1EW03 – Enabling Works Central

AWHh Fieldwork Report for Trial Trench Evaluation at Station 53C, Portway Farm, Buckinghamshire (AC250/43)

Site Code: 1C19PWFTT

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1 Executive Summary

1.1.1 An archaeological Trial Trench Evaluation was undertaken at Station 53C, Portway Farm, Buckinghamshire (henceforth the 'Site'). The site code allocated for this work was 1C19PWFTT.

1.1.2 The Site is located within CFA13 Calvert, Steeple Claydon, Twyford & Chetwode Community Forum Area, in the county of Buckinghamshire. The village of Twyford is situated c. 970m to the west and Steeple Claydon c. 1.7km to the north-east. The Site comprises parts of two fields, enclosing c. 16.18ha centred on NGR 467700, 226170 (Figure 1).

1.1.3 The evaluation was targeted on the land parcel (C25095) required for the rail alignment formation and associated earthworks, the construction of the Calvert Cutting, Perry Hill Overbridge and Temporary Highway Diversion, West Street Overbridge, Portway Culvert, Calvert Infrastructure Maintenance Depot and main construction compound as outlined in the Project Plan (Document Ref: 1EW03-FUS-EV-REP-CS05-007829), and followed the methodology laid out in the Location Specific Written Scheme of Investigation (Document Ref: 1EW03-FUS-EV-REP- CS06_CL09-000001). A Project Plan for Historic Building Recording of the surviving transmitter station structures has also been prepared (1EW03-FUS-EV-REP-CS06_CL09-007810).

1.1.4 The main purpose of the Trial Trench Evaluation was to target potential archaeological remains associated with a Second World War wireless transmitter station within the Site. Station 53C was the most technologically advanced of the Special Operations Executive's (SOE) wireless transmitters, constructed in 1944 to handle transmitted communications to the Scandinavian theatre of operations. It was manned by the American Office of Strategic Services (OSS), although the SOE were responsible for its design and construction. A full description of the wartime role of Station 53C is contained within the Project Plan for the Site and a detailed description of the surviving structures is contained within the Historic Building Recording Project Plan.

1.1.5 A remote sensing survey incorporating light detecting and ranging (LiDAR), hyperspectral imagery and aerial photographic analysis undertaken as part of the 2013 Environmental Statement (ES 3.5.2.13.7) also confirmed the presence of ploughed-out ridge and furrow within the Site, reflective of medieval or early post-medieval cultivation practices.

1.1.6 The Trial Trench Evaluation consisted of 32 excavated trenches, comprising 15no. 30x1.8m trenches; 2no. 30x4m trenches; 1no. 60x1.8m trench; 13no. 4mx4m test pits and 1no. irregular area measuring a maximum of 54x50m. The evaluation was targeted on geophysical imagery and was designed to investigate areas of construction impact. The evaluation was carried out during September and October 2020. Of the 32 trenches excavated, 17 revealed archaeological features, including furrows from medieval cultivation, Second World War activity associated with Station 53C, two undated gullies and an undated post hole.

2 Project Background and Scheme Design

2.1.1 High Speed Two (HS2) is a new railway network proposed by Government to provide a link between London, the West Midlands, the East Midlands, South Yorkshire, Leeds and Manchester. Phase One of HS2 will involve the construction of a new railway approximately 230km (143 miles) in length between London and the West Midlands. Powers for the construction, operation and maintenance of Phase One are conferred by the High-Speed Rail (London - West Midlands) Act 2017.

2.1.2 The overall framework within which archaeological work will be undertaken is set out in the Environmental Minimum Requirements (EMR), the Heritage Memorandum, the Code of Construction Practice (CoCP) for HS2 Phase One and the GWSI: HERDS. Accordingly, the nominated undertaker or the Archaeological Contractor are required to implement appropriate and reasonable measures to identify, avoid or where practicable reduce impacts to the significance of heritage assets prior to the start of construction.

2.1.3 The Site is required for the rail alignment formation and associated earthworks and landscaping.

3 Site Location

3.1.1 The Site is located within CFA13 Calvert, Steeple Claydon, Twyford & Chetwode Community Forum Area, in the county of Buckinghamshire. The village of Twyford is situated c. 970m to the west and Steeple Claydon c. 1.7km to the north-east. The Site comprises parts of two fields, enclosing c. 16.18ha centred on NGR 467700, 226170.

3.1.2 The Site is within land parcel C25095 and bounded to the west by Main Street, to the north and east by Perry Hill, and to the south by the partially extant route of the disused London Extension of the Great Central Railway. The Site is formed by parts of two agricultural fields, under arable use, divided by a ditched watercourse.

4 Site Geology and Topography

Geology

4.1.1 The British Geological Survey records the underlying bedrock geology as mudstone of the Peterborough Member, having formed approximately 164 to 166 million years ago in shallow sea environments of the Jurassic Period (BGS 2020).

4.1.2 The Site is largely bereft of mapped superficial geological deposits. A thin band of alluvium (clay, silt, sand & gravel) is mapped along the unnamed watercourse dividing the Site into two parcels. This feature is a tributary of Padbury Brook, the latter running on a broadly northeast/south-west alignment within c. 350m north from the Site. Padbury Brook forms the geological character of the immediate environs of the Site, having formed a small, postglacial river system on the periphery of the glacial till fields exhibited further north, complete with gravel terrace deposits and alluvial beds (BGS

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2020). The geology encountered during the evaluation typically consisted of mottled orange and grey clays.

Topography

4.1.3 The Site lies at approximately 84m above Ordnance Datum (aOD). The land rises to approximately 86m aOD at the western boundary and approximately 89m aOD at the eastern boundary.

Previous Disturbance

4.1.4 With the exception of the areas impacted by Second World War construction, there is little indication that the Site has undergone significant disturbance, for example, there is no sign of quarrying within the area that was evaluated. There is likely to have been some limited impact from agricultural ploughing from the medieval period to the present.

5 Previous Works

5.1.1 A Project Plan detailing the scope, aims and methodologies required to address specific GWSI: HERDS research objectives identified as being applicable to this Site was prepared for the works; *Project Plan for Trial Trench Evaluation at Station 53C, Portway Farm, Buckinghamshire (AC250)* (Document no: 1EW03-FUS-EV-REP-CS05-007829).

5.1.2 A Location Specific Written Scheme of Investigation detailing the methodology, deliverables, programme, health, safety and environmental requirements, resources and interfaces necessary to deliver the archaeological evaluation was prepared for the Site; *Location Specific Written Scheme of Investigation for Archaeological Trial Trenching at Station 53C, Portway Farm, Buckinghamshire (AC250)* (Document no: 1EW03-FUS-EV-REP- CS06_CL09-000001)

5.1.3 An Environmental Statement (ES 3.5.2.,13.4-7) was prepared in 2013, part of this was to provide an evidence base against which the assessment of assets that may be affected by the construction of the Proposed Scheme could be made. It contained information about known and potential heritage assets from a variety of sources and presented a chronological description and discussion of the development of the study area, placing assets within their historical and archaeological context. No designated heritage assets were recorded within the Site and those in closest proximity to the Site comprise several Listed Buildings within Twyford & Steeple Clayton and dispersed within the rural landscape. The closest designated asset in the Grade II Listed Shepherd's Furze Farmhouse, situated c. 710m south-east of the Site (Listing ID: 1214845)

5.1.4 There are several Archaeological Notification Areas (ANA) as designated by Buckinghamshire HER situated between Twyford and the Site. These principally comprise areas of identified ridge and furrow earthworks, however there are also three ANAs around Twyford which contain earthworks suggestive of a shrunken medieval settlement. The Site lies wholly within Archaeological Sub-Zone (ASZ) 13-13 Fields to the south of Padbury Brook. This ASZ is characterised as a mix of river terrace and alluvial deposits across generally level topography. The archaeological character is informed by a small number of chance Neolithic findspots and the recovery of Pleistocene faunal remains during gravel extraction in the river terrace deposits.

5.1.5 The Environmental Statement included the results of a remote sensing survey of the Site and its environs. The remote sensing survey included the interpretation of aerial photographs, hyperspectral imagery and LiDAR imagery. The results showed that levelled ridge and furrow was present within the Site on at least four differing alignments. No above-ground remains associated with Second World War activity were identified, aside from the extant buildings.

5.1.6 As part of the HS2 works, two geophysical surveys were undertaken across the Site in 2016 and 2018. In 2016, survey in advance of works associated with the Calvert Cutting and two high-pressure gas main diversions was undertaken across the south-east part of the Site (Doc Ref: C252-ETM-EV-REP-020-000263_P02). A second phase was undertaken in 2018 across the north-west part of the Site (Doc Ref: 1EW03-FUS-EV-REP-CS06_CL09-007287) which highlighted possible below-ground remains associated with the Second World War wireless transmitter station. The survey results showed geophysical anomalies across the Site indicating it has been subject to a high degree of disturbance, and suggesting the probable presence of remains of former military structures. The survey also identified numerous anomalies characteristic of plough furrows, which indicated widespread disturbance from medieval or later cultivation which has also affected the Site. In addition, the survey also highlighted a small number of possible archaeological features in the northern corner of the Site, although these were not targeted by the trial trenching.

5.1.7 Part of the Site was included within the scope of Urgent Works for a trial trench evaluation in advance of the Calvert Cutting construction and gas main realignment (Doc Ref: 1EW03-FUS-EV-REP-CS06_CL09-000001). Seven trenches were excavated within the south-east part of the Site (Area 2.1, Trenches 10-16) and these contained a number of plough furrows. Additional trenches were excavated north-east and south of the Site during the urgent works, and these recorded a small number of undated features. No remains relating to the Second World War transmitter station were identified during the urgent works trial trenching.

6 Aims and Specific Objectives

6.1.1 The full aims and objectives for the archaeological trial trenching can be found in Section 3 of the Project Plan. Trial trench investigation provides the most suitable method for the recovery of archaeological evidence to inform the research objectives. Section 4 of the Project Plan provides a methodology and deliverables for the trial trench evaluation.

6.2 General Aims

6.2.1 The aims of the trial trenching were to:

- Confirm the presence/absence, extent and depth of any surviving Second World War remains within the Site
- Determine the nature, date, condition, state of preservation, complexity and significance of any Second World War remains

- Determine the likely range, quality and quantity of artefactual and environmental evidence present
- Suggest measures, if appropriate and feasible, for further archaeological investigation to mitigate identified significant impacts, and
- Contribute to the delivery of GWSI: HERDS Specific Objectives as specified in Section 4.2 of the project plan.

6.3 Specific HERDS Objectives

6.3.1 The trial trenching was required to help clarify the location, extent, survival and significance of any heritage assets in the vicinity of the Site and will contribute to the following specific GWSI: Historic Environment Research and Delivery Strategy (HERDS) objectives, as detailed in the Project Plan:

- KC45: The conflicts of the 20th century define the history of modern Britain and the world: how can we achieve a greater understanding of the significance of sites associated with conflict to local communities along the route?
- KC47: Test and develop geophysical survey methodologies.

7 Scope and Methodology

7.1 Scope

7.1.1 The trial trench evaluation of the Site was undertaken in September and October 2020. A total of 32 trial trenches were excavated as per the Project Plan. These trenches comprised 15no. 30x1.8m trenches; 2no. 30x4m trenches; 1no. 60x1.8m trench; 13no. 4mx4m test pits and 1no. irregular area measuring a maximum of 54x50m. Trenches were targeted over anomalies revealed in the geophysical survey.

7.1.2 A contingency trenching of up to 400m² of trenching was available, subject to approval by the Contractor, if further clarification of the archaeological remains was considered necessary to meet the aims of the evaluation.

7.2 Methodology

7.2.1 The trial trench evaluation was undertaken in accordance with the Technical Standard Specification for historic environment investigations (HS2-HS2-EV-STD-000-000035) and the GWSI: HERDS (HS2-HS2-EV-STR-000-000015), and the Project Plan for Trial Trench Evaluation at Station 53C, Portway Farm, Buckinghamshire (AC250).

7.2.2 The fieldwork followed the Standard and Guidance: Archaeological Evaluation (CIfA 2014a), the Management of Archaeological Projects 2 (English Heritage 1991), the Management of Research Projects in the Historic Environment (MORPHE): Project Managers' Guide (Historic England 2015) and the Technical Standard Specification for historic environment investigations (HS2-HS2-EV-STD-000-000035).

Artefact Recovery

7.2.3 As the evaluation was principally concerned with activity which had occurred within the modern period, there were no additional test pits dug in order to facilitate sieving for unstratified artefacts.

Setting-out

7.2.4 All spatial setting out and recording was undertaken in accordance with The Ordnance Survey National Grid and Ordnance Survey Newlyn Datum (ODN) as defined by the OS Active Global Navigation Satellite System (GNSS) network and use of a Virtual reference system.

7.2.5 Trenches were located to a horizontal accuracy of +/-500mm with surface levels recorded to an accuracy of 10mmÖk: where 'k' was the total distance levelled in kilometres.

Machine Excavation

7.2.6 Trenches were excavated to either the first archaeological horizon or the natural substrate, whichever was reached first, using a mechanical excavator fitted with a toothless bucket.

7.2.7 Each machine was under the constant supervision of a suitably trained, competent and experienced archaeologist.

7.2.8 A CAT scanner was used at each 300mm excavated spit to ensure no unidentified buried services were present.

7.2.9 Topsoil and subsoil were stripped independently and stored separately on either side of the trench, as per the Technical Standard: Route Wide Soil Resource Plan (HS2-HS2-EV-STD-000-000008).

Fieldwork Recording

7.2.10 A sufficient sample of each feature was excavated to meet the requirements of the GWSI: HERDS.

7.2.11 Archaeological recording comprised:

- at least one representative section at 1:20 scale of each evaluation trench, from ground level to the base of the excavation
- the written record of individual context descriptions on appropriate pro-forma
- photographs with details recorded in a photo-register
- linear features identified within the trenches were 50% or 20% excavated, discrete features 50% excavated
- section drawings of features were made at 1:20 and 1:10 as appropriate

7.2.12 A 'Site location plan', indicating Site north was prepared at 1:1250:

- individual 'trench plans' were prepared at 1:100
- the location of site plans was identified using OSGB coordinates

Environmental Sampling

7.2.13 In line with the Employer's Technical Standard Specification for Historic Environment Investigations (HS2-HS2-EV-STD-000-000035) the following sampling strategy was implemented:

- Archaeological features (pits, boundary ditches and paleochannels)
- Deposits representing the main phases of activity on Site (to assess whether there were changes in rates of deposition, or material survival over time)
- Samples were taken to provide dating, palaeo-environmental and site formation information

7.2.14 No deposits that required environmental sampling were encountered during the course of the evaluation.

Backfilling

7.2.15 Once recording was completed the trench was backfilled in reverse order (subsoil first then topsoil) and the ground made good.

7.3 Change Control

7.3.1 Three of the trenches were moved slightly to avoid a stone haul road and earth bund as per Fieldwork Change Control doc. no. 1EW03-FUS-EV-FRM-CS05-000047.

8 Results of Trial Trench Evaluation

8.1 Geological Sequence

8.1.1 The natural substrate or archaeological horizon comprised a mottled orange and grey clay.

8.1.2 The natural substrate or archaeological horizon was sealed by subsoil of mid orange - brown silty clay averaging approximately 0.3m thick which was overlain by topsoil of dark brown silty clay of approximately 0.15m thickness.

8.2 Archaeological Results

8.2.1 Seventeen of the 32 trenches contained archaeological features. The remainder were blank (Figure 2). All identified features cut the natural substrate.

8.2.2 The following section contains a description of the features and deposits excavated during the evaluation and should be read in conjunction with Appendix 3, which provides detailed descriptions and stratigraphic information for each deposit and cut feature.

8.2.3 The results of the trenches containing features are discussed below, in numerical order. For the purposes of this report, the conclusion will discuss the results thematically and chronologically.

8.2.4 A summary of the findings is in table 1, below.

Table 1 – Summary table of findings

Trench Number	Features	Provisional Date
001	Blank	
002	Rebar	Second World War
003	Rebar	Second World War
004	Blank	
005	Rebar	Second World War
006	Blank	
007	Blank	
008	Blank	
009	Blank	
010	Post hole, tree bowl	Undated
011	Furrows	Medieval/post-medieval
012	Furrows	Medieval/post-medieval
013	Furrows, rebar	Medieval/post-medieval Second World War
014	Blank	
015	Blank	
016	Pit	Modern
017	Blank	
018	Blank	
019	Blank	
020	Blank	
021	Rebar	Second World War
022	Gully	Undated
023	Furrows	Medieval/post-medieval
024	Rebar	Second World War
025	Blank	
026	Furrows, Rebar	Medieval/post-medieval, Second World War
027	Blank	
028	Rebar	Second World War
029	Rebar, gully	Second World War, undated
030	Rebar	Second World War
031	Blank	
032	Furrows, rebar	Medieval/Post-medieval Second World War

Trench 002 (figures 2, 5 and 6)

8.2.5 An iron rebar anchor point (202003) was encountered centrally within the trench, at a depth of 0.45m below present ground level (bpgl).

Trench 003 (figures 2, 5 and 6)

8.2.6 An iron rebar anchor point (203003) was identified fairly centrally within the trench at a depth of 0.46m bpgl.

Trench 005 (figures 2, 5 and 6; plate 4)

8.2.7 At the south-western limit of Trench 005 anchor point cut [205003] was encountered at a depth of 0.46 bpgl. It was not fully exposed in plan within the trench, but where excavated contained a single fill of redeposited natural clay (205005) and a substantial wooden plank to which iron rebar (205004) was attached.

Trench 010 (figures 2, 3, 6 and 12)

8.2.8 An undated post hole [210003] was identified within Trench 10. It was circular in plan with gently sloping concave sides and base but appeared heavily truncated, only

surviving to a depth of 0.1m. It contained a single tertiary fill of mid grey brown silty sand (210004) but no dateable artefacts.

8.2.9 A tree bowl/tree throw hole [210005] was also recorded. It was irregular in plan and form with a single fill (210006).

Trench 011 (figures 2, 4 and 6)

8.2.10 Trench 011 contained a single furrow [211003] sealed below subsoil (211001) and topsoil (211002). It was aligned approximately north-west – south-east and had shallow concave sides and base. It measured 3.05m in width, 0.19m in depth and contained a single mid grey brown silty clay fill (211004). No finds were recovered.

Trench 012 (figures 2, 4, 7 and 12)

8.2.11 Four parallel north-south aligned undated linear furrows were present within the Trench. Two were investigated and all were sealed below subsoil (212001) and topsoil (212002). Furrow [212003] was located towards the western end of the trench. It measured 2m wide, 0.13m deep and had gently sloping concave sides and base. It contained a single fill (212004) from which post-medieval ceramic building material (CBM) and glass were recovered.

8.2.12 Furrow [212005] was located more centrally within the trench. It measured 2m in width and 0.15m in depth, with gently sloping concave sides and base. It was filled with mid grey brown silty sand (212006) and did not contain any dateable artefacts.

Trench 013 (figures 2, 4, 5 and 7)

8.2.13 Three parallel furrows were identified within Trench 013 sealed below subsoil (213001) and topsoil (213002), one was investigated. Furrow [213003] was linear in plan with gently sloping sides and a concave base, surviving to a depth of 0.15m. It contained a single mid grey brown silty sand fill (213004).

8.2.14 A metal rebar anchor point (213005) was also identified.

Trench 016 (figures 2, 5, 7 and 12)

8.2.15 The natural substrate (216000) was encountered at a depth of 0.4m bpgl. At the northern end of the trench (216000) was cut by a large pit [216003] which was not fully exposed in plan within the trench. Where investigated it had steep sides and was at least 2.8m in length, 1.8m in width and 0.35m in depth. Pit [216003] contained a mid-orange-brown silty clay fill (216004) with modern bricks and concrete, suggesting it was of relatively recent date. It was likely used for waste disposal or perhaps as a soakaway pit. The bricks themselves were 20th century in date, labelled 'LBC Phorpres', utilitarian construction bricks produced by the London Brick Company. They were not retained.

Trench 021 (figures 2, 5 and 8)

8.2.16 An anchor point of iron rebar and wood construction (221004) was identified, the wood component measuring 0.6m long, 0.2m wide and 0.1m thick and the iron rebar extending 1.3m from it. It was contained within cut [221003] and backfilled with a mid-orange-brown sandy clay redeposited natural (221005).

Trench 022 (figures 2, 3 and 8)

8.2.17 A single north-east/south-west oriented gully [222003] was recorded as cutting the natural substrate. It was linear in plan, with moderately sloping concave sides and an irregular base. Where excavated it was narrow, at 0.5m wide and up to 0.15m deep. It contained a single secondary fill of mid grey brown silty clay (222004) that was undated.

Trench 023 (figures 2, 4 and 8)

8.2.18 A single north-south aligned, undated furrow was encountered within the northern half of Trench 23. It measured 1.3m in width and up to 0.17m in depth, with gently sloping sides and a slightly concave base. It contained a single fill (223004) which consisted of a mid-grey brown silty sand.

Trench 024 (figures 2, 5 and 9)

8.2.19 An iron rebar anchor point (224003) was encountered fairly centrally within the trench.

Trench 026 (figures 2, 4, 5 and 9)

8.2.20 Four parallel furrows were recorded, aligned approximately north-west/south-east, one was investigated. Furrow [226003] measured 1.5m wide and 0.17m deep, with gently sloping sides and a slight concave base. It contained a single fill (226004) which consisted of mid grey brown silty sand.

8.2.21 An iron rebar anchor point (226005) was also identified.

Trench 028 (figures 2, 5 and 9)

8.2.22 Trench 028 contained a single iron rebar anchor point (228003).

Trench 029 (figures 2, 3, 10 and 12)

8.2.23 A single gully [229003], aligned approximately east-west, was encountered at the north western end of the trench. It had near vertical sides, a concave base and measured 0.65m wide and 0.24m deep, significantly narrower than the recorded furrows. It contained a single fill (229004) and no dateable artefacts.

Trench 030 (figures 2, 5 and 10)

8.2.24 An iron rebar anchor point (230003) was identified towards the north-eastern end of the trench.

Trench 032 (figures 2, 4, 5 and 11; plate 3)

8.2.25 Trench 032 consisted of a larger stripped area up to 55m long and 50m wide. Four parallel furrows aligned approximately north-east/south-west were identified, although given time constraints, these were recorded in plan and not investigated further.

8.2.26 Two rebar anchor points were also identified, (232003) and (232004).

9 Finds Assessment

9.1 Ceramic Building Material (Appendix 6)

9.1.1 The Trial Trench Evaluation at Portway Farm resulted in the recovery of 7 fragments of ceramic building material (CBM), dating to the Post Medieval Period. Of the 32 trenches investigated finds were only recovered from two trenches, all material was recovered from furrow fills.

9.1.2 In total six fragments of ceramic tile, weighing 84.5g, were recovered from furrow [211004] within Trench 11. A single additional fragment of ceramic tile, weighing 54.8g, was recovered from furrow [223003] within Trench 23. All material was post-medieval in date, highly fragmented and abraded with no clear diagnostic features. Given the abraded condition and placement within furrows it is probable that the material has been subject to movement by plough and may possibly be derived from manuring (Table 4).

Potential and Recommendations

9.1.3 The assemblage is too limited to allow for meaningful analysis. None of the sherds here warrant further analysis or illustration and could be discarded.

9.2 Palaeoenvironmental

Method Statement

9.2.1 Features and deposits were assessed for their potential to provide palaeoenvironmental evidence through the evaluation of the content and preservation of the plant macrofossil assemblages. No such features or deposits were identified.

Potential and Recommendations

9.2.2 The evaluation has demonstrated the limited archaeological potential of the Site, particularly in regard to paleoenvironmental evidence. Given this sparse coverage of mostly modern or medieval/post-medieval features, there is very limited scope for the further identification of features or deposits that will merit environmental sampling.

10 Assessment and Interpretation of Results

10.1.1 The results of the Trial Trench Evaluation identified archaeology in 17 trenches out of 32.

10.1.2 The Trial Trench Evaluation at Portway Farm only identified limited archaeological evidence, and nothing that firmly pre-dated the medieval period. The presence of furrows is indicative that the site was cultivated in the medieval and/or early post-medieval period, the corresponding ridges having been previously destroyed by more recent ploughing. Extant ridge and furrow earthworks still survive in fields adjacent to the Site. The presence of ceramic tile from within two of the furrows supports a post-medieval date although it is perfectly possible that the Site had been cultivated for

some centuries before and the tile more reflective of the time when the earthworks were intentionally levelled.

10.1.3 The only evidence identified that is likely to be associated with Station 53CA were a series of possible metal anchor points. These were found within a number of the trenches and were contained within imperceptible construction cuts of varying depths, that cut into the geological substrate. The anchor points themselves consisted of lengths of metal rod/rebar, some of which, where investigated, were found to be attached to large blocks of wood, with the wood acting as a foundation sleeper to hold the rebar in place. At their original extent the simple lengths of iron rod may have been a single piece bent over into a V-shape, attached to the aerial superstructure by means of a fixing bracket (Plate 2). It was this V-shaped rod that likely had each end attached to the wooden foundation block. A possible aerial fixing bracket was recovered and had metal fittings at either end, suggesting it was part of a larger structure (Plate 2). The anchoring metal rod would have passed through the loop of this bracket, held in place by the circular 'pulley wheel' type fitting while under tension. Each end of the metal rod would then be secured below ground within the wooden block. The use of wooden foundations to hold the structure in place is likely reflective of the very rapid construction that was needed for such an installation. The lack of more substantial foundations is perhaps evidence that the need for concrete was greater elsewhere for the construction of anti-invasion defences or that wooden blocks were simply deemed fit for purpose due to the relatively lightweight aerial structure that required support.

10.1.4 It is likely these anchor points formed part of the wider supporting structure for the wireless transmitter array that occupied the Site. The aerial layout is known to have consisted of '35 dipole aerials and four 3-wire rhombics' (Gregory, 2015) which suggests a dense array of antennae over a relatively large area. Transmitter Station 53C survived the Cold War as it was turned into a Secret Intelligence Service (SIS) communications facility and it is possible that over time, the wartime aerial arrays were deliberately removed and replaced with more up to date technology. Gregory attributes the general survival of SOE wartime structures due to their continued post-war use. During this time the Second World War period transmitter array might be modified or removed but could be rapidly re-installed if necessary (Gregory, 2015). It therefore cannot be certain if the identified anchor points definitely relate to the Second World War installation or the later Cold War installation.

10.1.5 The Project Plan outlined numerous potential Second World War features that the trenches were targeted on, such as possible antenna bases or cable ducts which may have linked the antennas. The below-ground evidence was more limited than expected, there were for example no substantial concrete structures/bases identified and no below ground ducts as suggested by the Project Plan. Apart from areas of magnetic disturbance caused by the large sections of metal bar that were identified, there is little geophysical evidence to suggest that such features were present in the ground. It therefore seems highly likely that the aerial array was principally an above-ground structure, at least in terms of cables which linked the antennae to each other and the transmitter building. The success of the evaluation in relation to the geophysics results is discussed in paragraphs 10.1.9 and 10.1.10 below.

10.1.6 The two gullies identified in Trenches 22 and 29 as well as the post hole in Trench 10 did not contain any dating evidence and therefore it is not possible to ascribe them a certain period. It is unclear as to whether or not they are associated with Station 53C.

KC45: The conflicts of the 20th century define the history of modern Britain and the world: how can we achieve a greater understanding of the significance of sites associated with conflict to local communities along the route?

10.1.7 The SOE wireless transmitter station at 53C is a rare and unusual site due to its association with clandestine operations during the Second World War. The evaluation deliberately targeted possible archaeological remains associated with Station 53C in an attempt to better inform the limited understanding of the Site, beyond the surviving structures.

10.1.8 The evaluation was limited in achieving this objective in that it did not identify any substantial remains, although evidence for 20th century conflict-related activity was located within multiple trenches. This was indicated by the presence of metal rebar anchor points, some of which were attached to wooden blocks. These were interpreted as potentially part of the supporting structure for the wireless transmitter array.

10.1.9 The Site itself remained operational after the Second World War as a SIS communications facility and would have likely seen the modification or removal of wartime technology in order to replace it with more up to date equipment. It is therefore not possible to say with absolute certainty that the rebar anchor points identified relate to the Second World War use of the Site as opposed to Cold War use.

10.1.10 The identified evidence does not provide any meaningful contribution to understanding the significance of the Site to local communities.

KC47: Test and develop geophysical survey methodologies.

10.1.11 All the excavated trenches were targeted on a variety of possible features, as outlined in the Project Plan. The rebar observed in some trenches appeared to correspond with strong anomalies identified by the geophysical survey. However, where similar anomalies appeared in other trenches, they were subsequently found to be devoid of archaeological features or remains. The effectiveness of the targeted trenches on geophysical anomalies is assessed on a trench by trench basis in Table 2 below. What is clear is that the metal rebar anchor points created large anomalies which was entirely disproportionate to their physical size, due principally to the fact they were long but thin metal objects. It is very likely that they are responsible for the vast majority of the large anomalies seen on the geophysics, due to the widespread nature of the aerial array. As such, when trenches targeted these anomalies, despite being positioned within them, they often missed the physical source of those anomalies which were by comparison, quite small. Hence why some trenches revealed anchor points and others did not, despite being targeted on similar anomalies. Some of the trenches, particularly the small 4m x 4m test pits, simply did not cover a significant enough portion of the large anomalies to guarantee locating it's origin, probably missing a metal anchor point by only a metre or two. It must also be considered that not all of the metal which caused geophysical anomalies may have necessarily been secured in-situ and it is

perfectly possible that some elements had been broken through subsequent ploughing or generally discarded. That being so, it would have likely been unstratified within the topsoil and removed unnoticed by machine when the trench was opened.

10.1.12 Furthermore, some of the trenches targeted positions that were thought to potentially contain cable ducting or similar features, although there was very little geophysical evidence that such features existed. Indeed it seems very likely that the vast majority of the aerial array structures were above ground or at the very least, minimally intrusive into the natural substrate. Anecdotal evidence from local residents that wiring had been seen ploughed out from the field in recent times should be treated with caution – there is simply no way of knowing if this is related to Station 53C and can certainly not be treated as archaeological fact.

10.1.13 The geophysics showed generally good correlation in determining the presence of furrows within the Site, although typically the trenches within which furrows were identified were located in areas were furrow anomalies had not been identified. This suggests that furrows were more widespread across the Site than the geophysics suggested. It also suggests that perhaps some features are being obscured by the widespread 'noise' within the Site.

Table 2 – Assessment of correlation and effectiveness between geophysical survey and trial trench results

Trench Number	Features	Provisional Date	Targeted On (as per Project Plan)	Geophysical evidence for feature being targeted?	Correlation between targeted features and those recorded? Why?
001	Blank		Potential cable ducts linking antenna to generator/ transmitter/rhombic	No	None. Feature does not exist below ground.
002	Rebar	Second World War	Potential antenna base	Yes	Good. Anomaly caused by metal bar.
003	Rebar	Second World War	Unknown anomaly	Yes	Good. Anomaly caused by metal bar.
004	Blank		Potential cable ducts linking antennas	No	None. Feature does not exist below ground.
005	Rebar	Second World War	Potential antenna mast anchor point	Yes	Good. Anomaly caused by metal bar.
006	Blank		Potential antenna mast anchor point	Yes	Poor. Small trench may have missed target
007	Blank		Potential antenna mast bases/anchor points	Possible. Very large area of noise.	Poor. Trench may have missed target
008	Blank		Potential rhombic antenna/other structure base point	Possible. Two large areas of noise.	Poor. Trench may have missed target
009	Blank		Potential rhombic antenna/other structure base point	Yes	Poor. Small trench may have missed target
010	Post hole, tree bowl	Undated	Potential structural/antenna base point	Yes	Poor. Small trench may have missed target
011	Furrows	Medieval / post-medieval	Potential cable ducts between transmitter building and antennas	No	None. Feature does not exist below ground. Furrows present to immediate west of trench
012	Furrows	Medieval / post-medieval	Unknown geophysical anomaly and potential cable ducts between transmitter building and antennas	Partial – large anomaly consistent with metal rebar location	None. Feature does not exist below ground. Furrows noted to north of trench.

013	Furrows, rebar	Medieval / post-medieval Second World War	Potential rhombic antenna/other structure base points	Yes	Good. Anomaly caused by metal bar. Furrows noted to south of trench
014	Blank		Potential structural/antenna base point	Yes	Poor. Small trench may have missed target.
015	Blank		Potential cable ducts between transmitter buildings and antennas	No	None. Feature does not exist below ground.
016	Pit	Modern	Potential rhombic antenna/other structure base point	Yes	Poor. Trench may have missed target. One area of noise likely indicative of brick-filled pit
017	Blank		Potential rhombic antenna/other structure base point	Yes	Poor. Trench may have missed target
018	Blank		Potential rhombic antenna/other structure base point	Yes	Poor. Trench may have missed target
019	Blank		Potential rhombic antenna/other structure base point	Yes	Poor. Small trench may have missed target. Not centrally located over anomaly.
020	Blank		Potential rhombic antenna/other structure base point	Yes	Poor. Small trench may have missed target.
021	Rebar	Second World War	Potential structural/antenna base point, cable ducts between transmitter buildings and antennas, and linear anomaly	Partial. Anomaly consistent with metal bar. Linear anomaly of uncertain origin.	Partial. Anomaly caused by metal bar. Linear unidentified within trench.
022	Gully	Undated	Potential structural/antenna base point and cable ducts between transmitter building and antennas	Yes. Anomaly consistent with metal bar. Linear feature of unknown origin.	Partial. Trench may have missed target. Linear appears to be undated gully although is more central within trench. No evidence of furrows.
023	Furrows	Medieval / post-medieval	Potential antenna mast bases/anchor points	Yes	Partial. Trench may have missed target. Furrows identified to immediate east of trench.
024	Rebar	Second World War	Potential antenna mast base	Yes	Good. Anomaly caused by metal bar.
025	Blank		Potential antenna mast base	Yes	Poor. Small trench may have missed target
026	Furrows, Rebar	Medieval / post-medieval, Second World War	Potential antenna mast bases/anchor points.	Yes	Partial. Anomaly caused by metal bar, no furrows identified nearby.
027	Blank		Potential antenna mast base	Yes	Poor. Small trench may have missed target.
028	Rebar	Second World War	Potential structural/antenna base point	Yes	Good. Anomaly caused by metal bar.
029	Rebar, gully	Second World War, undated	Potential structural/antenna base points	Yes	Good. Anomaly caused by metal bar. Gully potentially related to linear anomaly
030	Rebar	Second World War	Potential structural/antenna base points	Yes	Good. Anomaly caused by metal bar.
031	Blank		Potential cable ducts between transmitter building and antennas	Possible. Linear anomaly suggested as drain rather than cable ducts	Poor. No features recorded, cable ducts do not exist below ground

032	Furrows, rebar	Medieval / Post-medieval Second World War	Cluster of geophysical anomalies likely representing a whole antenna base	Yes	Partial. Some anomalies caused by metal bar. Furrows identified to east of trench.

10.2 Recommendations

10.2.1 The Trial Trench Evaluation identified limited evidence relating to the structures and layout of Station 53C, although minor structures interpreted as possible anchor points for the transmitter array were identified. Additional fieldwork in the form of further Trial Trench Evaluation or targeted Archaeological Recording is thought only likely to produce similarly limited results and not greatly contribute to further understanding the Site. However, should any further work of this nature be undertaken, it is recommended that trenches targeting geophysical anomalies are made larger in order to stand better chance of successfully locating the source of those anomalies. The fieldwork has shown that the metal anchor points within the Site cause geophysical anomalies which are vastly disproportionate to their physical size and may be missed by very small trenches.

10.2.2 Additional fieldwork should focus on the detailed recording of the surviving transmitter building which may shed further light on the wartime activities of the Station. This should be coupled with archival research to explore any surviving documentation associated with the Site and its function/layout. Close attention should be paid to the work undertaken by Gregory (2015), in particular the detailed research associated with Transmitter Station 53B. While Station 53C was built slightly later it is nonetheless very likely to share similar characteristics in its design and overall layout with Station 53B, the plan of which is contained within the Project Plan.

10.2.3 A further technique to consider would be a systematic metal detector survey, beyond the simple scanning of topsoil and subsoil from excavated trenches, to reveal a detailed plan of the unstratified artefactual material within the Site, specifically that associated with Station 53C. If any military artefacts were to be recovered it would add small, but valuable pieces of information about the military activities within the Site and the individuals who undertook them, especially as the below ground impact of the transmitter aerials is likely to have been relatively limited. It may also assist with identifying any foci of activity within certain areas of the Site, away from the main buildings.

11 Consideration of Results in their Wider Context

11.1.1 The results of the Trial Trench Evaluation have made a limited contribution to the wider understanding of international communications and the history of the SOE during the Second World War. However there is a relative paucity of information surrounding the physical remains of sites associated with SOE activities, so even minor findings have the potential to make a more significant contribution to the limited corpus of archaeological knowledge.

11.1.2 While there has been a detailed historical study of Transmitter Station 53B (Gregory, 2015) relatively little is known of 53C and any of its associated archaeological remains. This is therefore an opportunity to further understand the development and construction of Transmitter Stations during the Second World War. As the Station was used into the Cold War, it also represents an opportunity to understand the continued use of a Second World War installation and how its form may have changed or remained consistent as requirements and technology evolved. The difficulties in confidently determining the difference between features of Second World War date and those from the Cold War, are as yet unknown.

11.1.3 Other archaeological remains within the Site which were not associated with Station 53C consisted of a small number of undated features as well as furrows from medieval or post-medieval cultivation. This indicates the Site was part of an agricultural hinterland during these periods which is further evidenced by the extant ridge and furrow earthworks in adjacent fields.

12 Scheme Impacts

12.1.1 The scheme will impact on the Site through construction of the rail alignment formation and associated earthworks and landscaping.

13 Evaluation of Methodology Used

13.1 Summary

13.1.1 The Trial Trench Evaluation has demonstrated limited archaeological activity across the Site and this information can be used to inform an appropriate mitigation strategy, if required.

13.2 Strategy Appraisal

13.2.1 The Trial Trench Evaluation comprised 32 targeted trenches across the Site. These included 15no. 30x1.8m trenches; 2no. 30x4m trenches; 1no. 60x1.8m trench; 13no. 4mx4m test pits and 1no. irregular area measuring a maximum of 54x50m.

13.2.2 Trial Trench Evaluation was the most suitable investigation methodology in that it was possible to excavate all the trenches, and within the trenches it was possible to investigate the exposed features. A sample of each feature was excavated as per the specifications of the Project Plan. However, as discussed above, some of the trenches were simply too small in relation to what they were targeting. While the geophysical anomalies were large and the trenches generally well-positioned over them, the physical remains were relatively minor and simply created large anomalies as they were comparatively large pieces of metal.

13.2.3 The soil horizons throughout the stratigraphic sequence were clear and well-defined. The Trial Trench Evaluation confirmed the presence, absence, density, date and significance of the archaeological remains present and it is very unlikely that features were not identified within the trenches. The trenching methodology is therefore judged to be a generally suitable method of evaluation in this landscape. The

correlation with the geophysical survey was limited with some anomalies corresponding with identified features and others not, as discussed in detail above.

13.2.4 An additional methodology that could have been employed within the Site is a systematic metal detector survey, beyond the simple scanning of spoil heaps. Such a technique would have covered the Site at a far greater intensity and may have yielded artefactual evidence which would have given clues as to the wartime activities within the Site and those undertaking them. This may have taken the form of military buttons, small bits of equipment and personal effects. It may have also revealed focal points of activity within the Site which, given the relatively limited below-ground impact of the transmitter aerial arrays, would have been valuable information.

14 Statement of Archaeological Potential

14.1.1 The Site has high potential to contribute to HERDS objective KC45 by actively investigating a site associated with the Second World War and Cold War. The association with SOE activities makes the Site itself more unusual in the context of Second World War archaeology and makes for a rare opportunity to examine the archaeological remains associated with secret operations. Although the results of the Trial Trench Evaluation were relatively limited, further work does have the potential to yield additional information about the structures within the Site or unstratified artefact scatters associated with wartime activity. It has made no contribution to understanding the significance of the Site to local communities as outlined in Objective KC45 – it is not altogether possible to determine what form such evidence would take archaeologically.

14.1.2 The Site has moderate potential for archaeology relating to medieval or post-medieval agriculture, with the presence of ridge and furrow, which could contribute to HERDS objective KC40 as evidence of land use during these periods.

14.1.3 The Trial Trench Evaluation also indicated a high potential to contribute to KC47 as there were anomalies present on the geophysical survey which were both identified and not identified during the course of the evaluation, despite being deliberatively targeted with trenches. Further excavation could identify factors which resulted in the variations in the accuracy of the geophysical survey results.

15 Publication and Dissemination Proposals

15.1.1 It is uncertain if further work may be undertaken on the Site. The results of the evaluation of the Site will be incorporated into the results of any further work and disseminated in accordance with the Employer policy as instructed.

15.1.2 A copy of the report will be provided to the Contractor in the first instance and then to the Employer for approval. The report will become a public document after a period not exceeding six months, a digital copy of the report will be deposited with the OASIS online archive and the Buckinghamshire Historic Environment Record. On completion

of this project an appropriate short article summarising the work will be submitted to the Local Museum Services.

16 Archive Deposition

16.1.1 All retained finds will be treated and conserved in accordance with the English Heritage guidance document A Strategy for the Care and Investigation of Finds (English Heritage, 1995) and the UKIC's document Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC, 1990). Should no further work be required, an ordered, indexed, and internally consistent site archive, including digital formats (survey, photography etc) will be prepared and deposited in accordance with Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation (Archaeological Archives Forum 2007) and the HS2 documents: Technical Standard – Historic environment physical archive procedure (HS2-HS2-EV-STD-000-000039) and the Technical Standard – Historic environment digital data management and archiving procedure (HS2-HS2-EV-STD-000-00003), as well as guidance from CIfA (2014b) and SMA (1993). A summary of information from the project has been entered onto the OASIS online database of archaeological projects in Britain as per ADS guidelines (2015).

17 Acknowledgements

17.1.1 The Archaeological Contractor acknowledges the contributions made by all its staff and the help and advice provided by the Contractor's HERDS team, and the Employer for commissioning the project.

18 Bibliography

Title	Reference
AAF 2007. Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation	Archaeological Archives Forum guidance
ADS 2015. Guidelines for Depositors	Archaeological Data Service guidance
British Geological Survey. (Natural Environment Research Council) Commissioned Report CR/03/77N	Geology
CIfA 2014a Standard and guidance for archaeological field evaluation. Chartered Institute for Archaeologists	Chartered Institute for Archaeologists guidance
CIfA, 2014b. Standard and guidance for the collection, documentation, conservation and research of archaeological materials.	Chartered Institute for Archaeologists guidance
English Heritage 1991. The Management of Archaeological Projects 2.	Historic England guidance
English Heritage 1995. A Strategy for the Care and Investigation of Finds.	Historic England guidance
Gregory, D (2015) *Built to Resist. An Assessment of the Special Operations Executive's Infrastructure in the United Kingdom during the Second World War 1940-1946*.	Unpublished PhD Thesis: University of East Anglia
Historic England, 2015. Management of Research Projects in the Historic Environment (MORPHE): Project Managers Guide	Historic England guidance
HS2, Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy	HS2-HS2-EV-STR-000-000015
HS2, Location Specific Written Scheme of Investigation for Archaeological Trial Trenching at Station 53C, Portway Farm, Buckinghamshire (AC250)	1EW03-FUS-EV-REP-CS06_CL09-000001
HS2, Phase One Environmental Statement, Supplementary Environmental Statements, Trial Trench Evaluation and Geophysical Survey Reports	ES 3.5.2.13.7 ES 3.5.2.13.4-7 1EW03-FUS-EV-REP-CS06_CL09-000001 C252-ETM-EV-REP-020-000263_P02

	1EW03-FUS-EV-REP-CS06_CL09-007287
HS2, Project Plan for Station 53C, Portway Farm, Buckinghamshire	1EW03-FUS-EV-REP-CS05-007829
HS2, Project Plan for Historic Building Recording, Station 53C, Portway Farm, Buckinghamshire	1EW03-FUS-EV-REP-CS06_CL09-007810
HS2, Historic Environment Fieldwork Change Control Acceptance Sheet for Trial Trench Evaluation at Portway Farm, Buckinghamshire	1EW03-FUS-EV-FRM-CS05-000047
HS2, Technical Standard: Specification for historic environment investigations.	HS2-HS2-EV-STD-000-000035
HS2, Technical Standard: Route wide soil resource plan	HS2-HS2-EV-STD-000-000008
HS2, Technical Standard: Historic environment physical archive procedure	HS2-HS2-EV-STD-000-000039
HS2, Technical Standard: Historic environment digital data management and archiving procedure	HS2-HS2-EV-STD-000-00003
SMA 1993. Selection, retention and dispersal of archaeological collections.	
UKIC 1990. Guidelines for the Preparation of Excavation Archives for Long Term Storage	United Kingdom Institute for Conservation guidance

19 Glossary of Terms and Acronyms

The following terms have been used in this report:

Terms

Evaluation	A form of archaeological investigation involving the excavation of trenches to help determine the character and date of any discovered archaeology
The Contractor	The organisation undertaking the Enabling Works for Area Central on behalf of the Employer.
Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (GWSI: HERDS)	The framework for delivering all historic environment investigations undertaken as part of the HS2 Phase 1 programme.

The Employer	The organisation responsible for delivery of HS2 Phase One Scheme and all terms and conditions, policies, procedures, and payments
Location	A specific HS2 worksite or group of worksites that are being addressed as a combined historic environment investigation programme of assessment, evaluation and investigation.
Location Specific Written Scheme of Investigation (LSWSI)	Specification document assembling one or more Project Plans within an area of land defined primarily for construction programme purposes.
Project Plan	Specification document for each specific package of activity (e.g. a survey, desk-based assessment, excavation, recoding project). The plans would respond to the Specific Objectives set out in the GWSI: HERDS and be delivered within an agreed budget.
Works	The specific historic environment assessment, evaluation or investigation works at each

Acronyms

AAF	Archaeological Archives Forum
ACA	Archaeological Character Area
aOD	above Ordnance Datum
AD	Anno Domini
ANA	Archaeological Notification Area
ASZ	Archaeological Character Sub-Zone
BC	Before Christ
BHER	Buckinghamshire Historic Environment Record
CAT	Cable Avoidance Tool
CFA	Community Forum Area
CIfA	Chartered Institute of Archaeologists

CoCP	Code of Construction Practice
DMV	Deserted Medieval Village
EMR	Environmental Minimum Requirements
ES	Environmental Statement
GIS	Geographic Information Systems
GNSS	Global Navigation Satellite System
Ha	Hectare
HE	Historic Environment
HER	Historic Environment Record
HERDS	Historic Environment Research and Delivery Strategy
ID	Identification
JV	Joint Venture
Km	Kilometre
LiDAR	Light Detection and Ranging
M	Metre
Mm	Millimetre
MORPHE	Management of Research Projects in the Historic Environment
Mya	Million Years Ago
NGR	National Grid Reference
No.	Number
OASIS	Online Access to the Index of Archaeological Investigations
OD	Ordnance Datum

ODN	Ordnance Survey Newlyn Datum
OS	Ordnance Survey
OSS	American Office of Strategic Services
OSGB	Ordnance Survey Great Britain
PROW	Public Right of Way
SOE	Special Operations Executive
UKIC	United Kingdom Institute for Conservation

Appendix 1 – Figures

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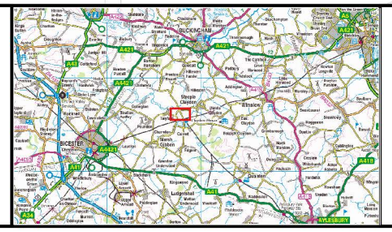
226 000 N

Legend

Site extent



High Speed Two, Portway

Figure 1. Site location

Published

HS2

Scale at A3: 1:5000

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Revision Number: C01

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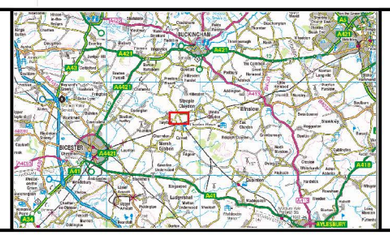
Legend

Site extent

Excavated evaluation trench



High Speed Two,
Portway

Figure 2. Overview of excavated evaluation trenches

Published

HS2

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Revision Number: C01

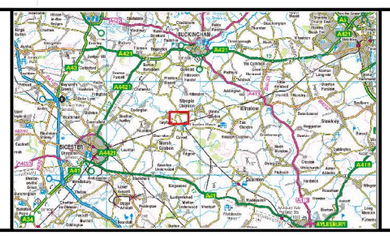
Doc Number:1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 07/12/20

468 000 E

226 000 N

Legend

- Site extent
- Excavated evaluation trench
- Location of undated feature



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Portway

Figure 3. Location of undated archaeological features

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Metres

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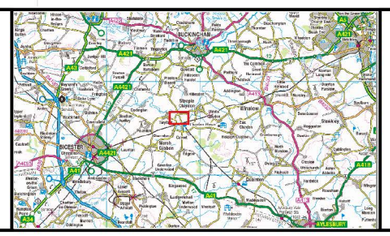
Legend

- Site extent
- Excavated evaluation trench
- Location of Medieval/Post-medieval feature



High Speed Two,
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Figure 4.Location of Medieval/ Post-medieval archaeological features

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Doc Number:1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 07/12/20

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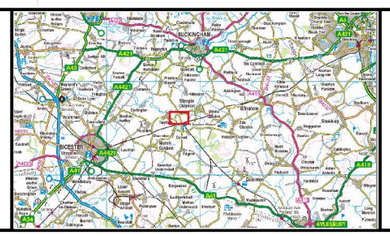
Legend

- Site extent
- Excavated evaluation trench
- Location of modern feature



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Portway

Figure 5. Location of modern archaeological feature

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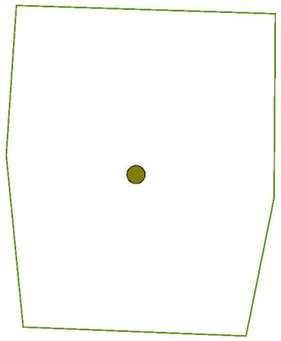

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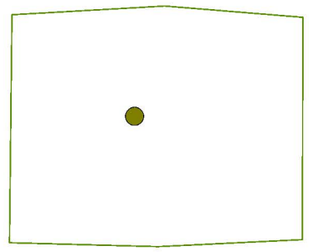

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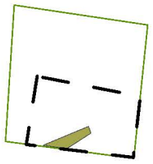

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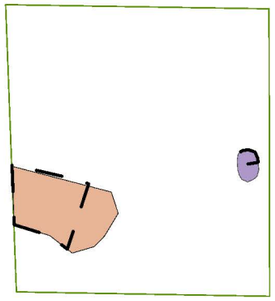

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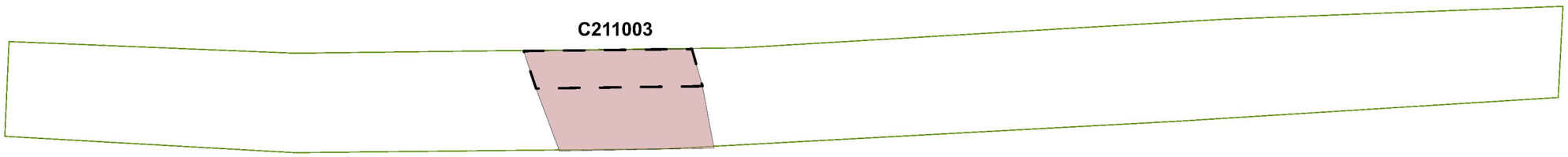

C211003

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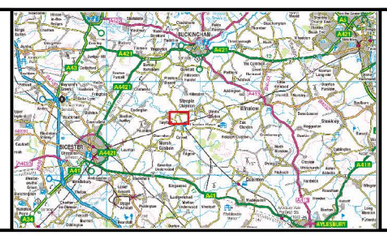
Legend

- Excavated evaluation trench
- Undated archaeological feature
- Natural feature
- Medieval/Post-medieval archaeological feature
- Modern archaeological feature
- Location of rebar



High Speed Two,
Portway

Figure 6. Details of trenches 2, 3, 5, 10 and 11

Published

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Metres

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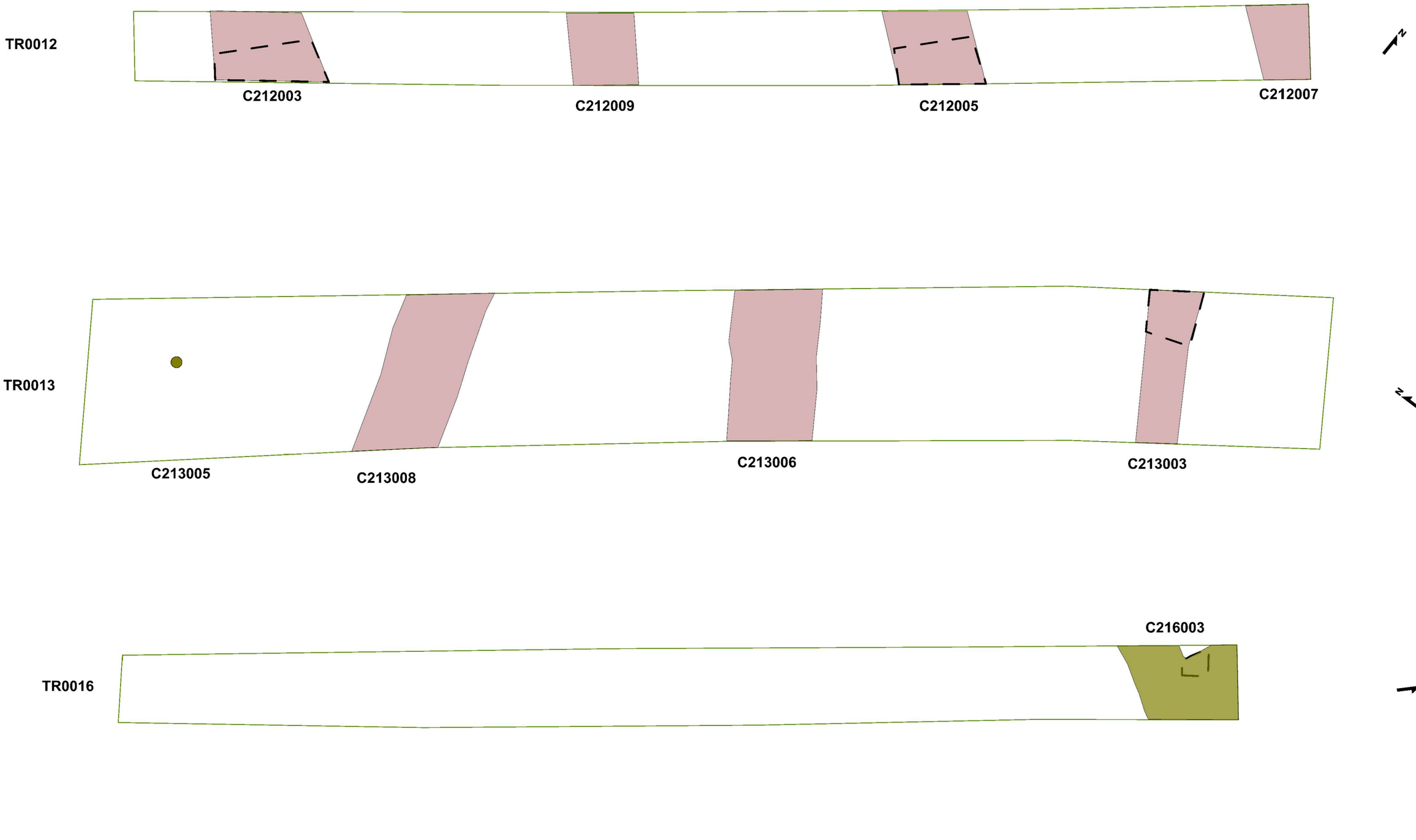
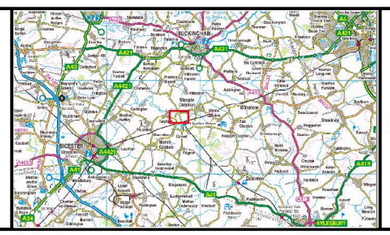


Legend

- Excavated archaeological trench
- Excavated area
- Medieval/Post-medieval archaeological feature
- Modern archaeological feature
- Location of rebar



High Speed Two,
Portway

Figure 7. Details of trenches 12, 13 and 16

Published

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TR0021

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TR0022

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TR0023

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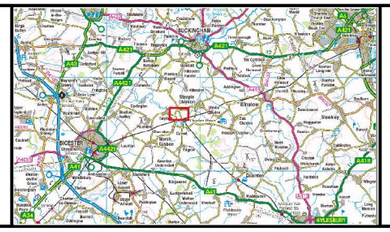
Legend

- Excavated archaeological trench
- Excavated area
- Undated archaeological feature
- Medieval/Post-medieval archaeological feature
- Modern archaeological feature



High Speed Two,
Portway

Figure 8. Details of trenches 21, 22 and 23

Published

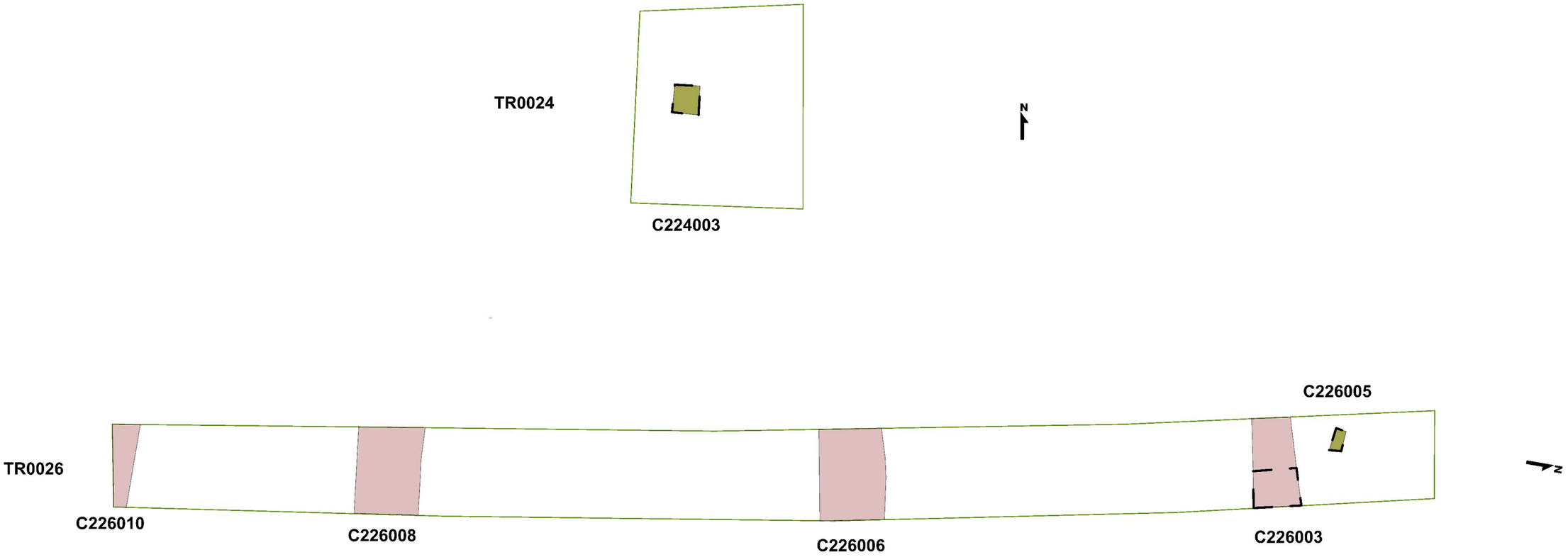
HS2

Scale at A3: 1:100

0 1 2 3 4
Metres

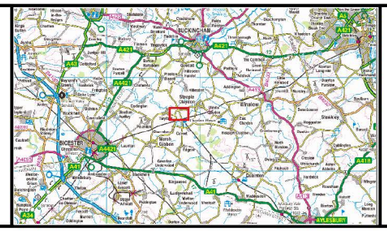
Revision Number: C01

Doc Number:1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 07/12/20



Legend

- Excavated archaeological trench
- Excavated area
- Medieval/Post-medieval archaeological feature
- Modern archaeological feature



High Speed Two,
Portway

Figure 9. Details of trenches 24, 26 and 28

Published

HS2

Scale at A3: 1:100

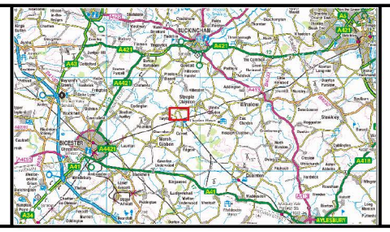
0 1 2 3 4 Metres

Revision Number: C01

Doc Number:1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 07/12/20

Legend

- Excavated archaeological trench
- Excavated area
- Undated archaeological feature
- Location of rebar



High Speed Two,
Portway

Figure 10. Details of trenches 29 and 30

Published

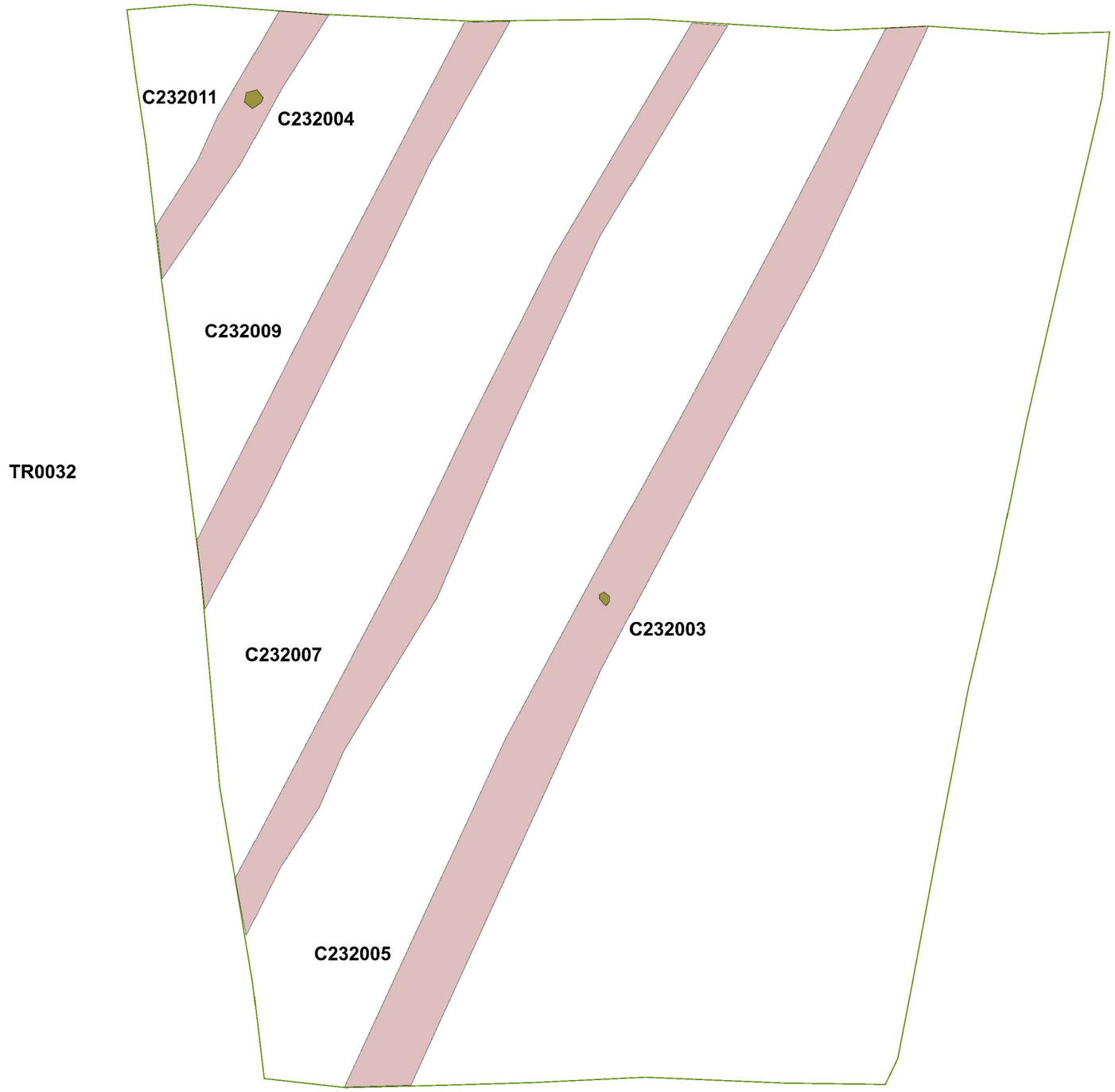
HS2

Scale at A3: 1:100

0 1 2 3 4
Metres

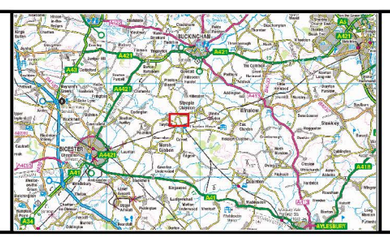
Revision Number: C01

Doc Number:1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 07/12/20



Legend

- Excavated archaeological trench
- Excavated area
- Medieval/Post-medieval archaeological feature
- Modern archaeological feature



High Speed Two,
Portway

Figure 11. Details of trench 32

Published

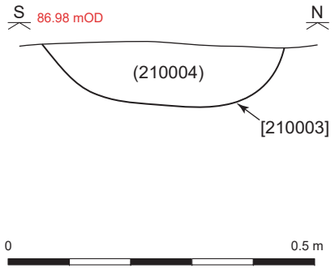
HS2

Scale at A3: 1:100

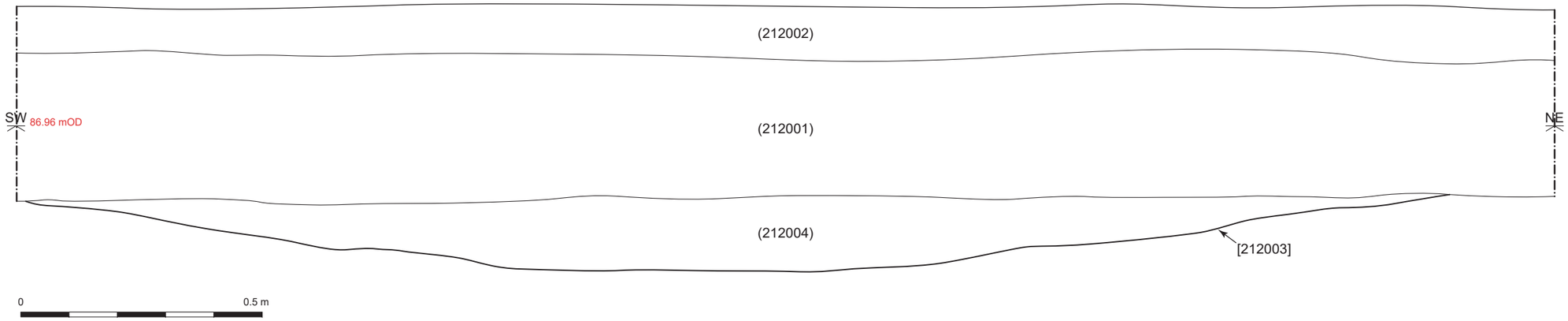
0 1 2 3 4
Metres

Revision Number: C01

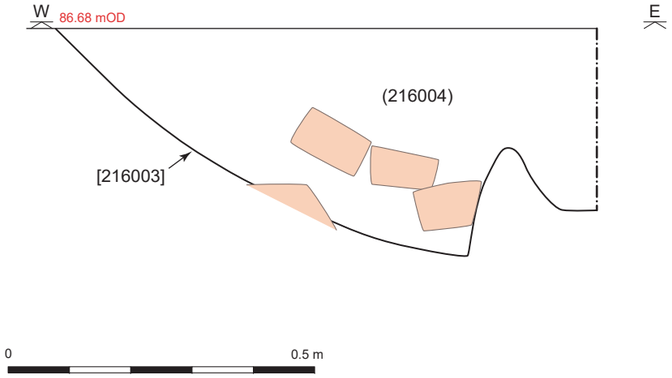
Doc Number:1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 07/12/20



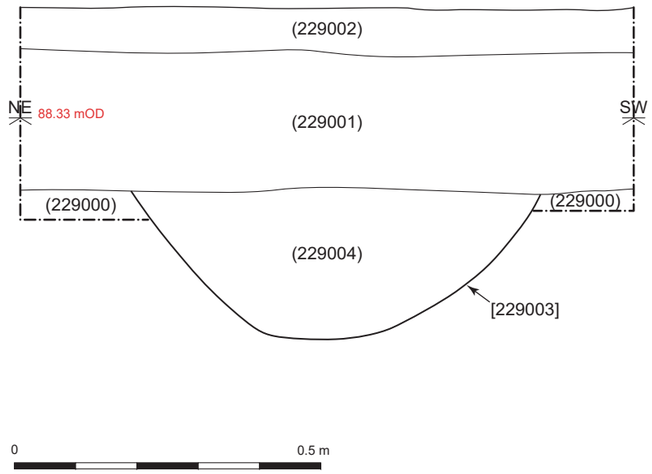
East facing section of post hole [210003]



South-east facing section of furrow [212003]



South facing section of pit [216003]



North-west facing section of gully [229003]

Legend

Brick

High Speed Two
Portway Farm
Figure 12 - Feature sections

Published

HS2

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

0 0.1 0.2 0.3 0.4 0.5
(meters)

Doc Number: 1EW03-FUS_IFA-GI-MAP-CS06_CL09-000003 **Date:** 20/11/20

Appendix 2 – Plates

Plate 1 - Second World War aerial array anchor point under investigation

Plate 2 - Recovered example of metal anchor point

Plate 3 - Working shot, Trench 32

Plate 4 - Second World War anchor point *in situ*, Trench 5

Appendix 3 - Context Register

Table 3 Summary of contexts by Trench

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
1	201000	Layer	-	-	>30	>1.8	0-0.15	Dark brown silty clay	Topsoil
1	201001	Layer	-	-	>30	>1.8	0.15-0.34	Mid orange brown silty clay	Subsoil
1	201002	Layer	-	-	>30	>1.8	0.34+	Mid orange grey clay	Natural
2	202000	Layer	-	-	>4	>4	0-0.15	Dark brown silty clay	Topsoil
2	202001	Layer	-	-	>4	>4	0.15-0.3	Mid orange brown silty clay	Subsoil
2	202002	Layer	-	-	>4	>4	0.3-0.45+	Mid orange grey clay	Natural
2	202003	Structure	-	-	-	-	-	Metal rebar	Second World War
3	203000	Layer	-	-	>4	>4	0.46+	Mid orange grey clay	Natural
3	203001	Layer	-	-	>4	>4	0.18-0.46	Mid grey brown silty clay with orange mottling	Subsoil
3	203002	Layer	-	-	>4	>4	0-0.18	Dark brown silty clay	Topsoil
3	203003	Structure	-	-	-	-	-	Metal rebar	Second World War
4	204000	Layer	-	-	>30	>1.8	0-0.16	Dark brown silty clay	Topsoil
4	204001	Layer	-	-	>30	>1.8	0.16-0.34	Dark orange brown silty clay	Subsoil
4	204002	Layer	-	-	>30	>1.8	0.34-0.42+	Mottled light orange clay	Natural
5	205000	Layer	-	-	>4	>4	0.36-0.45+	Light orange grey clay	Natural
5	205001	Layer	-	-	>4	>4	0.18-0.36	Mid orange brown silty clay	Subsoil
5	205002	Layer	-	-	>4	>4	0-0.18	Dark brown silty clay	Topsoil
5	205003	Cut	-	205004, 205005	-	-	-	Cut for anchor point	Second World War
5	205004	Structure	205003	-	-	-	-	Metal rebar and wood	Second World War
5	205005	Fill	205003	-	-	-	-	Light orange grey clay redeposited natural	Second World War
6	206000	Layer	-	-	>4	>4	0-0.15	Dark brown silty clay	Topsoil
6	206001	Layer	-	-	>4	>4	0.15-0.38	Dark orange brown silty clay	Subsoil
6	206002	Layer	-	-	>4	>4	0.38-0.52+	Light orange and grey clay	Natural

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
7	207000	Layer	-	-	>61	>1.8	0-0.16	Dark brown silty clay	Natural
7	207001	Layer	-	-	> 61	>1.8	0.16-0.35	Dark orange brown silty clay	Subsoil
7	207002	Layer	-	-	>61	>1.8	0.35-0.37+	Light orange grey clay	Natural
8	208000	Layer	-	-	>30	>1.8	0.34-0.38+	Mid orange brown sandy clay	Natural
8	208001	Layer	-	-	>30	>1.8	0.17-0.34	Mid brown grey silty sand	Subsoil
8	208002	Layer	-	-	>30	>1.8	0-0.17	Mid grey brown silty sand	Topsoil
9	209000	Layer	-	-	>4	>4	0.32-0.34+	Mid orange brown silty clay	Natural
9	209001	Layer	-	-	>4	>4	0.15-0.32	Mid grey brown silty sand	Subsoil
9	209002	Layer	-	-	>4	>4	0-0.15	Mid brown grey silty sand	Topsoil
10	210000	Layer	-	-	>4	>4	0.27+	Mid orange brown sandy clay	Natural
10	210001	Layer	-	-	>4	>4	0.08-0.27	Mid grey brown silty sand	Subsoil
10	210002	Layer	-	-	>4	>4	0-0.08	Mid brown grey silty sand	Topsoil
10	210003	Cut	-	210004	-	0.39	0.1	Circular in plan with gently sloping concave sides and base	Undated post hole
10	210004	Fill	210003	-	-	0.39	0.1	Mid grey brown silty clay with occasional charcoal	Tertiary fill
10	210005	Cut	-	210006	1.2	1	0.08	Irregular in plan with irregular sides and base	Tree bowl
10	210006	Fill	210005	-	1.2	1	0.08	Mid grey brown silty sand	Tree bowl fill
11	211000	Layer	-	-	>30	>1.8	0.32-0.35+	Mottled light orange brown and grey clay	Natural
11	211001	Layer	-	-	>30	>1.8	0.16-0.32	Mid orange brown silty clay	Subsoil
11	211002	Layer	-	-	>30	>1.8	0-0.16	Dark brown silty loam	Topsoil
11	211003	Cut	-	211004	>2	3.05	0.19	Linear in plan with gently sloping concave sides	Furrow
11	211004	Fill	211003	-	>2	3.05	0.19	Mid orange grey silty clay	Furrow fill
12	212000	Layer	-	-	>30	>1.8	0.3-0.35+	Mid orange brown silty sand and gravel	Natural
12	212001	Layer	-	-	>30	>1.8	0.15-0.3	Mid grey brown silty sand	Subsoil
12	212002	Layer	-	-	>30	>1.8	0-0.15	Mid brown grey silty sand	Topsoil
12	212003	Cut	-	212004	>2.35	2	0.13	Linear in plan with gently sloping sides and concave base	Furrow

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
12	212004	Fill	212003	-	>2.35	2	0.13	Mid orange grey silty clay	Furrow fill
12	212005	Cut	-	212006	>2	2	0.15	Linear in plan with gently sloping concave sides and base	Furrow
12	212006	Fill	212005	-	>2	2	0.15	Mid grey brown silty sand	Furrow fill
12	212007	Cut	-	212008	>2	2	-	Linear in plan. Unexcavated	Furrow
12	212008	Fill	212007	-	>2	2	-	Mid grey brown silty sand. Unexcavated	Furrow fill
12	212009	Cut	-	212010	>2	>1	-	Linear in plan. Unexcavated	Furrow
12	212010	Fill	212009	-	>2	>1	-	Mid grey brown silty sand. Unexcavated	Furrow fill
13	213000	Layer	-	-	>30	>4	0.32-0.36+	Mid orange brown sandy clay	Natural
13	213001	Layer	-	-	>30	>4	0.17-0.32	Mid grey brown silty sand	Subsoil
13	213002	Layer	-	-	>30	>4	0-0.17	Mid brown grey silty sand	Topsoil
13	213003	Cut	-	213004	>2.2	1.9	0.15	Linear in plan with gently sloping concave sides and base	Furrow
13	213004	Fill	213003	-	>2.2	1.9	0.15	Mid grey brown silty sand	Furrow fill
13	213005	Structure	-	-	-	-	-	Metal rebar	Second World War
13	213006	Cut	-	213007	>2.2	1.8	-	Linear in plan. Unexcavated	Furrow
13	213007	Fill	213006	-	>2.2	1.8	-	Mid grey brown silty sand. Unexcavated	Furrow fill
13	213008	Cut	-	213009	>2.2	1.9	-	Linear in plan. Unexcavated	Furrow
13	213009	Fill	213008	-	>2.2	1.9	-	Mid grey brown silty sand. Unexcavated	Furrow fill
14	214000	Layer	-	-	>4	>4	0.36-0.38+	Mid orange brown sandy clay	Natural
14	214001	Layer	-	-	>4	>4	0.17-0.36	Mid grey brown silty sand	Subsoil
14	214002	Layer	-	-	>4	>4	0-0.17	Mid brown grey silty sand	Topsoil
15	215000	Layer	-	-	>30	>1.8	0.35+	Mid orange brown silty sand	Natural
15	215001	Layer	-	-	>30	>1.8	0.2-0.35	Mid grey brown silty sand	Subsoil
15	215002	Layer	-	-	>30	>1.8	0-0.2	Mid brown grey silty sand	Topsoil
16	216000	Layer	-	-	>30	>1.8	0.4+	Mid orange brown silty sand	Natural
16	216001	Layer	-	-	>30	>1.8	0.1-0.4	Mid grey brown silty sand	Subsoil
16	216002	Layer	-	-	>30	>1.8	0-0.1	Mid brown grey silty sand	Topsoil

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
16	216003	Cut	-	216004	>2.8	>1.8	0.35	Irregular in plan with steep sides and flat base	Modern pit
16	216004	Fill	216004	-	>2.8	>1.8	0.35	Mid orange brown silty clay with bricks and concrete	Deliberate dump
17	217000	Layer	-	-	>30	>4	0.4+	Mottled mid orange brown silty clay	Natural
17	217001	Layer	-	-	>30	>4	0.15-04	Dark grey brown silty clay	Subsoil
17	217002	Layer	-	-	>30	>4	0-0.15	Dark brown silty clay	Topsoil
18	218000	Layer	-	-	>30	>1.8	0.4+	Mottled mid orange brown silty clay	Natural
18	218001	Layer	-	-	>30	>1.8	0.15-0.4	Dark grey brown silty clay	Subsoil
18	218002	Layer	-	-	>30	>1.8	0-0.15	Dark brown silty clay	Topsoil
19	219000	Layer	-	-	>4	>4	0.4+	Mid orange brown sandy clay	Natural
19	219001	Layer	-	-	>4	>4	0.1-0.4	Mid grey brown silty sand	Subsoil
19	219002	Layer	-	-	>4	>4	0-0.1	Mid brown grey silty sand	Topsoil
20	220000	Layer	-	-	>30	>1.8	0-0.1	Mid grey brown silty sand	Topsoil
20	220001	Layer	-	-	>30	>1.8	0.1-0.3	Mid brown grey silty sand	Subsoil
20	220002	Layer	-	-	>30	>1.8	0.3+	Mid orange brown sandy clay	Natural
21	221000	Layer	-	-	>30	>1.8	0.4+	Orange grey silty clay	Natural
21	221001	Layer	-	-	>30	>1.8	0.1-0.4	Dark grey brown silty clay	Subsoil
21	221002	Layer	-	-	>30	>1.8	0-0.1	Dark brown clayey silt	Topsoil
21	221003	Cut	-	221004, 221005	0.6	0.2	-	Cut for anchor point	Second World War
21	221004	Structure	221003	-	0.6	0.2	0.1	Metal rebar and wooden plank	Second World War
21	221005	Fill	221003	-	0.6	0.2	-	Mid orange brown sandy clay redeposited natural	Second World War
22	222000	Layer	-	-	>30	>1.8	0.43+	Light orange brown silty clay	Natural
22	222001	Layer	-	-	>30	>1.8	0.15-0.43	Dark orange grey silty clay	Subsoil
22	222002	Layer	-	-	>30	>1.8	0-0.15	Dark brown silty clay	Topsoil
22	222003	Cut	-	222004	>1.8	0.5	0.15	Linear in plan with moderately sloping sides and irregular base	Undated gully

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
22	222004	Fill	222003	-	>1.8	0.5	0.15	Mid grey brown silty clay	Secondary fill
23	223000	Layer	-	-	>30	>1.8	0.3+	Mid orange brown sandy clay and gravel	Natural
23	223001	Layer	-	-	>30	>1.8	0.1-0.3	Mid grey brown silty sand	Subsoil
23	223002	Layer	-	-	>30	>1.8	0-0.1	Mid brown grey silty sand	Topsoil
23	223003	Cut	-	223004	>1.8	1.3	0.17	Linear in plan with gently sloping sides and concave base	Furrow
23	223004	Fill	223003	-	>1.8	1.3	0.17	Mid grey brown silty sand	Furrow fill
24	224000	Layer	-	-	>4	>4	0-0.16	Mid brown grey silty sand	Topsoil
24	224001	Layer	-	-	>4	>4	0.16-0.33	Mid grey brown silty sand	Subsoil
24	224002	Layer	-	-	>4	>4	0.33-0.35+	Mid orange brown sandy clay and gravel	Natural
24	224003	Structure	-	-	-	-	-	Metal rebar	Second World War
25	225000	Layer	-	-	>4	>4	0-0.14	Mid brown grey silty clay	Topsoil
25	225001	Layer	-	-	>4	>4	0.14-0.3	Mid grey brown silty sand	Subsoil
25	225002	Layer	-	-	>4	>4	0.3-0.35+	Mid orange brown sandy clay and gravel	Natural
26	226000	Layer	-	-	>30	>1.8	0.35+	Mid orange brown silty clay	Natural
26	226001	Layer	-	-	>30	>1.8	0.15-0.35	Mid grey brown silty sand	Subsoil
26	226002	Layer	-	-	>30	>1.8	0-0.15	Mid brown grey silty sand	Topsoil
26	226003	Cut	-	226004	>2	1.5	0.17	Linear in plan with gently sloping sides and concave base	Furrow
26	226004	Fill	226003	-	>2	1.5	0.17	Mid grey brown silty sand	Furrow fill
26	226005	Structure	-	-	-	-	-	Metal rebar	Second World War
26	226006	Cut	-	226007	>2	1.5	-	Linear in plan. Unexcavated	Furrow
26	226007	Fill	226006	-	>2	1.5	-	Mid grey brown silty sand. Unexcavated	Furrow fill
26	226008	Cut	-	226009	>2	1.5	-	Linear in plan. Unexcavated	Furrow
26	226009	Fill	226008	-	>2	1.5	-	Mid grey brown silty sand. Unexcavated	Furrow fill

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
26	226010	Cut	-	226011	>2	>1	-	Linear in plan. Unexcavated	Furrow
26	226011	Fill	226010	-	>2	>1	-	Mid grey brown silty sand. Unexcavated	Furrow fill
27	227000	Layer	-	-	>5	>4	0-0.18	Mid brown grey silty sand	Topsoil
27	227001	Layer	-	-	>5	>4	0.18-0.3	Mid grey brown silty sand	Subsoil
27	227002	Layer	-	-	>5	>4	0.3-0.35+	Mid orange brown silty clay	Natural
28	228000	Layer	-	-	>4	>4	0.35-0.38+	Mid orange brown sandy clay	Natural
28	228001	Layer	-	-	>4	>4	0.15-0.35	Mid grey brown silty sand	Subsoil
28	228002	Layer	-	-	>4	>4	0-0.15	Mid brown grey silty sand	Topsoil
28	228003	Structure	-	-	-	-	-	Metal rebar	World War Two
29	229000	Layer	-	-	>30	>1.8	0-0.2	Mid brown grey silty sand	Topsoil
29	229001	Layer	-	-	>30	>1.8	0.2-0.4	Mid grey brown silty sand	Subsoil
29	229002	Layer	-	-	>30	>1.8	0.4+	Mid orange brown sandy clay	Natural
29	229003	Cut	-	229004	>2	0.65	0.24	Linear in plan with steeply sloping sides and slight concave base	Undated gully
29	229004	Fill	229005	-	>2	0.65	0.24	Mid grey brown silty clay	Secondary fill
29	229005	Structure	-	-	-	-	-	Metal rebar	Second World War
30	230000	Layer	-	-	>30	>1.8	0.38+	Mid orange brown sandy clay	Natural
30	230001	Layer	-	-	>30	>1.8	0.2-0.38	Mid grey brown silty sand	Subsoil
30	230002	Layer	-	-	>30	>1.8	0-0.2	Mid brown grey silty sand	Topsoil
30	230003	Structure	-	-	-	-	-	Metal rebar	Second World War
31	231000	Layer	-	-	>30	>1.8	0.4+	Mid orange brown sandy silt	Natural
31	231001	Layer	-	-	>30	>1.8	0.1-0.4	Mid grey brown silty sand	Subsoil
31	231002	Layer	-	-	>30	>1.8	0-0.1	Mid brown grey silty sand	Topsoil
32	232000	Layer	-	-	>55	>50	0-0.15	Mid brown grey silty sand	Topsoil
32	232001	Layer	-	-	>55	>50	0.15-0.28	Mid grey brown silty sand	Subsoil
32	232002	Layer	-	-	>55	>50	0.28-0.34+	Mid orange brown sandy silt	Natural
32	232003	Structure	-	-	-	-	-	Metal rebar	Second World War

Trench	Context No.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
32	232004	Structure	-	-	-	-	-	Metal rebar	Second World War
32	232005	Cut	-	232006	>55	2	-	Linear in plan. Unexcavated	Furrow
32	232006	Fill	232005	-	>55	2	-	Mid grey brown silty sand. Unexcavated	Furrow fill
32	232007	Cut	-	232008	>50	2	-	Linear in plan. Unexcavated	Furrow
32	232008	Fill	232007	-	>50	2	-	Mid grey brown silty sand. Unexcavated	Furrow fill
32	232009	Cut	-	232010	>25	2	-	Linear in plan. Unexcavated	Furrow
32	232010	Fill	232009	-	>25	2	-	Mid grey brown silty sand. Unexcavated	Furrow fill
32	232011	Cut	-	232012	>8	2	-	Linear in plan. Unexcavated	Furrow
32	232012	Fill	232011	-	>8	2	-	Mid grey brown silty sand	Furrow fill

Appendix 4 – Oasis Form

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: hs2infra1-408727

Project details

Project name	Station 53C, Portway Farm, Buckinghamshire
Short description of the project	The Trial Trench Evaluation consisted of 32 excavated trenches, comprising 15no. 30x1.8m trenches; 2no. 30x4m trenches; 1no. 60x1.8m trench; 13no. 4mx4m test pits and 1no. irregular area measuring a maximum of 54x50m. to target potential archaeological remains associated with a Second World War wireless transmitter station within the Site. Station 53C was the most technologically advanced of the Special Operations Executive's (SOE) wireless transmitters, constructed in 1944 to handle transmitted communications to the Scandinavian theatre of operations. 17 trenches revealed archaeological features, including furrows from medieval cultivation, Second World War activity associated with Station 53C, two undated gullies and an undated post hole.
Project dates	Start: 29-09-2020 End: 27-10-2020
Previous/future work	Yes / Not known
Any associated project reference codes	1C19PWFTT - Sitecode
Type of project	Field evaluation
Monument type	TRANSMITTER STATION Modern
Monument type	GULLY Uncertain
Significant Finds	N/A None
Methods & techniques	"Targeted Trenches"
Development type	Rail links/railway-related infrastructure (including Channel Tunnel)
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	BUCKINGHAMSHIRE AYLESBURY VALE STEEPLE CLAYDON Station 53C, Portway Farm, Buckinghamshire
Study area	16.18 Hectares
Site coordinates	SP 467700 226170 51.899695262558 -1.320172630862 51 53 58 N 001 19 12 W Point

Project creators

Name of Organisation	INFRA
Project brief originator	Fusion
Project design originator	INFRA
Project director/manager	David Bonner
Project supervisor	Louis Stafford

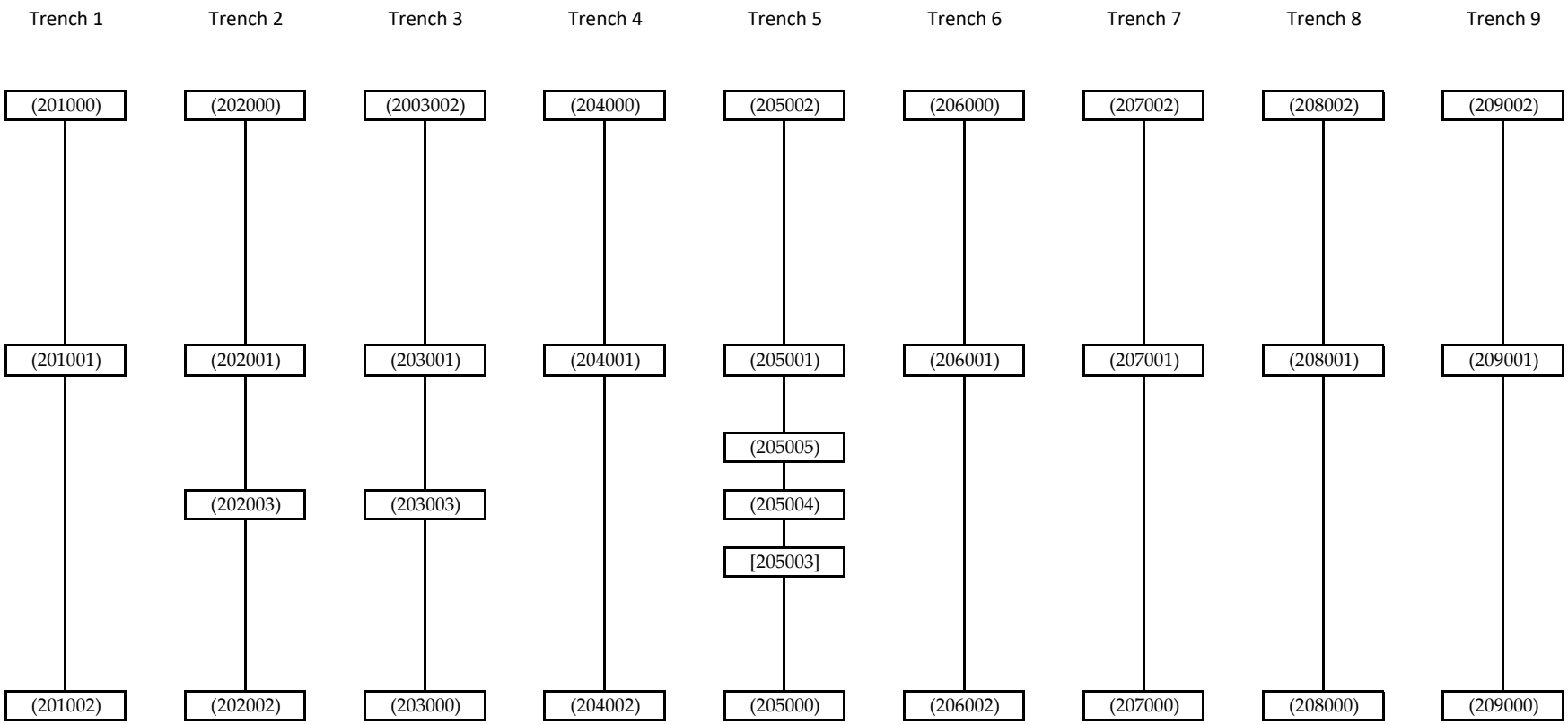
Project bibliography 1

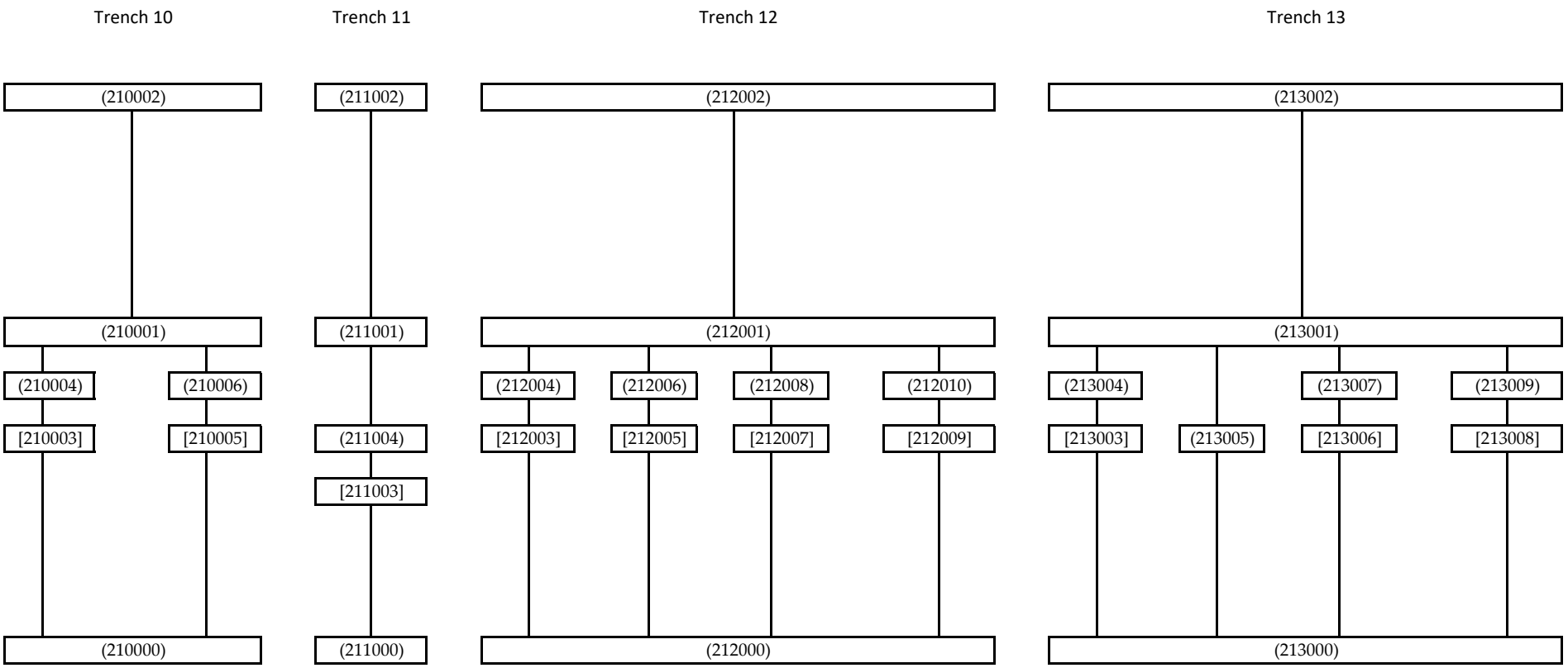
Publication type	Grey literature (unpublished document/manuscript)
Title	1EW03 - Enabling Works Central AWH Fieldwork Report for Trial Trench Evaluation at Station 53C, Portway Farm, Buckinghamshire (AC250). 1C19PWFTT
Author(s)/Editor(s)	Wilson, S.
Date	2020
Issuer or publisher	INFRA
Place of issue or publication	Cardiff

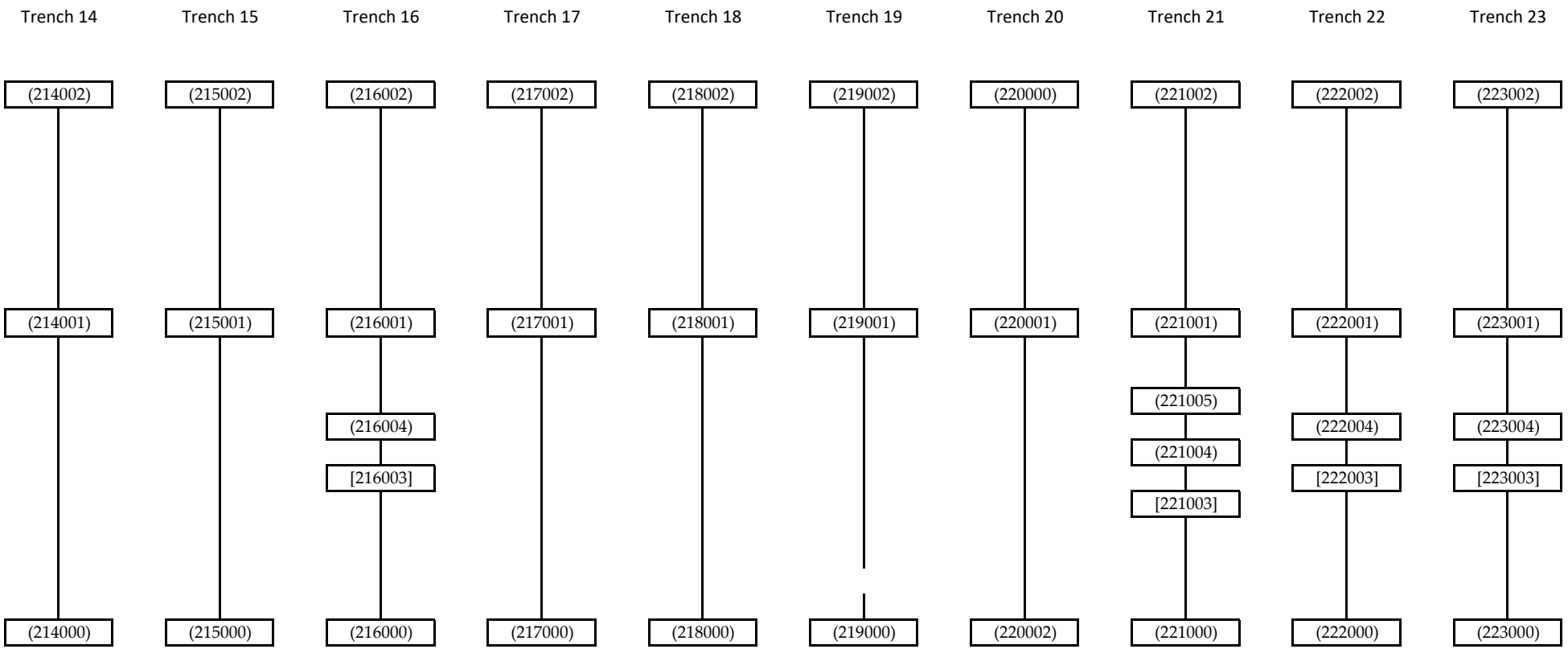
Entered by	Sam Wilson (sam@rrarc.co.uk)
Entered on	24 November 2020

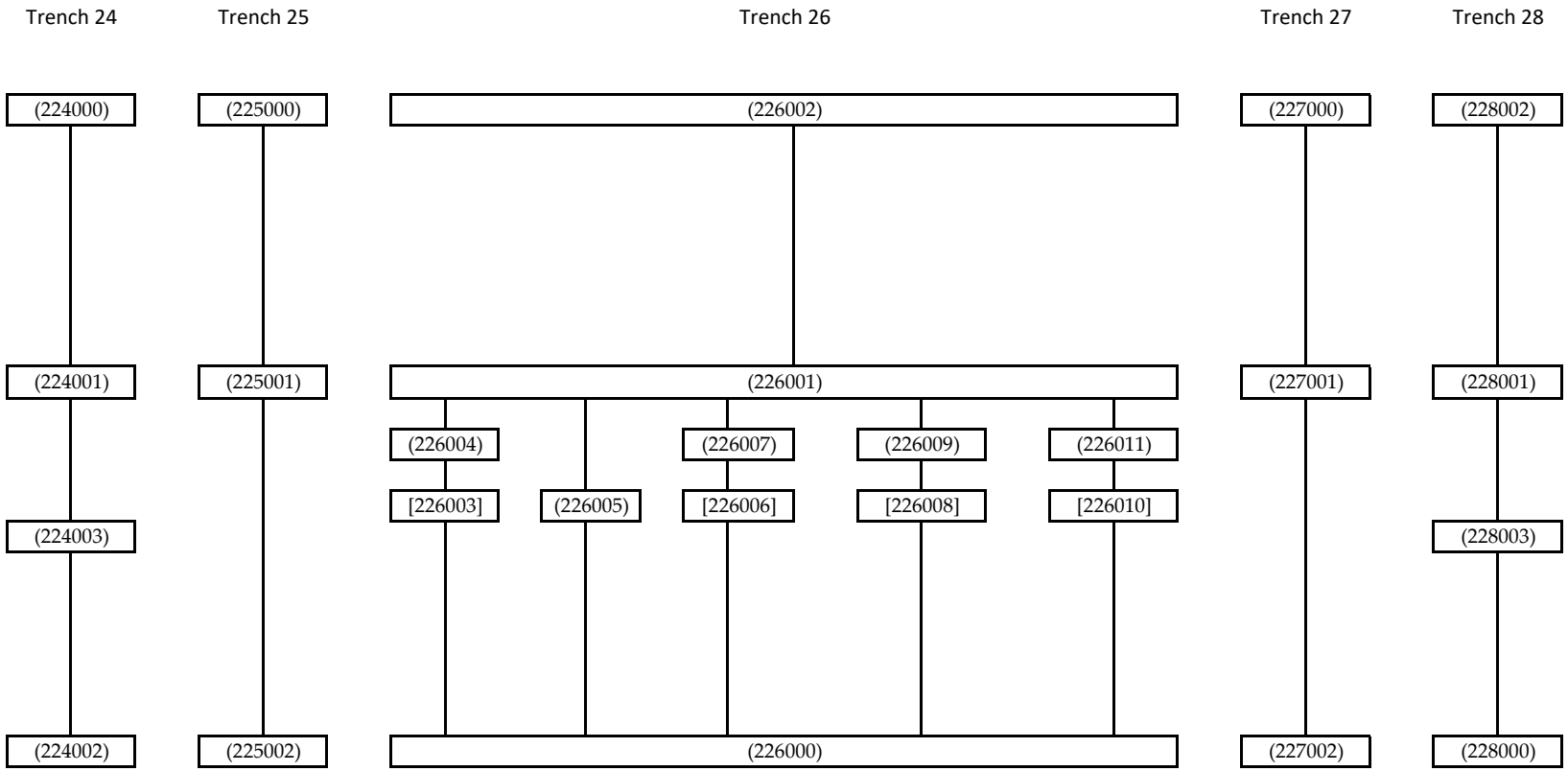
OASIS:

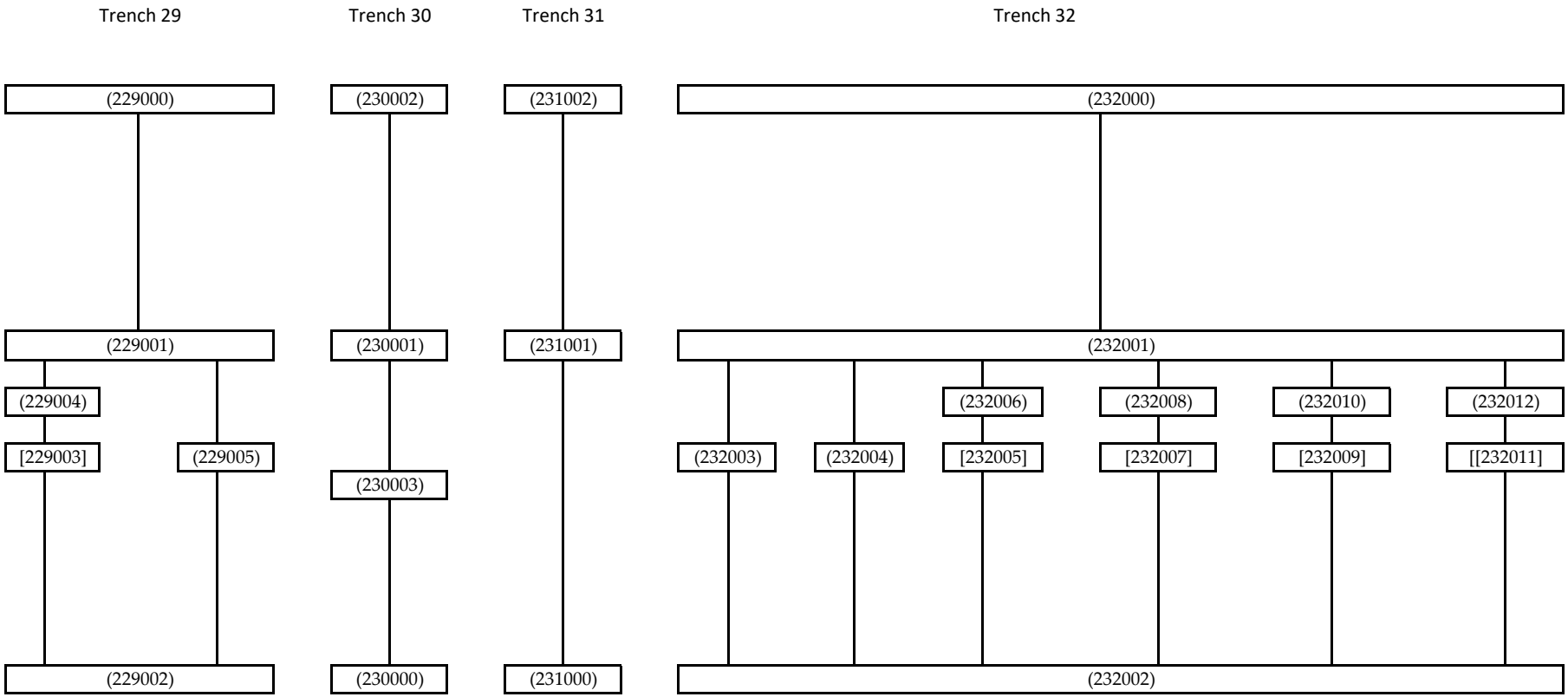
Appendix 5 – Harris Matrix











Appendix 6 – Ceramic Building Material Data

Table 4 Ceramic Building Material results by Trench

Tr	Cut	Cxt	Type	Fabric	Form	CBM no	CBM wt	Rim	Diam	EVE	Date
11	**211003**	**211004**	**Furrow**	CBM	tile	**6**	**84.5**	0	0	0	**post-med**
23	**223003**	**223004**	**Furrow**	CBM	tile	**1**	**54.8**	0	0	0	**post-med**
TOTAL						**7**	**139.3**				