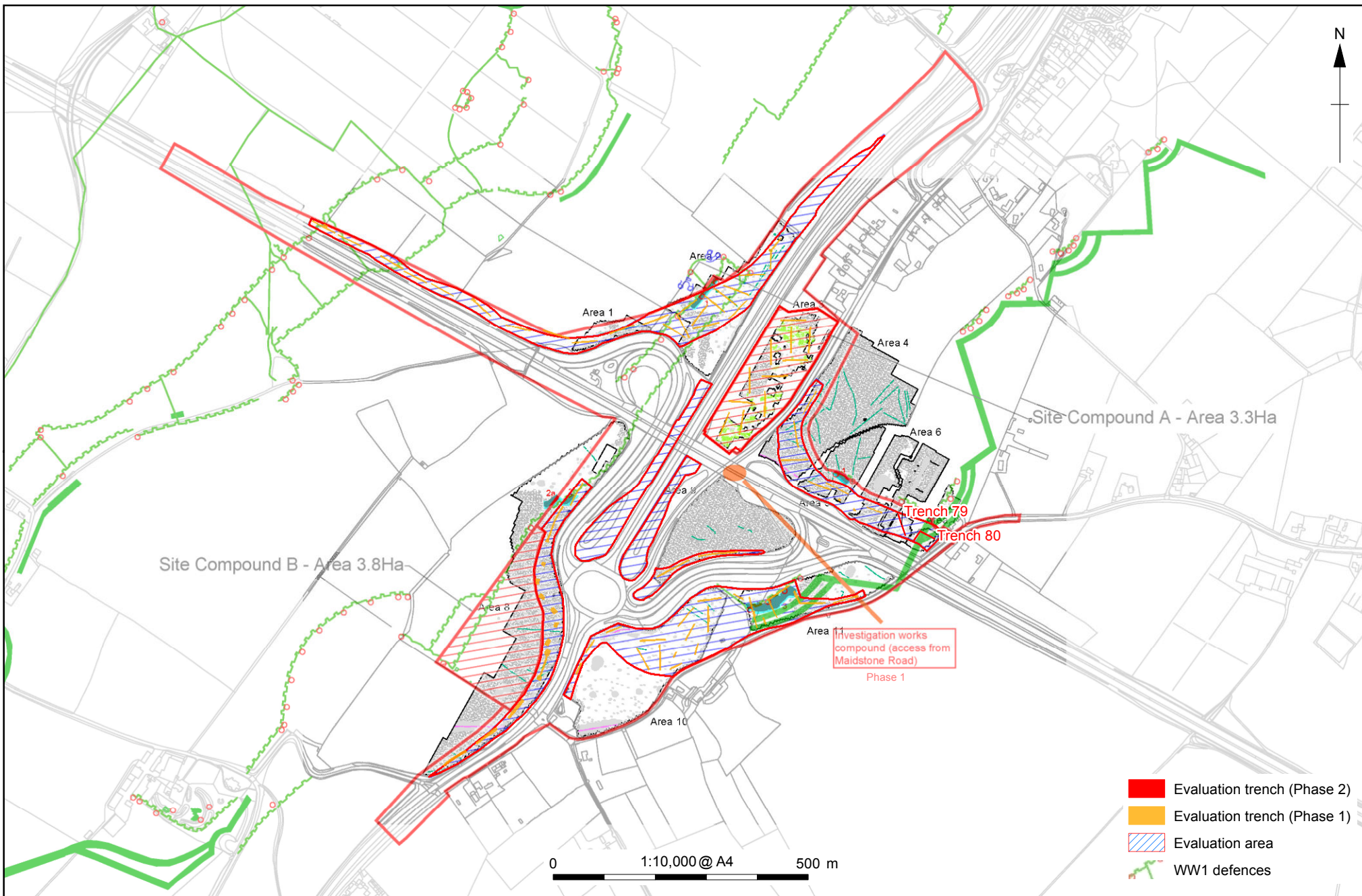
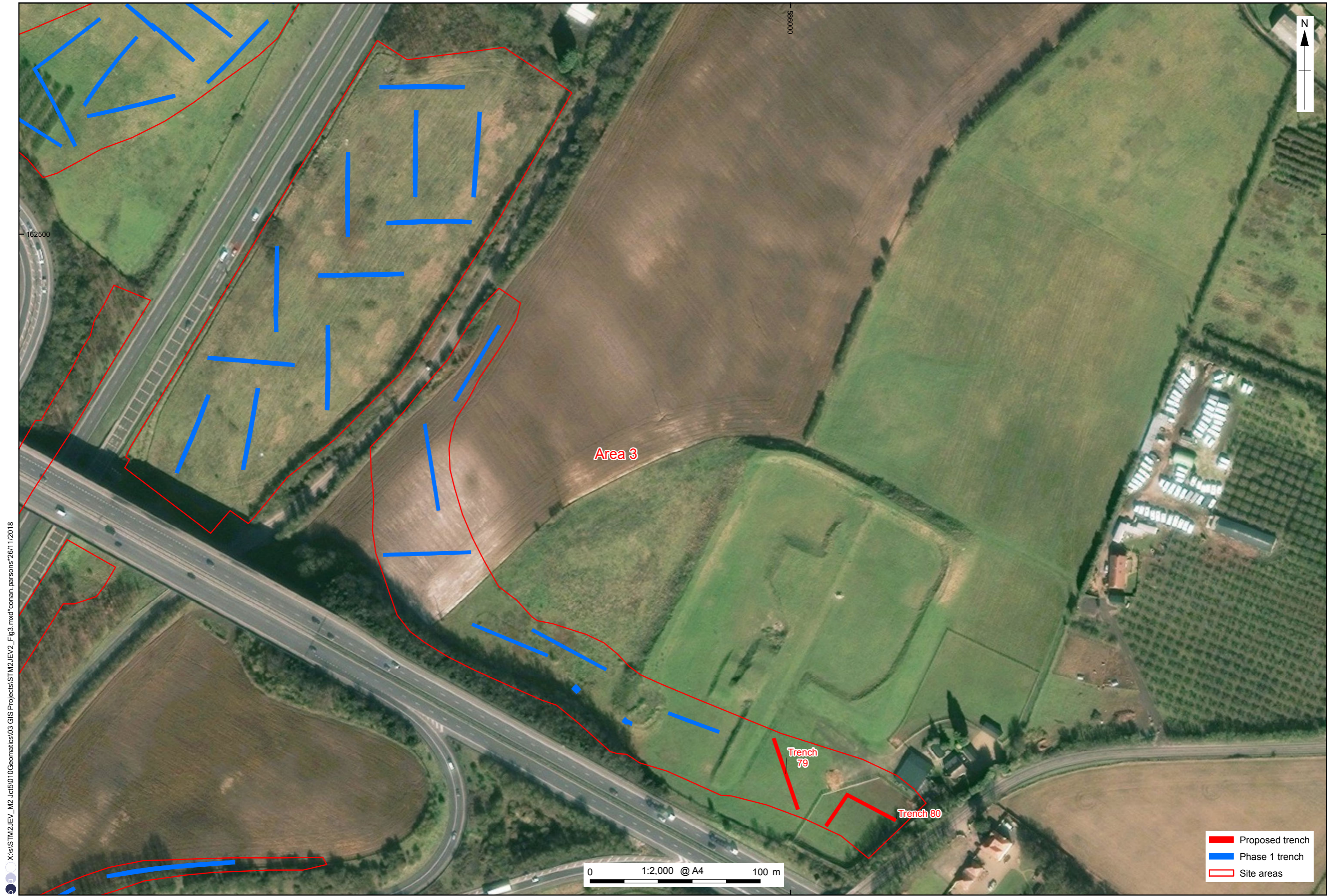


Figure 2: Scheme showing geophysical survey interpretation and WW1 trenches from historic maps



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 3: Detail of Junction 5 NE area with proposed trenches

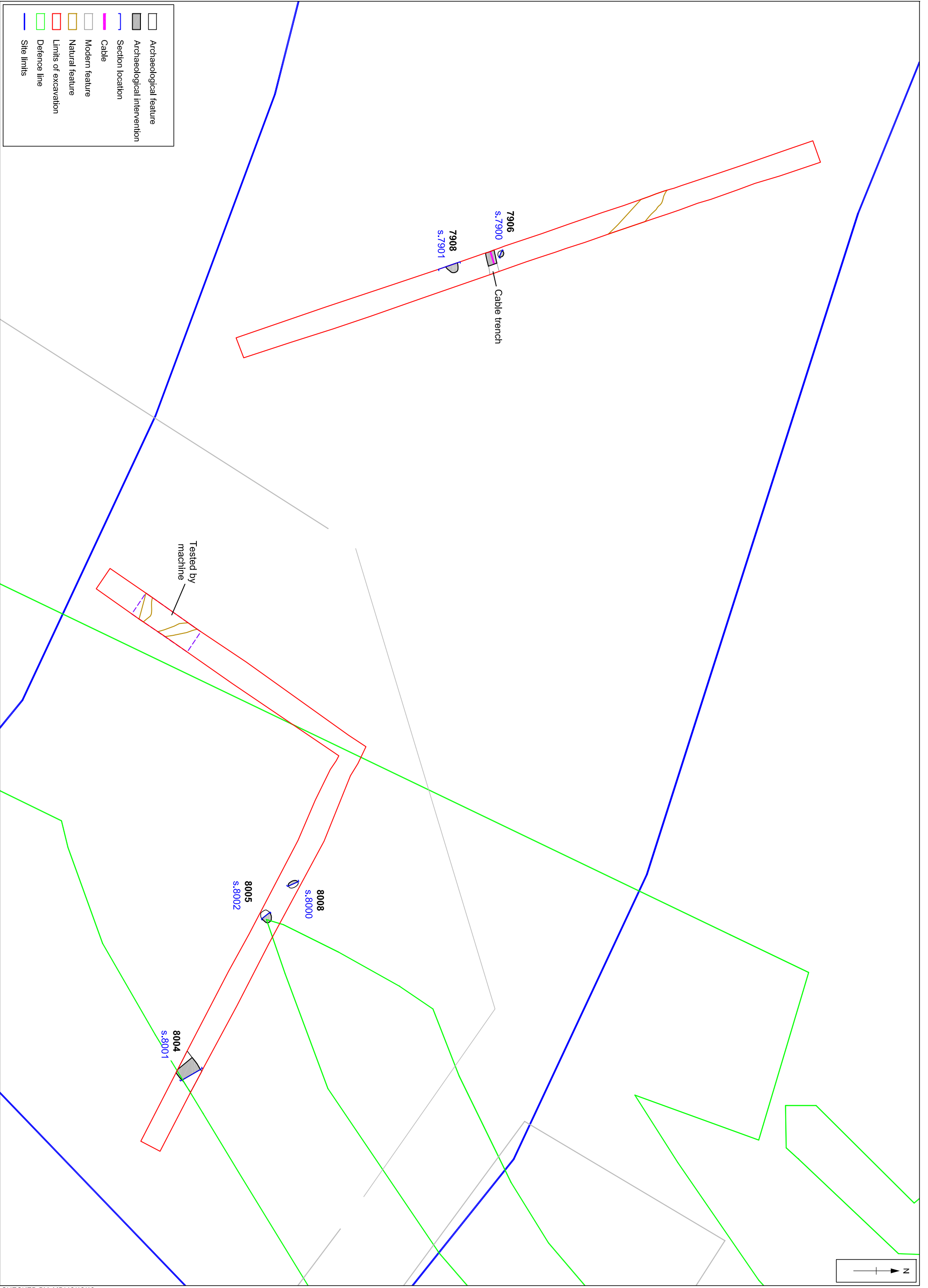


Figure 4: Plan of Evaluation  
Trenches 79 and 80



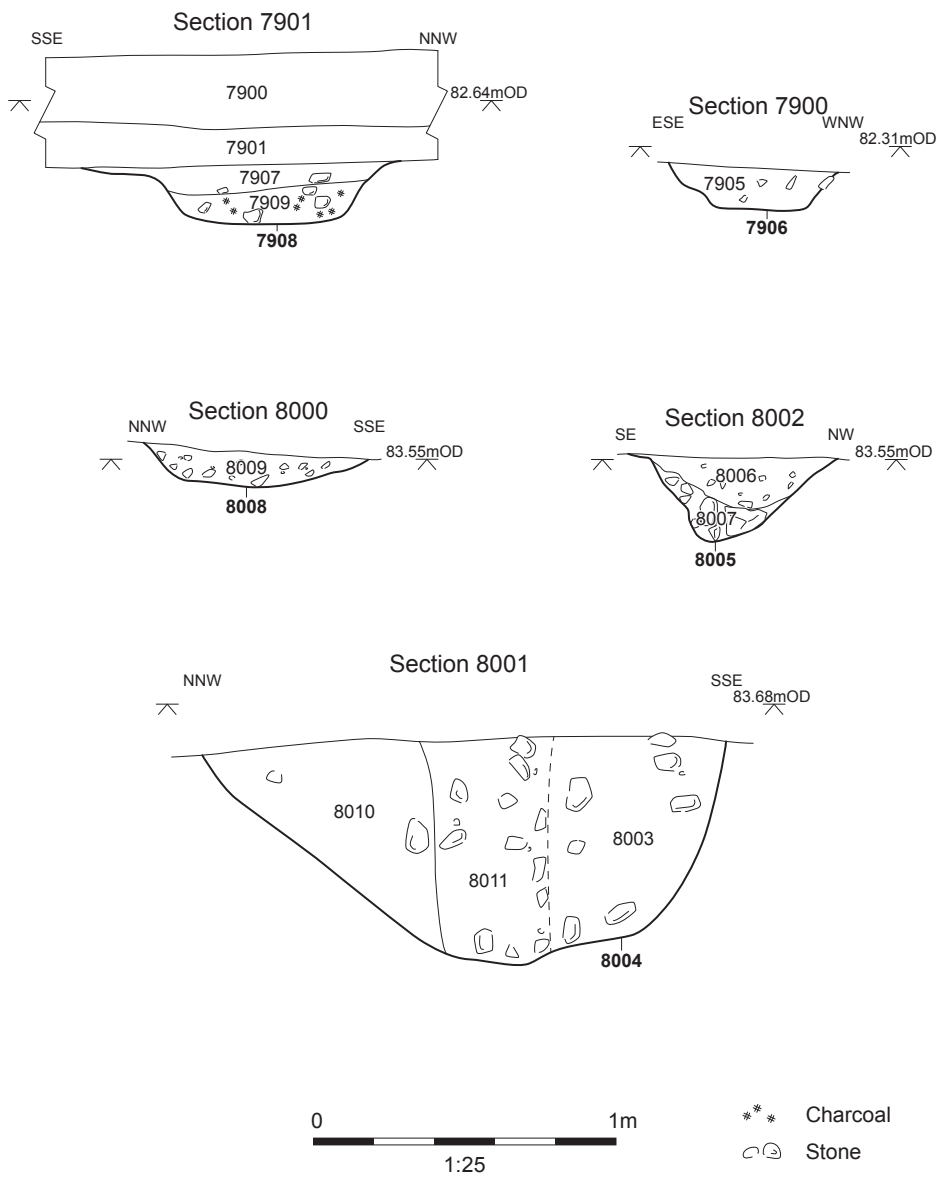


Figure 5: Sections



Plate 1: Trench 79 stripped, looking SSE



Plate 2: Posthole 7906 half-sectioned, looking south with 7204 behind



Plate 3: Pit 7908 half-sectioned, looking WSW



Plate 4: Trench 80 (west part) looking south-west



Plate 5: Ditch 8004 sectioned, looking ENE



Plate 6: Pit 8005 half-sectioned, looking south-west



Plate 7: Pit 8008 half-sectioned, looking ENE



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