Gatwick Airport Northern Runway Project

Environmental Statement
Appendix 7.8.1: Written Scheme of Investigation for Post-Consent Archaeological Investigations and Historic Building Recording – West Sussex

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1 Introduction

1.1.1 Gatwick Airport lies within the administrative area of Crawley Borough Council (in the county of West Sussex) and immediately adjacent to the boundaries of Mole Valley District Council (Surrey) to the north west, Reigate and Banstead Borough Council (Surrey) to the north east, Tandridge District Council (Surrey) to the east, and Horsham District Council (West Sussex) to the south west.

1.1.2 Gatwick Airport Ltd (GAL) has prepared an application for a Development Consent Order (DCO) for works required in connection with making better use of the airport's existing runways (the Project).

1.1.3 The Project proposes alterations to the existing northern runway which, together with the lifting of the current planning restrictions on its use, would enable dual runway operations. The Project includes the development of a range of infrastructure and facilities which, with the alterations to the northern runway, would enable the airport passenger numbers and aircraft operations to increase.

1.1.4 Land required for the Project and within West Sussex includes areas of previously undeveloped land adjacent to the boundary of the operational airport (see **Figure 1** for Project site boundary). Some of these areas are currently owned by GAL whilst others remain in third party ownership at the time of writing.

1.1.5 Following an extensive review of available desk-based information, an initial phase of archaeological evaluation was undertaken in the form of geophysical survey (magnetometry). This was carried out in areas where the methodology was appropriate and where the survey was possible given constraints such as land ownership and land-use (SUMO 2019).

1.1.6 In order to gain a greater understanding of the potential impact of the Project on any buried archaeological remains that may be present within these areas of previously undeveloped land, a phased and iterative programme of archaeological evaluation was then undertaken (**ES Appendix 7.6.2: Archaeological Evaluation Report - Land Associated with the Gatwick Airport Northern Runway Scheme** [APP-102] and **ES Appendix 7.6.3: Archaeological Evaluation Report Phase 2 – Longbridge Roundabout and Reigate Field** [APP-103]).

1.1.7 The geophysical survey and trial trenching were undertaken in accordance with respective Written Schemes of Investigation (WSIs) prepared by RPS Planning and Development (RPS) on behalf of GAL and approved by the Historic Environment Planning (HEP) team at Surrey County Council (SCC), then responsible for advising Crawley Borough Council (CBC) on archaeological matters within the planning system.

1.1.8 Five areas of archaeological and / or geoarchaeological interest have been identified within land in West Sussex required for the Project:

- Survey Area B (Museum Field) within farmland to the immediate west of the Airport;
- Survey Area H (Brook Farm) within farmland to the immediate west of the Airport;
- Area I to the south-east of the Airport (and south of the existing Crawley Sewage Treatment Works);
- Car Park X just within the southern boundary of the Airport; and
- On-airport Wastewater Treatment Works (WWTW) (Self Park North car park).

1.1.9 In addition to these four areas of archaeological and / or geoarchaeological interest, one building will be subject to a programme of historic building recording ahead of demolition. This is the former air traffic control tower within the western part of the Airport. The locations of the four identified areas of archaeological and / or geoarchaeological interest and the former air traffic control tower are indicated on **Figure 5**.

1.1.10 Other areas within West Sussex subject to geophysical survey and trial trenching investigation included survey Area A (Pentagon Field) to the east of the Airport and survey Area C to the west of the Airport at Brook Farm. In each case these areas were found to contain buried features of limited or no archaeological interest (ASE 2021). In Area A (Pentagon Field) the proposed works required for the Project comprise the placement of spoil and the establishment of an environmental mitigation area, whilst in Area C the proposed works required for the Project comprise the establishment of an environmental mitigation area with associated public access. At both locations the works required for the Project would not affect the buried features which have been found to be of limited or no archaeological interest. No further investigations are proposed at these two locations.

1.1.11 All of the Project land proposed for further archaeological investigations, and also the location of the former air traffic control tower, falls within Crawley Borough and this WSI will require the agreement of the archaeological advisor to CBC.

1.1.12 This WSI describes the methodologies that will be employed in the undertaking of the programme of archaeological Strip, Map and Sample (SMS) fieldwork, trial trenching (at the proposed On-airport WWTW only), historic building recording, reporting and archive deposition. The WSI has been prepared in accordance with the appropriate standards and guidance (CIfA 2023 a and b; East Sussex County Council et al., 2019).

1.1.13 The locations of all pre-construction archaeological investigations would be assessed for their potential impacts on ecology and nature conservation and appropriate mitigation would be implemented. This would include altering survey locations to avoid damage to ecological and nature conservation features of high value and watching briefs to ensure such features are not impacted upon.

1.1.14 A similar WSI has been prepared with regard to post-consent archaeological investigations in Surrey. That document is presented as **ES Appendix 7.8.1** [APP-105].

2 Geology, Topography and Truncation

2.1 Geology

2.1.1 The British Geological Survey (BGS Sheet 302, 1972; BGS online 2012) shows the dominant basal geology within the Project site boundary to be mudstone Weald Clay Formation, laid down in the Cretaceous period (**Figure 2a**). This varies in thickness from 120 m to 450 m and contains bands of ironstone and clay, including a seam to the west of Gatwick and another that runs south from Gatwick in the region of Crawter's Bridge (Framework Archaeology 2001a, page 5).

2.1.2 The Weald Clay Formation is overlain in places by much later superficial deposits, initially River Terrace Deposits of Quaternary date associated with the precursor(s) of the River Thames and its tributaries. The two recorded terraces reflect different depositional events (subsequently eroded) with the earlier furthest from the present course of the rivers.

2.1.3 A north/south aligned band of Head Deposits is present within the central part of the Airport. These deposits are formed through periglacial frost action and/or post-glacial outwash.

2.1.4 The location and extent of the more recent natural drainage system is shown by the linear bands of Holocene alluvium (**Figure 2a**). In the western part of the Project site, the generally east/west aligned Man's Brook feeds into the River Mole which

flows to the north east. This watercourse is then joined by the north/south aligned Crawter's Brook and the similarly aligned Gatwick Stream. East of the airport is the Burstow Stream, also aligned north/south.

2.1.5 A wider area of alluvium is recorded within the western area of Gatwick at the confluences of Man's Brook and the River Mole and it has been suggested that this deposit may have formed as a large lagoon or area of marshland (Framework Archaeology 2001a, pages 5-6). A significant thickness of up 2.6 m of alluvium (presumably deepest within palaeochannels) was recorded in the North West Zone car parking zone development. Peat deposits (with high potential to contain preserved wood and ecofacts) were found in 1998 within two geotechnical test pits associated with the Gatwick North West Zone (ibid, page 6). The two locations corresponded approximately with the former route of the River Mole and indicated thin accumulations (0.1 to 0.2 m thick) at depths of between 2.6 m to 2.9 m below ground level (TPS Consult, 1998, cited by Framework Archaeology, 2001a). The peat has similarly been interpreted as either part of the channel or the marsh/lagoon.

2.1.6 A thin depth of topsoil and an absence of subsoil may be common to much of the pastoral land within the Project site. A topsoil depth of 250-300 mm was recorded by the extensive fieldwork projects in the Gatwick North West Zone and also by small-scale work in the south western area of Gatwick (Framework Archaeology 2001b; 2002a; 2007a). For the North West Zone it was noted that *'the fact that it [the topsoil] was fairly thin and that there was no subsoil below it tends to suggest that the area had not been ploughed continuously over a long period of time'* (Framework Archaeology 2001a, page 6).

2.2 Topography

2.2.1 The Project site is low-lying and generally flat at approximately 57 m to 61 m above Ordnance Datum (AOD). The wider topographical situation of the Gatwick area can be considered as both part of the north western Low Weald (to the north west of the High Weald) between the South and North Downs, and also as the southern extent of the Thames Valley, since its watercourses drain north to the River Thames rather than south to the coast.

2.3 Truncation

2.3.1 An initial consideration of previous truncation (disturbance through agricultural activities and development) has been undertaken for the land within the Project site boundary and this is set out within **ES Appendix 7.6.1: Historic Environment Baseline Report** [APP-101]. Further information is provided within **The Historical Development of Gatwick Airport including a Review of the Extent of Past Ground Disturbance** [REP6-070].

2.3.2 Considerable or even total destruction of potential below-ground archaeological deposits as a result of previous development activity is likely throughout the majority of the operational airport. This includes the modified/culverted route of the River Mole through the Gatwick North West Zone and beneath the runways. The initial diversion of the river took it to the north of the North Terminal, whilst more recently it was diverted again to pass around the North West Zone (Framework Archaeology, 2001a, Figure 6).

2.3.3 Some areas within the Gatwick North West Zone remain undeveloped, although those areas which are not wooded have been subject to archaeological evaluation (**Figure 4**, also Framework Archaeology, 2008). There are also partially wooded green strips along the southern edge of the airport where previous disturbance through development activity is likely to be minimal.

2.3.4 The area to the east of the London to Brighton mainline railway is relatively heavily disturbed by the Crawley Sewage Treatment Works (STW), car parks (surface and multi-storey) and lakes (the Pollution Control Lagoon and the Flood Storage (Control) Reservoir). Horleyland Wood, Upper Pickett's Wood and the agricultural fields on the east side of the B2036 remain relatively undisturbed by modern development.

2.3.5 Much of survey Area I, to the east of the airport (**Figure 5**), has been disturbed by the imposition of made ground of unknown date, as demonstrated by the geophysical survey and trial trenching undertaken for the Project (see below).

2.3.6 Elsewhere much of the remaining agricultural landscape is likely to be undisturbed below the ploughsoil horizon, although ploughing will have removed the majority of archaeological layers leaving mainly negative features cutting into the subsoil or the basal geology.

2.3.7 Archaeological remains with a high degree of legibility have been shown to survive relatively well-preserved within some areas subjected to field evaluation, whilst partial survival is considered possible beneath properties and commercial facilities beyond the operational boundary of the airport. The main impact in these areas relates to ploughing and drainage. The former tends to remove the upper levels of features and most horizontal surfaces and layers.

2.3.8 Several areas within the operational airport, including the runways, airside Fire Training Ground and public infrastructure areas including the multi-storey car park and Long Stay Car Park to the east side of the railway have been subject to Ground Investigations (GI) over the past three decades or so.

2.3.9 **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104] presents the results of that GI work in relation to the examination of truncation. Figures 1a - 1d in that appendix show the locations of the GI works, whilst a spreadsheet provides information regarding the depths of recorded deposits.

2.3.10 The programme of GI work undertaken for the construction of the Boeing Hanger (see the BoeH series on Figure 1a in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]) is not relevant in terms of understanding archaeological impacts in relation to the Project, as the entire area here was then subject to site stripping and an associated archaeological watching brief (Oxford Archaeology, 2022). The report on the results of this archaeological work explains that no archaeological features or deposits were identified despite a low level of modern truncation. Therefore, this area is considered to have no remaining archaeological potential.

2.3.11 In addition, survey Area B (Museum Field) has been subject to extensive archaeological trenching for the Project during which normal topsoil and subsoil depths for farmland were recorded throughout, such that the GI investigations here (BH1MF to BH3MF, Figure 1a in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]) do not further the understanding of archaeological potential.

2.3.12 The following areas of potential relevance to archaeological potential within the Project site boundary are discussed in relation to the GI database:

- Fire Training Ground;
- Main and northern runways zone;
- Car Parks zone south of Perimeter Road South;
- Long Stay Car Park east of the railway;
- Multi Storey Car Park at Lower Forecourt; and
- South Terminal and Pier 1 west side of the railway.

Fire Training Ground

2.3.13 Investigations FTG-1-FTG-12 are airside within the Fire Training Ground to the immediate north of the western end of the runways (Figure 1a in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]). These investigations were undertaken in 1999 from relatively consistent ground levels of between 58.4 m and 58.9 m AOD. With the exception of FTG-1 (0.4 m of Made Ground), the investigations found thicknesses of Made Ground between 1.2 m and 2.2 m above the natural Weald Clay (note that FTG-6 and FTG-7 both record 0.6 m of Made Ground but appear to have been abandoned without reaching the base of the deposit). FTG-4 is the only location where the underlying geology was recorded as 'Clay and Silt' rather than 'Clay'. This may possibly suggest a trace of alluvium associated with the River Mole below the 1.2 m of Made Ground reported at that location. However, on balance this area appears to be very heavily disturbed by the land raising operation with a resulting low level of remaining archaeological potential as a result.

Main and Northern Runways Zone

2.3.14 Two sets of GI data resulting from works undertaken for the 'Main and North Runway Rehabilitation' in 2016 and 2017 are considered in relation to the runways.

2.3.15 Cable percussion, window samples and concrete cores associated with the northern runway comprise MNRR-NA21 to MNRR-39 (Figure 1a in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]). These shows depths of asphalt surfacing and concrete above 'Clay' that range in thickness from 0.56 m to 0.97 m, with an average thickness of 0.82 m.

2.3.16 A second set of GI data for the Main Runway comprised similar investigations recorded as MNRR-MA29 to MNRR-MA47 (Figure 1a in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]). These show asphalt over concrete at thicknesses of between 0.65 m and 1.03 m over 'Clay', with an average thickness of 0.81 m.

2.3.17 Given that the soft landscape either side of the runways and taxiways is at the same level as these hardstandings, the indication is that the large-scale topsoil removal and landscape levelling works undertaken to construct the runways will have truncated former ground levels to a similar level as the base of the concrete. The ground levelling would have required removal of areas of relatively higher former ground increasing truncation of the underlaying geology locally. The trial trenching for the North West Zone by Framework Archaeology (2008) and the trial trenching undertaken for the Project to the west, east and north of the airport indicate normal combined depths of topsoil and subsoil of around 0.4 m to 0.5 m. Therefore, the groundworks to level in the runways have cut well into the Weald Clay geology.

2.3.18 In addition, a further stage of truncation and compression will have been caused by heavy construction plant operating at that exposed level. Furthermore, soft spots associated with the former courses of the River Mole will most likely have been identified as such during the site strip and removed prior to runway construction. Taking these truncations into account, in combination with an appreciation to the largely negative result of archaeological trenching of the North West Zone to the north of the runways, the remaining archaeological potential in this area is very low or negligible.

Car Parks Zone south of Perimeter Road South

2.3.19 Two window sample boreholes were undertaken here in 2015 (CBBN-BH1 and CBBN-BH2 - see Figure 1a in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]). Both of these indicate 0.3 m of Made Ground over drift geology. The report identifies this drift geology for CBBN-BH2 as 'Silt Clay' (3.5 m thick) above 'Iron Stone and Clay', which could allude to alluvium but is not conclusive and would perhaps be too deep to represent a palaeochannel associated with the River Mole. These results may indicate relatively low levels of truncation from car park surfacing and other groundworks but are too small a sample to be conclusive.

2.3.20 A number of archaeological trial trenches were excavated in 2001 within the land just to the west of Car Park X (and east of the realigned channel of the River Mole). These found topsoil (average depth 0.2 - 0.4 m) over alluvium which varied from to 0.28 m to 1.05 m (Framework Archaeology 2001b). The only archaeological feature identified during this trial trenching was a recut ditch that matches a field boundary recorded on the 1839 tithe map of Charlwood.

2.3.21 Overall, this area is considered to be low or negligible, although there is the possibility of palaeochannels remaining present within or below the alluvial material here.

Long Stay Car Park east of the railway

2.3.22 An area to the south west of Pentagon Field, within a wider 'Red Archaeological Notification Area' (West Sussex), was subject to GI in 2017 including rotary cores LSCPO-CPFGBH01 to LSCPO-CPFGBH05 and dynamic samples LSCPO-CPFS01 to LSCPO-CPFS010 (Figure 1d in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]).

2.3.23 These all recorded disturbance to the previous farmland via removal of topsoil/subsoil and instigation of Made Ground, sometimes with a gravel or sand sub-base recorded, to depths of between 0.2 m and 1.2 m, and with an average combined thickness of 0.41 m. The degree to which the site was further levelled and rutted by construction plant prior to the establishment of the car park sub-base and surface is not known, but the depths indicate that truncated and/or compacted archaeological remains (therefore of reduced significance) could theoretically survive within this zone.

Multi Storey Car Park at Lower Forecourt

2.3.24 The MSCP (Hilton Hotel) to the east of the railway and south of Pond F was subject to window sampling and boreholes in 2016 and 2017. Records MSCP-BH01 to MSCP-BH03, MSCP-BH1 and MSCP-WS01 to MSCP-WS09 area assessed here as a sample (Figure 1d in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]).

2.3.25 Average depth of Made Ground over Clay calculations are not appropriate here, due to the varying OD heights from which the samples were extracted. These OD heights ranged from 58.20 m to 59.5 m AOD. The results indicate that the higher locations of BH01 (59.15 m AOD) and WS05 and WS08 (both 59.5 m AOD) were commensurate with 1.4 m, 1.55 m and 1.10 m of Made Ground respectively. However, it is also evident that elsewhere within this zone significant truncation from lower OD heights had also occurred during construction, for example 1.2 m of Made Ground from 57.57 m AOD at BH1 and 0.98 m of Made Ground at BH02 from 58.98 m AOD. The minimum recorded disturbance was 0.45 m of Made Ground from 1.55 m at WS07, but this was the exception. Overall, this zone generally appears to exhibit a high degree of disturbance to the original ground and sub-ground levels.

South Terminal and Pier 1 zone on west side of the railway

2.3.26 This area of GI includes eight test pits (STse-POT02A, 03A, 03B, 04B, 5A, 6B, 7A and 7B) and 19 window samples (STse-WS02 to WS07, STse-WS11, STse-WS13 to WS14, STse-WS17 to WS26 sample - see Figure 1d in **ES Appendix 7.6.4: Geotechnical Data Review** [APP-104]).

2.3.27 Overall, these found Made Ground and concrete between 0.39 m and 2.0 m depths in thickness, with an average of 0.66 m. This suggests some varying truncation to the underlying drift and basal geology caused by ground reduction, which in combination with the construction operation is likely to have severely impacted any archaeological remains that may have been present within this zone.

3 Archaeological background prior to project evaluation

3.1.1 The following background is adapted from the more detailed description provided in **ES Appendix 7.6.1: Historic Environment Baseline Report** [APP-101] and includes information from desk-based sources prior to the geophysical survey (SUMO 2019) and the 2021 and 2022 trial trenching evaluations (ASE 2021; 2022) for the Project. This is then followed in Section 4 of this WSI by a discussion of the survey and evaluation results for the further investigation areas within land within West Sussex required for the Project.

3.1.2 Information obtained from the West Sussex and Surrey Historic Environment Records (HERs) is summarised below where relevant to this WSI with locational information shown on **Figure 2b** ('Site' numbers used for the purposes of the Project to represent the HER records). The defined study area extends for approximately 1 km from the Project site boundary and was used for the collection and mapping of data.

3.1.3 Details of the known archaeological background for the area is presented below. The periods discussed in this section are defined as follows:

Prehistoric	
Palaeolithic	900,000 to 12,000 BC
Late Glacial/Mesolithic	12,000 to 4,000 BC
Neolithic/Early Bronze Age	4,000 to 1,600 BC
Middle to Late Bronze Age	1,600 to 800 BC
Iron Age/Roman Transition	800 to AD 43

Historic	
Roman	AD 43 to 410
Saxon	AD 410 to 1066
Medieval	AD 1066 to 1530
Post-Medieval	AD 1530 to 1900
Modern	AD 1900 to present

3.2 Palaeolithic (*c.* 900,000 - 12,000 BC)

3.2.1 The complexities of hunter-gatherer occupation of Britain in the Palaeolithic within changing glacial and inter-glacial environments are provided in a publication by Pettit and White (2012). Detailed studies of the Palaeolithic artefactual resource in the south east indicate that the river valleys provide a particularly significant source of material (Wessex Archaeology, 1993a; Wymer, 1999).

3.2.2 Palaeolithic Material adjacent to the Project site boundary comprises a single Upper Palaeolithic long blade exhibiting some retouch and use damage which was recovered from subsoil during archaeological evaluation at the existing Flood Storage (Control) Reservoir to the east of the Airport and the railway line.

3.2.3 Despite the presence of 1st and 2nd terrace gravels of (cold phase) Pleistocene age associated with the River Mole and its tributaries within the western and central parts of the Project area, notwithstanding the single find described above there are currently no other sites or finds of this date recorded for the defined study area. Low Weald Clay sites elsewhere have produced sporadic evidence of activity in the Palaeolithic, usually comprising occasional artefacts. For example, several hand axes loosely recorded 'from the Crawley area', are thought to have been derived from terrace gravels, whilst Lower Palaeolithic worked flints and bifaces have been recovered in rolled condition from both the Mole and Wey valleys to the north, and in fresh condition from claylands from to the north of Reigate (CgMs, 1997, page 7; Cotton et al., 2004, page 21; Framework Archaeology 2001a).

3.3 Mesolithic (*c.* 12,000 to 4,000 BC)

3.3.1 Mesolithic hunter-gatherers exploited game and natural resources within the thickly wooded post-glacial forests in the Weald, with watercourses probably used as route-ways. These activities were based on seasonal mobility cycles, with the activity of small bands sometimes demonstrated by small concentrations of artefacts and animal bone at 'kill sites' or campsites. Base camps, where larger groups congregated, tended to be focused on the rivers where resources were more abundant.

3.3.2 A single early Mesolithic core was recovered from deposits associated with a palaeochannel of the River Mole in the Gatwick North West Zone (Framework Archaeology, 2001a, page 9) and Mesolithic worked flint finds (possibly early Mesolithic) were recovered during archaeological work conducted by Network Archaeology in between 2012 and 2014 within the Flood Storage (Control) Reservoir area (also known as a flood compensation area to the west of Gatwick Stream) to the east of the airport (**Figure 2b**, Sites 719 and 568). This site is just outside of the Project site boundary and comprised an initial collection of 304 worked flints found during evaluation trenching (Network Archaeology, 2012b) and a further 2,080 from a test-pitting exercise targeted on the recovery of worked flints (Network Archaeology, 2014, 'weekly reports'). The evaluation stage material was recovered from many of the 49 trenches across the 11.7 hectares of the Flood Storage (Control) Reservoir site (to the west of the Crawley STW), mainly from alluvium, but also in small quantities from one of the palaeochannels and from tree holes (Site 719 on **Figure 2b**). The initial assemblage included two microliths (composite points used as arrows and spears), 19 retouched items, four single platform cores, small blades and waste flakes (ibid). The mitigation process (Site 568) comprised two phases of test-pitting within the Gatwick Stream flood plain, with 870 worked flints recovered from phase 1 and 1,190 from phase 2. The composition of this assemblage is yet to be fully reported on.

3.3.3 A Mesolithic worked flint scatter has been investigated at Haroldslea (Horley) in the north eastern part of the defined study area (Site 508, Network Archaeology, 2012a; Archaeology South East (ASE), 2009). The most significant activity locally (beyond the defined study area) has been uncovered well above the floodplain to the north west of Charlwood, where approximately 15,000 worked flints were recovered from an area only 8 metres by 12 metres in size (Framework Archaeology, 2001a, page 9). Evidence from Charlwood has also included several relatively late Mesolithic pits containing a few scraps of roe deer bone (Cotton et al., 2004, pages 23-24) and thus indicating one of the species hunted locally. A further 'chipping floor' and other worked flints are located at another site at Charlwood.

3.3.4 The most likely areas within the Project site where Mesolithic material may be encountered comprise river and stream corridors - particularly adjacent to the River Mole and the Gatwick Stream.

3.4 Neolithic (c. 4,000 - 2,500 BC)

3.4.1 The first farmers of the Neolithic created forest clearances for the newly domesticated crops and stock. Evidence of settlements is generally restricted to flint scatters within the modern ploughsoil and sometimes to clusters of shallow pits containing artefacts, charcoal and charred cereals indicative of settlement and arable in the vicinity. Buildings remain very rare in southern and central England.

3.4.2 The mitigation for the Flood Storage (Control) Reservoir (Site 568) included topsoil stripping of 'Area 3' in 2013. This work led to the recovery of a small assemblage of worked flints of possible Neolithic date including a polished stone axe. The preceding evaluation for the Flood Storage (Control) Reservoir (Site 719) included a small number of pits, one of which contained a single sherd of Late Neolithic/Early Bronze Age pottery along with wood and charcoal fragments. *'The evaluation also found evidence to suggest that wood clearance had taken place on the site at some stage during the later prehistoric period. A number of tree bole features were identified many of which contained charcoal and worked flint which would suggest tree felling'* (Network Archaeology, 2013).

3.5 Bronze Age (c. 2,500- 800 BC)

3.5.1 Following the emergence of copper in the archaeological record from around 2,500 BC (the Chalcolithic), and within a couple of hundred years of bronze, society was transformed. This was probably associated with the arrival of newcomers from the Continent bringing with them the 'Beaker package' of Beaker pots, barded and tanged arrowheads and other archery equipment such as stone wrist-guards, and copper daggers. The form of burial remained as crouched inhumations but now often within round barrows for a single important individual.

3.5.2 The Middle to Late Bronze Age (c.1500 - 800 BC) provides the first substantial evidence for settlement and farming within the wider area. It is also notable that the emergence of Middle and Late Bronze Age field-systems, representing a further intensification of land clearance for the first permanent farming settlements, are a common phenomenon close to the major rivers such as the Thames and its tributaries (Yates, 2007). However, once again a lower concentration of sites and field-systems tend to be found on the clay geologies of the Central West Weald.

3.5.3 The key known Bronze Age settlement site within the Project area relates to archaeological excavation works undertaken in 2001 within the c. 78 hectares of the North West Zone (**Figure 2b**, Site 726; Framework Archaeology 2001a; 2002a; 2002b; Wells et al., 2005). Excavation here defined a modest streamside Late Bronze Age settlement engaged in mixed agriculture on the edge of the River Mole floodplain, on the first gravel terrace, to the north east of Brockley Wood (**Figures 3** and **4**). The site included Late Bronze Age to Early Iron Age date activity, mostly c. 1,000 to 700 BC, and comprised an enclosure ditch around a gully-enclosed roundhouse, with associated pits and post-holes. The pits included two which contained relative concentrations of deliberately deposited pottery. However, only 272 sherds of pottery were recovered in total, probably reflecting the limited scale of occupation. The settlement was located on slightly elevated land at c. 58 m AOD adjacent to the river floodplain and it is suggested that it may have been only occupied for a short period, perhaps due to climatic factors (Framework Archaeology, 2002a). Nevertheless, a small number of sandy sherds may pre-date the Late Bronze Age period, being 'perhaps of Early or even Middle Bronze Age' date (ibid). Regional summaries (eg Cotton et al., 2004, page 28) regard this settlement in the Weald to be 'something of a rarity' compared to those of the Thames Valley.

3.5.4 Nearby, a large (5 m wide and 2 m deep) north/south aligned ditch, also containing Late Bronze Age pottery, was identified (Site 667; Wells et al., 2005). The full extent of the 136 m long ditch was uncovered with both terminals excavated. This substantial ditch probably relates to some form of territorial or estate boundary, hence its scale. The size also implies a significant attachment to place rather than a transient population. Pollen preservation was found to be high within the deeper stratified deposits within the ditch. There is a correspondence between the alignment of the Bronze Age enclosure and the boundary ditch and later phases of enclosure, including a possible droveway and perpendicular medieval ditch (Framework Archaeology, 2002a, Figure 2). This suggests that the Bronze Age features remained as earthworks and affected later field layouts.

3.5.5 With the exception of these sites, the extensive archaeological investigations for the North West Zone by Framework Archaeology found very little else of archaeological interest, indicating both a modest level of Bronze Age activity on the east side of the River Mole and little subsequent activity within the area. Framework Archaeology concluded that the landscape within Gatwick, to the south of the Late Bronze Age settlement and below c. 58 m AOD, was probably too damp at that time for occupation.

3.5.6 The area beyond Gatwick's North West car parks, around Charlwood Park Farmhouse and almost entirely outside the Project site boundary, has been recently allocated as a West Sussex Red Archaeological Notification Area (Red ANA - Site 487) due to potential for further Bronze Age activity along this largely undeveloped zone of the River Mole.

3.5.7 Some further probable Bronze Age (or possibly Neolithic) flintwork, including arrowheads (Site 540), has been recovered from close to the railway line near the eastern end of Riverside Garden Park (north of the A23 road) and is associated with a Surrey Area of High Archaeological Potential (AHAP - Site 498). The location is adjacent to the Gatwick Stream and this is likely to be a primary factor for the associated activity.

3.5.8 An early Bronze Age barbed and tanged arrowhead was found at Haroldslea in Horley in the north east part of the defined study area (Site 509). A ritual association with water during this period is potentially demonstrated by a Late Bronze Age sword found to the west of Lowfield Heath, Charlwood (south of Gatwick and outside the Project site boundary (Site 646)). The sword was found by workmen in 1952 at a depth of 0.6 - 0.9 m during canalization of the 'Polesfleet Stream' (the large tributary stream that runs through Langley Green). It appears to have been recovered from an alluvial or peat deposit (John Mills pers. comm.) and is most likely to have been deliberately deposited in water as a 'votive offering' perhaps as a 'coping mechanism' adopted by a community facing rising water levels during the later stages of the Bronze Age (Cotton et al., 2004, 29). The LiDAR study undertaken for the Gatwick R2 project identified a palaeochannel at the location which would appear to represent the context for this find (Site 609). The specific location at the northern end of the stream close to its connection with the River Mole may have been considered to have symbolic significance but may also be indicative of settlement nearby, perhaps within the triangular area defined by the watercourses.

3.5.9 Deposition of metalwork is also sometimes associated with wooden raised walkway structures or brushwood trackways across wetlands (Cotton et al., 2004, page 30) and the possibility of preserved wood structures associated with alluvium and/or peat cannot be discounted. As well as the famous Flag Fen and Must Farm sites near Peterborough, structures of this sort are known from a number of sites within the Thames marshes and also in East Sussex at Shinewater Park, Eastbourne.

3.5.10 Although peat deposits can date from the Neolithic and Bronze Age, climatic conditions (increasing rainfall) and the emergence

of more intensive farming, caused increased runoff leading to the formation of alluvial deposits on floodplains. There has been limited work undertaken on the local floodplain and palaeo-channels, but an initial study for the Gatwick Stream at the Crawley North East Sector by Martin Bates (1998) discussed the nature of preliminary results from test trenches as follows: *'The evidence collected from the excavation of trenches has indicated that the sediments present beneath the modern ground surface in the site are complex. Sediment types encountered in the survey are typical of those expected to occur beneath the surface of floodplains of rivers in southern England… Archaeological material may exist at any point within the sequences observed. In order to ascertain the archaeological potential of these sediments further investigation of the nature of the buried stratigraphy would be required, as would an age evaluation of the sediments observed*'.

3.5.11 Palaeochannels of prehistoric date, associated with the Gatwick Stream, were physically encountered by evaluation trenching for the aforementioned Flood Storage (Control) Reservoir adjacent to the Crawley STW north of Radford Road (Site 719). Further examples have been plotted south of Radford Road (Sites 603; 615). Due to rising sea levels in the Bronze Age, alluvial overbank flood deposits are commonly found to be of Bronze Age derivation.

3.6 Iron Age (c. 800 BC - AD 43)

3.6.1 This period is associated with the development of iron technology, changing settlement patterns reflecting environmental factors, and increased evidence for warfare reflected by a proliferation in defensive hillforts. The closest hillforts are located in a cluster on the southern edge of the North Downs, some 10.5 km to the north west of Gatwick, at Holmbury, Felday and Anstiebury. The site of the latter hillfort may have been occupied from the Late Bronze Age but appears not to have been fortified until the Late Iron Age. Felday similarly appears to have been constructed in the Late Iron Age. This evidence has been considered to reflect a general Late Iron Age expansion into parts of the Weald. It is therefore possible that these high status defensive and administrative sites may have offered protection and/or extracted taxation from the local modest farming settlements, perhaps in the early phase including the Late Bronze Age to Early Iron Age settlement at Gatwick North West Zone (Wells et al., 2005). In the Late Iron Age the Gatwick area was located within the territory of the Atrebates tribe.

3.6.2 The Weald was an area of early ironworking. The earliest ironworking of the Iron Age from the western Low Weald is found sporadically to the east and south of the Gatwick area. There is some evidence of significant ironworking at close to Gatwick such as Horley and Broadbridge Heath and most significantly Late Iron Age to Roman ore roasting furnaces have been investigated at Southgate, Crawley (CgMs, 1997, page 9). Further ironworking sites at Crawley have been identified at Broadfield and at Goffs Park in Crawley, where a bloomery industrial hearth site included two early examples of cylindrical shaft smelting furnaces, suggesting a more significant scale of production (Network Archaeology, 2012a, page 12). The ironworking on this scale may have been closely linked with the local elites.

3.6.3 Other than a possible Late Bronze Age/Early Iron Age end to occupation at the Gatwick North West Zone settlement, Iron Age settlement and burial evidence from the Project area north of Tinsley Green includes the evidence from investigations by Network Archaeology for the Flood Storage (Control) Reservoir associated with the Gatwick Stream (**Figure 2b** Sites 719 and 568, Network Archaeology, 2012b; 2014; John Mills pers. comm.), from the adjacent wheel-wash area south east of the Crawley STW that is now associated with a Red ANA (Site 484) and from the Pollution Control Lagoon site which is incorporated within the southern zone area of a separate Red ANA to the north east of the water treatment works (Sites 485 and 735, Network Archaeology, 2014 and see **Figures 8** and **9**).

3.6.4 An AHAP to the north of the airport (Site 498) includes an antiquarian find of a Late Iron Age urned cremation burial which suggests a further area of interest between the railway and Riverside Garden Park.

3.6.5 The 49 trench archaeological evaluation, test pits and open area investigations by Network Archaeology in advance of the construction of the Flood Storage (Control) Reservoir to the south of the Crawley STW (Sites 719 and 568) and evaluation and mitigation of the wheel-wash area and Pollution Control Lagoon, to the south east and north east of the water treatment works respectively (**Figure 2b** Sites 484, 485 and 735, Network Archaeology, 2014 and see **Figures 8** and **9**), identified a number of Iron Age round-houses, along with field-system and burial evidence. The results are discussed in Section 4 below.

3.6.6 Undated 'cropmark sites' within the Project area include a putative large (150 metres diameter) 'doubled ditched enclosure' in fields south of Brook Farm (within the Project Site Boundary) on the west side of Gatwick (Site 628). The colour photograph was from a 1991 aerial photographic survey of West Sussex (photograph number 147 91 209). However, specialist examination of the photograph in 2014 has cast doubt on the validity of the cropmark and it is no longer considered likely to be genuine (APS, 2014 and below). The trial trenching here for the Project in 2021 (see Section 4) also found no associated archaeological features.

3.6.7 A further possible 'banjo enclosure' (a circular form of enclosure with a long double-ditched entrance funnel of a type known from the Iron Age) had been suggested at a location to the north of the 'double ditched enclosure' (and outside the Project site boundary). This tentative identification was based on a visual inspection at Brook Farm from the air (Site 635) but again the anomaly is no longer considered to be genuine following specialist study of the photographic evidence (APS, 2014).

3.7 Roman Period (AD 43 - 410)

3.7.1 The Claudian conquest led to centralised administration and the establishment of towns associated with a proliferation of trades and business-like commerce - supported by an effective road network. This led to further agricultural expansion and minerals exploitation. The area of the Weald is most notable for its Imperial ironworks and for exploitation of timber, although some of the landscape was also occupied and farmed. Although occupation in the Weald was certainly less intensive than in coastal areas in the south east, such as the West Sussex Coastal Plain, and within the Thames Valley, there is increasing evidence for low levels of rural occupation. To date, no moderate to high status Roman villas have been found within the Gatwick area, perhaps confirming the general impression that the agricultural productivity of the clay lands (though not necessarily its mineral resources and clay for tile/pottery manufacturing) was generally insufficient to support wealthy estates.

3.7.2 There are no major Roman routes known within the defined study area, with the closest being approximately 7 km to the east, leading from Londinium (London) to the south coast (Margary, 1955: Roman Road 150) and Stane Street, the route from Southwark to Chichester via the small town of Ewell, some 10 km to the west (ibid; Roman Road 15). These roads would not have directly affected the local settlement pattern which would have been served by minor tracks, some of which might be traceable archaeologically within the Project site.

3.7.3 Beyond the defined study area, a fort with surrounding timber buildings was built in the Southgate area of Crawley and early

settlement in the vicinity suggests that the military influence stimulated earlier Roman occupation which then rapidly declined (Network Archaeology, 2012a, page 13).

3.7.4 In addition to the possible occupation zone at the east side of Gatwick, areas of Roman farming and settlement, associated with fields and trackways, have also been excavated recently at land to the north east of Horley (ASE, 2009; 2013a; 2013b).

3.7.5 In terms of industry, Gatwick is located just beyond the western fringe of the known Iron Age and Roman ironworking area, which covers most of the Weald east of East Grinstead (into East Sussex). The industry was closely associated with the Roman fleet, the Classis Britannica. The possibly peripheral nature of the Gatwick area to this industry may be reflected by an absence of major Roman roads running through the defined study area (Margary, 1965).

3.7.6 A potential Roman site within the Project site boundary is referred to as on the West Sussex HER as 'Roman occupation' at Horley Land Farm (Site 696), which is now a Gatwick car park (South Valet Car Park/Self-park South). This identification (an antiquarian find first recorded in 1857) has been based on surface finds of Roman pottery and a coin of AD 138-42 (Faustina). Its potential presence (if surviving below the car park or within adjacent greenfield areas) is highlighted by its inclusion as a Red ANA (Site 485).

3.7.7 A second possible settlement is suggested by another antiquarian find of Roman artefacts, including coins and pottery, at a location adjacent to the railway line at the eastern extent of Riverside Garden Park (Site 541). A triangular area (now a staff car park – Car Park B North) flanking the west side of the railway is a Surrey AHAP (Site 498). The aforementioned Late Iron Age cremation burial was found from approximately the same location and suggests the possibility of a long-lived occupation at a suitable location adjacent to the Gatwick Steam.

3.7.8 Despite large-scale archaeological investigation for the Gatwick North West Zone and the flood attenuation project adjacent to the Crawley STW, no significant Roman settlement remains have been encountered at these locations. There are also no further Roman sites currently recorded within the defined study area, although an archaeological evaluation comprising 30 trenches excavated across three fields in the south eastern part of the defined study area recorded possible Roman boundary/drainage ditches (Peyre, 2011).

3.8 Anglo-Saxon (AD 410 - AD 1066)

3.8.1 Early Germanic settlers of the 5th and 6th century tended to occupy the coastal and downland areas initially. There is still very little known about the Early and Middle Saxon settlement of the Weald (Drewett et al., 1988) and it has been suggested that clearances made in the Iron Age and Roman period reverted to forest (Gardiner, 1990). Elsewhere in the south east, cemetery sites have been the principal means of identifying Early and Middle Saxon occupation. In Surrey these tend to cluster around the former Roman centres such as Ewell, Mitcham, Beddington and Croydon, well to the north of Gatwick.

3.8.2 Settlement sites are less common but follow a similar distribution (although with a greater focus on the River Thames - see Hines in Cotton et al., 2004, Figure 7.1). These are usually defined by pits and/or sunken-floored buildings, sometimes associated with post-built halls. Excavated Anglo-Saxon occupation sites in the West Sussex Weald include an example at Bolnore (Margetts, 2018). Although such settlements remain rare in the Weald, place name evidence indicates increasing encroachment into the Wealden forest (the *Andredsweald* - the word weald itself meaning forest and the Andredsweald meaning forest of the port of Anderita, ie Pevensey) for farming. By the Late Saxon period the Weald had been sparsely settled.

3.8.3 Notwithstanding the above, there are no other Anglo-Saxon sites or finds noted on the HERs within the Project site boundary or the defined study area, and it is possible that the area was largely forested until at least the later Saxon period. The presence of occupation by at least the Late Saxon period is, however, implicit in the documentary evidence and local place name evidence, including Gatwick itself. The place names of most of the principal villages and hamlets within the defined study area reflect clearances in woodland.

3.8.4 For example, Horley is probably a reference to *'woodland clearance in a horn-shaped piece of land*' with the place name first mentioned in the 12th century (Mills, 1998). Crawley, though first mentioned as Crauleia in 1203, also reflects woodland clearance in the Anglo-Saxon period, its name meaning *'woodland clearing frequented by crows*' (ibid). The church at Worth includes some Late Saxon elements, whilst the Crawley area fell within the administrative Rape of Bramber and Lewes.

3.8.5 The closest manor recorded in the Domesday Survey of AD 1086 is at Ifield, to the south west of the defined study area (Open Domesday website, accessed 2019).

3.8.6 Anglo-Saxon evidence within the Project site boundary comprises a single gully traced for about 20 m at the North West Zone site which produced three sherds of Saxon pottery and was suggested as being potentially associated with a nearby settlement (Framework Archaeology, 2001b, page 13).

3.9 Medieval (AD 1066 - c. 1530)

3.9.1 By the medieval period the Weald was increasingly densely settled. This appears to have begun with seasonal use of Wealden pastures as detached elements of manorial holdings on the fringes of the Weald, leading to permanent farmsteads and hamlets - as recently identified at 'Wickhurst Green', Broadbridge Heath (Margetts, 2018). The medieval settlement pattern of the Western Weald region is typified by a dispersed arrangement of farming small-holdings, higher status moated sites, hamlets and villages and their associated fields, indicating further encroachment into the forest. The hamlets of up to five dwellings often include the name 'green' as at Langley Green.

3.9.2 The place name 'Horley' possibly means woodland clearing in a horn-shaped piece of land and originates from the 12th century (Mills, 2011) and in 1263 the Abbot of Chertsey acquired lands in Horley and annexed them to his manor of Horley (Malden, 1911).

3.9.3 The Historic England monument description for the Tinsley Green Scheduled Monument **(Figure 2b** Site 9) illustrates the nature of settlement at this time stating: *'Medieval dispersed settlements, comprising of hamlets of up to five dwellings or isolated farmsteads were throughout the parish or township. Often occurring in more densely wooded, less intensively farmed areas, or associated with a core of medieval industry, the form and status of the medieval settlements varied enormously. When they survive as earthworks, the most easily distinguishable features of dispersed settlements include roads and tracks, platforms on which stood houses and other buildings such as barns, and the enclosed fields or irregular field systems with which the dwellings were associated. These rural settlements can also be represented by below ground deposits. High status dwellings, such as moated residences or manorial complexes, may have well-defined boundaries and planned gardens. In the western and south-eastern provinces of England, dispersed settlements were the most distinctive aspect of medieval life, and their archaeological remains are one of the most important sources about rural life in the five or more centuries following the Norman Conquest'*.

3.9.4 The core of Charlwood has probably changed very little in layout since the medieval period.

3.9.5 Most of the land within the Project site boundary is in West Sussex, but much of this was formerly within the Surrey parishes of Charlwood and Burstow (now neighbourhoods of Crawley) - although these villages themselves remain in Surrey. The village centres lie beyond the Project site boundary but associated hamlets at Lowfield Heath and Fernhill and known and unknown farmsteads may contain medieval remains. The important (Scheduled) site of Tinsley Green medieval hamlet is located beyond the southern edge of the Project Site Boundary.

3.9.6 Documentary evidence indicates that the medieval to post-medieval Gatwick House was located adjacent to what is now the North Terminal at Gatwick Airport (Site 680 - see also Figures 4.1.2 and 4.1.3). The location of the fish pond is also recorded (Site 806). The house was mentioned in a will of 1576 and in 1912 was referred to as moated, although the HER notes that there is no moat but rather a fish pond of later date at the now demolished house. The location will have been compromised by the construction of the airport although deeper features such as a moat might partially survive.

3.9.7 There are two ANAs within the southern part of the Project site or immediately to the south that may potentially relate to medieval moated sites. These are the former Park House Farm within the airport boundary (Site 480) and Charlwood House moated site (Site 479) just to the south of the perimeter road.

3.9.8 Red ANA DWS8656 (Site 480) is within the south western part of the Project site boundary, adjacent to the perimeter road, and references Park or Park House Farm (Site 695). A farm is shown here on Rocques' 1768 Map of Surrey and therefore pre-dates that map (not 1681 as indicated in a desk-based assessment of this location (AOC Archaeology, 2007). This desk-based assessment was produced ahead of the demolition of previously existing buildings at the site for a temporary Customer Care Unit. The 1842 Tithe Map shows the farm with a series of ditches surrounding the farmhouse.

3.9.9 Park Farm was demolished between 1895 and 1919 and when the airport was built little remained here. A homestead moat appears likely to have been associated according to the HER although the assessment noted that *'It is not possible to determine the nature or date of the settlement at Park House Farm through the study of historical sources alone'*. Its inclusion as an ANA may also refer to post-medieval iron extraction in the wider vicinity, as the former Senior Archaeologist at West Sussex County Council noted that bell pits, typically associated with iron production, were identified here during geological survey in the 1960s.

3.9.10 The HER also records a possible moat associated with the medieval Charlwood House within Red ANA DWS8655 (Site 479), just to the south of the airport boundary/ perimeter road.

3.9.11 Lowfield Heath was a hamlet of Charlwood within the medieval Hundred of Reigate (*Cherlewude* in the 13th century; *Cherlwude* 13th/14th century; *Chorlwode* 14th century) and is now a neighbourhood of Crawley. Although known of in the Domesday Survey (Goldsmith 1987, 122), the heath was not named until the 14th century when it was identified as Lowe Heath after a man called Lowe, with later corruptions as Lovel Heath and Lovell Heath by the 18th century (ibid, page 5; Harper, 1906, page 316). However, the location of associated habitations and whether the now relocated 19th century windmill replaced a medieval version in the same area are not known.

3.9.12 Tinsley Green, flanking Radford Road which forms the southern extent of the Project, was originally a hamlet in the parish of Worth. The name was first recorded in the 14th century when Richard de Tyntesle (Richard of Tinsley) was named on a tax return (Gwynne 1990, 50; CgMs 1997, page 10). The Scheduled Monument at Tinsley Green (Site 9) and surrounding area south of Radford Road is the focus of a lower status hamlet occupied from the 12th century onwards.

3.9.13 The surrounding area was extensively evaluated for the Crawley North East Sector development (Sites 46-61, 755). Remains survived as low earthworks up to 0.5 m high and included a holloway and flanking house platforms (with a trench excavated though the holloway and one of the house platforms in 1998). Both the HER and Scheduled Monument description indicate the possibility that further associated dispersed settlement archaeological remains may survive beyond the Scheduled area, in particular in areas of post-medieval occupation at Tinsley Green and to the north of Radford Road (within the Project site boundary). However, the Network Archaeology evaluation of 49 trenches north of Radford Road (Site 719) found only medieval field-ditches and no further medieval settlement or ironworking evidence that may be associated with the Tinsley Green Scheduled Monument (Network Archaeology, 2012b). Part-excavation of the core area of the monument itself has indicated continuous occupation well into the post-medieval period due to a close symbiotic relationship with the nearby ironworking centre at Forge Farm (see below).

3.9.14 An evaluation in the grounds of the late medieval Grade II listed (15th/16th century) properties of Edgeworth House and Wing House on the west side of the Balcombe Road outside of the Project site boundary failed to identify remains earlier than the later post-medieval period (Sites 779 and 780, Framework Archaeology, 2007c).

3.9.15 A more detailed discussion of the medieval landscape and relatively early enclosure of the much of the common land is contained within **ES Appendix 7.6.1: Historic Environment Baseline Report** [APP-101]. The heaths and commons probably originated in this period, including Westfield Common (north east of the former Park Farm within Gatwick); the extant Lowfield Heath; White Common (formerly at the north west extent of Gatwick); and Horley Common (formerly occupying much of the Fernhill area to the east of the Project site).

3.9.16 The North West Zone archaeological excavation works undertaken in 2001 (Site 666, Framework Archaeology, 2001a; 2002a; 2002b; Wells, 2005) included the identification of medieval field ditches. These confirm the existence of medieval field systems within the landscape in the vicinity of Brook Farm.

3.9.17 The Flood Storage (Control) Reservoir project identified further medieval field boundary ditches and aerial photographs have suggested ridge and furrow earthworks to the east in a field south of Tinslow Farm (Network Archaeology, 2012a). Further hints at elements of medieval landscape elements were indicated by the walkover survey. The remains of a pattern of lost field boundaries (some of which had probably survived until enclosure at around 1840) would be expected to be present.

3.9.18 Medieval field ditches were also encountered within the flood attenuation works evaluation between Radford Road and the Crawley STW adjacent to the south eastern area of the Project site (Site 719).

3.9.19 A Red ANA at Gatwick Manor Inn to the south of the Project Site Boundary (**Figure 2b** Sites 482, 571, 638, 639, 685, 734, 742 and 749) incorporates the former open-hall 15th century and later timber-framed house also known as Hyders and Hydehurst Farm (Site 29). A negative evaluation comprising six trial trenches was conducted ahead of construction of the hotel accommodation (Site 734).

3.9.20 Langley Green, now a neighbourhood of Crawley, is likely, based on its Old English place name, to have been a medieval hamlet of Ifield. Fernhill Hamlet and its surrounding (former common) landscape was formerly a hamlet of the parish of Burstow in the Tandridge District of Surrey.

3.9.21 Some of the locations of post-medieval farms within the wider study area, such as Hyder's Farm, Brooklyn Farm, Amberley Farm (Langley Green), Hawthorne Farm, Rowley Farm, Oldlands Farm (Tinsley Green) and Fern Court Farm (Fernhill), might represent continuity from earlier farms with buried medieval archaeological remains.

3.9.22 Given the Saxon origin of the place name Rowley (Rowley Farm - south of the Project site boundary) and the prominent location of the post-medieval farmstead set within an oval landscape block around the hill (including Crawter's Brook to the west), a medieval phase here still seems to be very likely. The historic farmhouse (Sites 586 and 775) and its yards are located within a curvilinear earthwork partially around the western and southern sides (Site 626), all set within a wider oval enclosure incorporating fields to the west and east with possible cultivation remains of ridge and furrow agriculture (Sites 612 and 614).

The Medieval Wealden Iron Industry

3.9.23 A principal area of archaeological and historical interest for the Low Weald and of particular interest within the vicinity of Horley and Crawley relates to the ironworking industry. Hodgkinson (2004) provides an exhaustive analysis of ironworking in the Low Weald, much of which is of relevance to the present defined study area. He states *'although there is very limited evidence for iron working in the early Middle Ages, production does not seem to have developed in the district around Horley until the fourteenth century, when it formed part of a larger area that extended into northern Sussex and south-west Kent. This activity may be regarded as a precursor to the main expansion of iron production based on water power which promoted the Weald to national significance in the sixteenth and seventeenth centuries'*.

3.9.24 The first stage of ironworking comprised creation of a bloom of iron via smelting. This usually took place close to the source of the ore (ibid). The secondary working (at a forge) could take place further away depending on transport constraints and the availability of a water source.

3.9.25 At Tinsley Green this situation is reflected by the growth of the industry from the late 14th century in concert with the technological development of the blast furnace. The raw material to be gleaned from the Weald Clay around Crawley was ideal for iron production and Tinsley Forge (now Forge Farm - Site 643) was one of a number established at this time (Gwynne 1990, 70-1). The initial stage of cast iron production took place at Tilgate with the product transported to Tinsley Green for its reworking into wrought iron using the blast furnace technology (ibid, page 73). The Crawley North East Sector investigations included preliminary evaluation trenching around Forge Farm, Tinsley Green in the form of 34 trial trenches which confirmed the site as a late medieval and post-medieval ironworks (Wessex Archaeology, 1998).

3.9.26 Negative evidence from the area around Oldlands Farmhouse includes a geophysical survey for Network Archaeology which reported that *'a geophysical survey to the north of Radford Road revealed a range of magnetic anomalies, the vast majority of which have been interpreted as being non-archaeological/ natural, recent ground disturbance and buried iron objects. A number of linear anomalies are considered to be buried pipes. In addition, there are a limited number of small anomalies of possible archaeological origin but these do not display any significant concentrations or configurations which might result from any significant concentration of settlement remains (Figure 4). None of the anomalies are sufficiently extensive and varied to suggest the presence of ancient iron-working or other industrial activities'* (Bartlett-Clarke, 2011).

3.9.27 In addition to the important medieval to post-medieval forge at Forge Farm (Tinsley Green), a medieval smelting site was located at Thunderfield Castle (**Figure 2b** Sites 7, 495, 512 and 557), with further possible smelting sites at Ten Acre Wood (Burstow), Burstow Park Farm and Horncourt Wood to the north east (Gwynne, 1990, pages 70-1).

3.10 Post-medieval (AD 1530 - 1900)

3.10.1 The post-medieval period is assessed in terms of historic periods of influence as landscape layers in the sections below. With the exception of the superimposition of Gatwick Airport (Site 304) and the Manor Royal Industrial Estate, the extant surrounding rural landscape has changed very little since the post-medieval period. The key influences on inhabitation (density of occupation) up to AD 1900 have been the 16th to 17th century expansion of the iron industry, the subsequent Agricultural Revolution and the construction of the London to Brighton mainline railway.

3.10.2 The possible medieval moated sites (discussed in the medieval section above) including at Park House Farm (Site 480), have post-medieval phases. Buried archaeological remains are to be expected associated with these properties, as demonstrated by the fieldwork trenching and watching brief at Gatwick Manor Inn (TVAS, 1996) which identified a beehive-shaped brick cess pit and a Victorian well or soakaway.

3.10.3 A number of existing farmhouses have been entered on the HER following a *'Historic Farmlands and Landscape Character in West Sussex*' survey (the project aimed to represent all farmsteads shown on the Ordnance Survey 2nd edition 25" (to the mile) mapping of 1895); these are further discussed below.

3.10.4 Site 672 relates to Charlwood Park Farm just to the north west of the Project site, as shown on Rocque's 1798 Map of Surrey. The farm complex is to the west of the Project site. Brook Farm, Crawley (Site 698) is located at the western edge of the Project site.

3.10.5 The site of Larkins Historic Farmstead, Crawley (Sites 573 and 584) was located below the runway in the central eastern area of the airport, with the site of Westfield Farm Historic Farmstead (Site 600) to its west within the central western area of the airport.

3.10.6 The sites of Oaktree Historic Farmhouse, Crawley (Sites 582 and 583) and Hydecroft Historic Farmhouse (Site 570) were located within the southern central part of the Project site. The site of Heath House Farm Historic Farmstead, Crawley (Sites 563; 564) was also located within the southern central part of the Project site.

3.10.7 The site of High Castle Farm (Sites RPS 565 and 566), nearby unnamed former historic farmhouse (RPS 558 and 559) and the site of Huntsgreen Historic Farmstead, Crawley (Sites 569) were all located in the south eastern area of Gatwick, demonstrating a density of landholdings.

3.10.8 The site of 'Roles' Historic Farmhouse (Site 593) was located within the eastern part of the Project site, with the site of Pickett's Barn historic farmstead, Rusper (Site 590) at the central eastern boundary of the Project site.

3.10.9 It is likely that archaeological remains of these farmsteads, where there is correspondence with the airport's infrastructure and surfacing, will have been removed during the levelling works and construction.

3.10.10 Many of the field boundaries shown on the 1839 tithe map remain in the present landscape, whilst the straight-sided fields of the grid at Lowfield Heath provide the clearest example of 19th

century enclosure of the commons and heaths within the defined study area. In terms of archaeological remains, the previously 'open' heath area may contain traces (ditches and/or holloways) of the tracks depicted on early mapping.

3.10.11 The North West Zone excavation works undertaken in 2001 (Framework Archaeology, 2001b; 2002a; 2002b; Wells, 2005) identified medieval and undated boundaries and a possible drove route that show remarkable continuity of alignment with the Late Bronze Age enclosure ditch and appear to also respect the northern end of the large Late Bronze Age boundary ditch (Site 667). The undated elements correspond with the 1839 tithe map.

3.10.12 It appears therefore that banks associated with Bronze Age landscape elements may have influenced the associated landscape as late as the 19th century. Ditches shown on the 1839 Charlwood Tithe Map were identified as archaeological features by Framework Archaeology within the area for the proposed River Mole diversion corridor (notably this zone was devoid of any earlier archaeology, probably due to its low-lying and damp topography).

3.10.13 Site 670 relates to two linear ditches recorded on the 1839 tithe map and identified during archaeological investigations within Car Park Z (now Car Park X) at the southern edge of the airport (Framework Archaeology, 2001b).

3.10.14 Although the Wealden forest has long since been cleared, a number of small woods remain or have since been planted within the Project site. These include Brockley Wood within the Gatwick North West Zone, and Horleyland Wood and Upper Pickett's Wood to the east of the railway.

3.10.15 A number of field banks, some of which doubled as possible tracks, were noted during a walkover survey within Upper Pickett's Wood. These indicate survival of post-medieval and possibly earlier plot/field boundaries and are amongst the few earthwork features surviving within the modern landscape within the Project site boundary. Similar features were trenched for the Crawley North East Sector project and *'although none of these could be closely dated, some are considered most likely to be of post-medieval date*' (Wessex Archaeology, 1998, page iv). Buried archaeological remains may also be better-preserved within woodland where they have been protected from deep modern ploughing.

Post-medieval industry

3.10.16 Although present in the 14th century, the Wealden iron industry gained major prominence in the 16th and 17th centuries and was accompanied by widespread tree felling for furnace fuel.

3.10.17 The Park House Farm Red ANA (Site 695) may also refer to the iron extraction in the wider vicinity as the former West Sussex County Archaeological Officer noted that bell pits typically associated with iron production were identified here during geological survey in the 1960s (John Mills pers. comm.). These are circular, near originally vertical-sided mine or pit features, whose sides tend to collapse leaving a bell-shaped profile. In addition to extraction pits, hammer ponds and watermills were required for ironworking.

3.10.18 Although wrought iron production industry generally declined in the 17th century, at Tinsley Green itself this process remained successful (at Forge Farm) well into the 18th century when it finally closed (Gwynne, 1990, page 89). The place name 'Black Corner' on the bend of the B2036 (the Balcombe-Horley road - a former route to London) at the junction with Radford Road, is a reference to the industry. Oldlands Farmhouse is a historic farm of 17th century date located on the north side of Radford Road and adjacent to the Project site boundary; it was built and owned by the ironmaster who owned the forge.

3.10.19 In an archaeological assessment of the Tinsley Green medieval and post-medieval ironworks just to the south of the Project site in the Forge Farm area of Tinsley Green (for the Crawley North East Sector proposals), it was noted that; *'excavation of comparable Weald sites at Ardingly, Blackwater Green and Chingley suggest that the Forge Farm site will contain the remains of two or three stream races running through the remains of the forge buildings. These could contain in situ water wheels below existing ground level. The hearths tend to leave slight traces due to their insubstantial footings. The hammer and anvil foundations are likely to survive in good condition. Excavated examples have generally been of massive timber construction, which because of their location, in waterlogged alluvial conditions adjacent to streams, tend to be well preserved…*' (CgMs, 1997, page 12).

3.10.20 The preliminary evaluation here (Wessex Archaeology, 1998) confirmed evidence associated with the industry but noted that *'as the current river was scoured and widened by the water board in the past, the chances of significant remains surviving in this area are thought to be slight. Consequently, it is now not thought that any forge remains warranting preservation in situ will be present on the site. Rather, the truncated and disturbed remains present can be preserved by record through a programme of archaeological field excavation'*.

3.10.21 Brick-making industry (possibly associated with the iron industry) is implied by place names within the Project site boundary, including 'Kiln Field' within the previously investigated North West Zone (Site 634). This field is referred to on the Tithe Apportionment of 1839 and could refer to brick/tile production or lime working.

4 Results of Geophysical survey and trial trenching conducted for the project

4.1 Introduction

4.1.1 As noted above, archaeological evaluations have previously been undertaken within soft landscape areas within of the Project, most notably by Framework Archaeology within the Gatwick North West Zone. These evaluations were followed by appropriate detailed investigations where archaeological potential was identified, whilst the remaining areas subject to evaluation were considered to hold low archaeological potential. Palaeochannels related to former courses of the River Mole were encountered and sampled during this work.

4.1.2 Of relevance in terms of palaeoenvironmental potential was a small number of archaeological trial trenches undertaken in 2001 within the land just to the west of the current Car Park X (and east of the realigned channel of the River Mole). These found topsoil (average depth 0.2 - 0.4 m) over alluvium which varied from to 0.28 m to 1.05 m in depth (Framework Archaeology 2001b). The only archaeological feature identified during this trial trenching was a recut ditch which matches a field boundary recorded on the 1839 tithe map of Charlwood. However, given the suggested potential for alluvium and palaeochannels in this area, an archaeological watching brief during bulk excavation (for water attenuation) at Car Park X is proposed in Section 6 below.

4.1.3 The archaeological evaluations for the Project were targeted on soft landscape areas where archaeological potential was yet to be determined (or fully determined in the case of Area I where Network Archaeology had previously undertaken partial investigations).

4.1.4 An initial programme of geophysical survey (magnetometry) was carried out at specific locations within the Project site boundary. The scope and the methodology for this survey programme was set out within a Written Scheme of Investigation (RPS, 2019) and was agreed by the appropriate archaeological advisors to the local planning authorities. The geophysical survey areas were identified as Areas A-I (with E and G eventually not used) and their locations are indicated on **Figure 5**.

4.1.5 A report was produced that describes the methodologies used and the results of the survey (SUMO, 2019). Greyscale and trace plots were produced for each area of survey. The report describes the anomalies located in each survey area and the potential for such anomalies to be of archaeological interest. The report also provides an indication of the confidence rating that can be placed on the results.

4.1.6 In order to further enhance understanding of the potential impact of the Project on any buried archaeological remains that may be present within these areas of previously undeveloped land, a phased further programme of archaeological trial trenching evaluation was undertaken. For the relevant areas in West Sussex a Written Scheme of Investigation (WSI) for archaeological evaluation was produced which set out the methodologies and aims for the trial trench evaluation within Areas A, B1, C1-C3 and H1 (RPS, 2021). This WSI was subsequently agreed by the archaeological advisors to the local planning authorities ahead of commencement.

4.1.7 The overall aim of the programme of archaeological evaluation was to provide further information regarding the potential location and nature of archaeological remains within the areas subject to evaluation.

4.1.8 The results of the trial trenching evaluation are summarised below with the plans showing the trenches provided, in relation to the geophysical survey, on **Figures 7** and **10**.

4.1.9 The report on the results of the trial trench evaluation for the West Sussex areas of the Project was prepared by Archaeology South East (ASE, 2021) and is reproduced as **ES Appendix 7.6.2: Archaeological Evaluation Report: Land Associated with the Gatwick Airport Northern Runway Scheme** [APP-102].

4.2 Geophysical Survey and Trial Trenching Results

Area A (Pentagon Field)

4.2.1 Area A (Pentagon Field) is located to the east of the operational airport and immediately west of the B2036 Balcombe Road (**Figure 5**). Just to the west of Pentagon Field is a Red ANA identified as *'Roman Occupation, Balcombe Road, Crawley'* (**Figure 2b**). This ANA is based on antiquarian findings of Roman pottery in the area, as indicated on the 1st edition Ordnance Survey (OS) 6'' (to the mile) map which was published in 1872-74.

4.2.2 The whole of the area covered by the ANA has been developed in recent years, mostly as a group of surface car parks. The southern part of the ANA (to the south-west of Area A) was formerly a soft landscape area which was subject to geophysical survey and excavation ahead of construction of the Pollution Control Lagoon (also known as the 'Balancing Pond North'). Although not yet recorded on the West Sussex HER, an interim plan and text of the key results of the archaeological work undertaken at the Pollution Control Lagoon site have been provided to RPS (by Network Archaeology).

4.2.3 The findings included two ring-gully features of Iron Age date (these are most likely to represent eaves-drip gullies around round-houses - although one is quite large at 15-20 m in diameter) and a rectilinear field-system which appears to include double-ditched tracks or drove-ways (**Figures 8** and **9**). There was a concentration of domestic debris including Iron Age pottery, animal bone and also a quantity of iron slag which could indicate iron-working in this area. Other features included a Late Iron Age urned cremation burial, a number of dispersed pits and probable waterholes for livestock. One pit contained a large preserved piece of split timber. The interim plan of the Pollution Control Lagoon site indicates that the Iron Age occupation (and cemetery) area extends beyond the area which was examined.

4.2.4 Despite the findings (summarised above) above to the west and south west of Area A, the geophysical survey (SUMO 2019) only identified post-medieval field boundaries as shown on the 1st edition OS 6'' map (see **ES Appendix 7.6.1: Historic Environment Baseline Report** [APP-101].

4.2.5 The trial trenching within Area A comprised a grid of 44 no. trenches each 33.5 m long and 1.8 m wide. Some of the trenches were targeted on the geophysical anomalies described above. Few archaeological features were identified within the trial trenches. Those that were present remain undated, typically representing former field boundary ditches which correspond with land divisions shown on the Ordnance Survey Drawing (OSD) of 1810 and more accurately on the 1st edition OS 6" to the mile map of 1874. The combined depth of the topsoil and subsoil within the trenches was c. 0.35 m, with Weald Clay underlying these soils.

4.2.6 The majority of features recorded were former field boundaries containing no artefacts. Only Trenches 31 and 72 produced features with associated artefacts. Trench 31 was within the northern part of the field and included an undated north west/south east aligned ditch [31/005] that corresponds with a linear feature recorded on the geophysical survey. In addition, an east/west aligned gully produced ten sherds of 13th century medieval pottery derived from three vessels and a fragment of iron slag. No other features were noted within the trench. Two ditches were identified within the extreme south eastern extent of the field within Trench 72. An undated ditch [72/003] ran north-west to south-east near the southern end of the trench, whilst ditch [72/005], on a similar orientation produced small quantities of fired clay and ironworking slag. A sample taken for analysis of environmental material did not produce any material of interest. The feature was truncated by an undated pit [72/007].

4.2.7 In summary the report concludes "*Medieval material, and slag presumed to be medieval, were also encountered at the northern and southern extremities of Area A (Trenches 31 and 72), which suggested the foci of the two areas of activity lay outside of the site"*. Overall, the archaeological potential of Area A (Pentagon Field) is considered to be very low, with areas of slightly higher potential (medieval) in the extreme south east and the northernmost parts of the field. The majority of excavated features within the evaluation area were former field ditches, usually undated by finds but which in many cases correspond with known post-medieval and later field boundaries, or align with modern field boundaries, thereby suggesting continuity in layout with the present landscape.

Area B (Museum Field):

4.2.8 The geophysical survey of Area B (Museum Field) identified several possible features of archaeological interest, including an apparent sub-rectangular enclosure) at the eastern edge of the survey area and extending beyond the survey area (**Figure 6**, feature 9). The linear feature forming the west side of the enclosure is well-defined, and in the northern part it is mirrored by a parallel feature. This may represent a livestock drove or funnel

along the northern side of the enclosure. Another possible enclosure is suggested by a shorter linear anomaly to the south west. A pattern of north-south aligned linear anomalies are also present across Area B1 (**Figure 6**, feature 10). Given their straight form (rather than the S-curve form more typical of medieval ridge and furrow) these are likely to represent post-medieval arable practices.

4.2.9 The trial trenching within Area B comprised a grid of 42 no. trenches each 33.5 m long and 1.8 m wide (**Figure 7** which also shows the geophysical survey results). Some of the trenches were targeted on the geophysical anomalies described above.

4.2.10 The combined depth of the topsoil and subsoil within the trenches was c. 0.35 m in depth above the Weald Clay. There were few archaeological features identified. Those trenches which contained features are discussed below, with feature numbers as described in the evaluation report (ASE 2021).

4.2.11 In the north western area of the field a north/south aligned gully in Trench 123, feature [123/004], continued to the south into Trench 130 as undated ditch [130/008]. Other undated features within Trench 130 comprised a gully [130/004] and a post-hole [130/006].

4.2.12 Trench 129 within the north eastern area of the field produced a single pit [129/004] containing the remains of a Late Iron Age or Roman grog-tempered pottery vessel, which is interpreted as a probable cremation burial. The report states *'Given this interpretation, 'an application for the authority to excavate human remains for archaeological purposes' form was completed and sent to the Ministry of Justice. However, ASE was subsequently informed that there was a considerable delay on the processing of such applications, and therefore it was necessary to leave the deposit in situ.*'

4.2.13 The possible enclosure and flanking trackway ditches identified at the central eastern edge of Area B by the geophysical survey were investigated by Trenches 143, 144 and 150. Trench 143 identified a north east/south west aligned ditch of the possible trackway, feature [143/004] which was 0.22 m deep and the parallel northern side of the enclosure itself, feature [143/007] which was 0.36m deep. The latter continued towards the north east as expected into Trench 144 as a 0.3 m deep feature [144/004]. The returning north west/south east aligned ditch was investigated as a 0.15 m deep feature [150/004] within Trench 150. None of the ditches produced dating evidence, suggesting the associated enclosure may have had a non-domestic function such as for livestock holding.

4.2.14 Two undated ditches were also identified to the west of the putative enclosure within Trench 141, features [141/004] aligned north west/south east and [141/006], the latter continuing into Trench 144 as [144/04]; whilst an undated post hole was excavated in Trench 133 [133/004].

4.2.15 Trenches 154, 155 and 156 in the south eastern area of the field identified a small cluster of features comprising an undated north/south aligned ditch within Trench 154 as feature [154/004]; a pit or post-hole [155/04], post-hole [155/008] and north east/south west aligned ditch [155/010] in Trench 155 and a north/south aligned ditch in Trench 156. These were undated, although the post-hole produced unidentified burnt bone and oak charcoal from an environmental sample. The ditches within Trenches 155 and 156 correspond to a curvilinear ditch identified by the geophysical survey (**Figure 7**) that might be associated with an enclosure.

4.2.16 Finally, ditches 151, 159 and 160 within the south western area of the field produced another low-density scatter of features. These comprised a post-hole [151/004] and a north east/south west aligned ditch [151/006] within Trench 151; a north/south aligned gully [159/004] and two post-holes [159/006] and [159/008] in Trench 159; also a 1.5 m diameter and 0.3 m deep pit [160/004] in Trench 160. None of these features produced dating evidence.

4.2.17 The report concludes that Area B contains possible evidence for a cremation cemetery (albeit based on a single possible urned cremation burial in Trench 129) - which may be contemporary with an enclosure, or enclosures, in the vicinity of Trenches 129, 136, 143, 144 and 150 (although the associated ditches could not be confirmed as Late Iron Age or Roman date due to an absence of artefacts). The report also tentatively suggests that some domestic activity might be associated with the undated possible enclosure ditches in Trenches 154, 155 and 156 but occupation evidence in those trenches is very limited.

4.2.18 Overall, the eastern part of Area B can be characterised as having a high potential for archaeological activity, albeit of local interest rather than anything greater. The rest of Area B has a much lower potential.

Area C (Brook Farm):

4.2.19 This land to the west, south and south east of Brook Farm is bordered to the north by Charlbrook Road. The geophysical survey of Area C1 identified a meandering linear anomaly just to the south of Man's Brook and this may represent a former channel of the watercourse (**Figure 6**, feature 13). A potential archaeological feature was recorded as a c. 100 m length of curving ditch within the eastern area of the field (**Figure 6**, feature 7). This is to the south of the HER reference to a possible banjo enclosure (see above) and the anomaly does not suggest this type of enclosure. However, its curvilinear form is suggestive of a later prehistoric date (Bronze Age or Iron Age). To the north west was another linear anomaly comprising a section aligned north east/south west with a shorter section at the north eastern end joining at a right angle (**Figure 6**, feature 8). The survey of Area C1 also identified a pattern of linear anomalies which are perpendicular to the north-south alignment recorded to the south in Area B1, although traces of a separate area of north-south aligned arable features are suggested in the northern part of Area C1.

4.2.20 No anomalies of potential archaeological interest were recorded by the geophysical survey of Areas C2 and C3 (Brook Farm), although the survey data for Area C3 indicated some level of magnetic interference. No geophysical survey was undertaken of Area C4 (north of Man's Brook).

4.2.21 The trial trenching within Area C (sub-fields C1, C2, C3 and C4) comprised a grid of 52 no. trenches each 33.5 m long and 1.8 m wide (**Figure 7**), with some trenches targeted on the geophysical anomalies described above.

4.2.22 The combined depth of the topsoil and subsoil within the trenches was c. 0.35 m in depth above the Weald Clay. There were few archaeological features identified. Those trenches which contained features are discussed below, with feature numbers as described in the evaluation report (ASE 2021).

4.2.23 Field C1 included confirmation of a meandering palaeochannel within northern trenches 78 and 79. The latter included a second such channel in addition to an undated 1.31 m diameter 'hearth' pit [79/009] which exhibited a burnt red halo around its edge and contained a charcoal-rich fill with this fuel derived from nearby woodland. A number of very similar hearth pit features were noted within Trench 83 (1.7 m diameter and 0.11 m deep feature [83/006]); Trench 90 (1.8m diameter and 0.35 m deep feature [90/005]); Trench 96 (1.69 m diameter and 0.19m deep feature [96/006]); Trench 97 (1.2 m diameter and 0.12 m deep feature [97/005]) and Trench 100 (1.22 m diameter and 0.04m deep feature [100/004]).

4.2.24 There was no evidence in Trenches 82 and 83 for the possible ditch suggested by the geophysical survey. However, the curvilinear ditch noted by geophysical survey within the eastern zone of the field was located by Trenches 89 and 101 as a 0.74 m wide and 0.32 m deep gully in Trench 89, feature [89/004] and as a 0.56m wide and 0.24 m deep gully in Trench 101, feature [101/04]. No dateable finds were recovered but the leached-out, light orangey-grey, silty clay fill and curvilinear form nevertheless suggest a likely prehistoric date, perhaps as a minor landscape boundary.

4.2.25 Trench 84 contained an east/west aligned 2.08 m wide and 0.65 m deep undated ditch. Trench 86 in the western central area of the field included an undated east/west aligned gully [86/006] and a similarly aligned ditch [86/007] that contained pieces of late post-medieval brick. The alignment, nature of the fills and finds suggest these ditches are of post-medieval date.

4.2.26 In the eastern area of the field Trench 90 contained a gully [90/008] and ditch 90/010 flanking a 0.26 m deep deposit of recently deposited made ground placed here for an access route, whilst Trench 96 included a large 4.5 m diameter and more than 1.94 m deep quarry pit. This feature, although undated by finds, is presumed to be a marl pit for the extraction of clay for agricultural use, rather than a minepit for extraction of iron ore, and the excavators suggest a likely post-medieval date. Another possible quarry was noted in Trench 97 (feature [97/010]).

4.2.27 Further undated north-east/south-west aligned gullies were identified within the central southern area [94/004] and south-western [103/004] areas of the field.

4.2.28 Field C2 was investigated by Trenches 105 to 114 but only Trenches 105 and 110 in the central western area produced archaeological features comprising further heath pits [105/004] (diameter 1.05 m and depth 1.14 m) and [110/004] (diameter 1.37 m and depth 0.09 m).

4.2.29 Trenches 115 to 122 in Field C3 produced two further hearth pits within Trench 115 as feature [115/004] (diameter 1.6 m and depth 0.22 m) and Trench 120 as feature [120/004] (1.6 m diameter and depth 0.04 m). An undated east/west aligned ditch was noted in Trench 123 as feature [123/004], whilst several modern pits containing plastic, glass and other modern finds were identified in Trenches 117 and 121.

4.2.30 No archaeological features were identified within Field C4. However, both Trenches 73 and 74 encountered alluvial clay beneath the topsoil and subsoil suggestive of the presence of palaeo-channels related to former courses of Man's Brook.

4.2.31 To summarise, an undated curvilinear ditch of possible but unconfirmed prehistoric date and a scatter of 'hearth' pits of uncertain date were encountered within Area C (Brook Farm). In accordance with the specialist aerial photographic assessment for the fields at Brook Farm, there was no evidence for the existence of possible Iron Age enclosures, as was previously suggested by the HER.

4.2.32 The 'hearth' pits found across Fields C1, C2 and C3 produced limited assemblages of charred cereals in addition to frequent oak charcoal. The excavators have provided the following interpretation: *'Such features are commonly found at other sites in the Low Weald, such as at the urban extension of Burgess Hill (ASE 2021) where radiocarbon dating has returned Iron Age and Roman dates for such features. However, a much longer overall date range may apply since similar 'hearth' features elsewhere (CAT 2019) have additionally provided radiocarbon dates of Anglo-Saxon and medieval date. These suggest that the activities associated were ubiquitous to woodland zones over long periods of time. Research carried out on similar features has been the subject of learned debate in the recent past in England (cf. Margetts 2018, 14-5, CAT 2018, 28-31; CAT 2019, 17-20), and on the continent (Deforce et al. 2020) and it has been suggested that they are associated with charcoal production. Other explanations have been put forward (Stevens, forthcoming), but in the absence of industrial residues, or significant assemblages of charred cereal grains, their function remains obscure.*'

4.2.33 Overall, the northern zone of Area C has a high (known) potential to contain palaeochannels, whilst the archaeological potential of the remainder of Area C is characterised as high based on the known presence of sporadic hearth pits and the curvilinear gully. However, the potential does not appear to be directly associated with intensive activity and the archaeology is of limited importance.

Area H (Brook Farm):

4.2.34 The geophysical survey of this area to the north east of Brook Farm identified a cluster of pit-like anomalies over a c. 15 m diameter area in the centre of the field (**Figure 6**). A reasonably well-defined linear feature appears to provide an eastern boundary to this activity, with a potentially similar feature on the western side. This group of features (Site 863) were considered likely to be contemporary with one another and were possibly within a sub-oval enclosure.

4.2.35 The trial trenching undertaken in 2021 comprised 15 no. trenches each 33.5m by 1.8m wide (**Figure 7**). The trenches were typically c. 0.25 m deep to the surface of the Weald Clay. Those trenches which contained features are discussed below, with feature numbers as described in the evaluation report.

4.2.36 Several poorly dated ditches were encountered. Trench 167 in the north western area included two ditches on a similar north east/south west alignment. Ditch [167/005] produced a flint piercer dated to the Bronze Age/Early Iron Age whilst no dateable finds were recovered from ditch [167/007]. These features may relate to a trackway across the landscape, although dating remains uncertain. Another undated ditch [171/005] was aligned north east/south west in northern Trench 171 whilst Trench 176 identified a gully, feature [176/005], aligned north west/south east whose fill produced a prehistoric struck flint flake, although again dating on the basis of a single artefact is not secure. Another ditch, feature [178/004] aligned north west/south east in Trench 178, was undated.

4.2.37 Trench 177 was targeted on geophysical survey anomalies within the central area of the field (Site 863). The earliest feature comprised a natural alluvium-filled 'palaeochannel' [177/012] of uncertain extent and depth. A deposit [177/016] overlaying the channel fills contained medieval pottery of late 12th or early 13th century date. The palaeochannel (or pond) was truncated by a pit [177/009] overlain by further natural palaeochannel fills, suggesting the pit had been cut into the partially silted palaeo-channel, and was subsequently sealed by further silting up of the still active channel.

4.2.38 The pit also partially truncated another pit feature [177/004] whose charcoal-rich fills produced a significant assemblage of medieval material, including 13th century pottery, a fragment of quernstone and ironworking slag. A third larger pit, feature [177/006], produced further 13th century pottery from its lower fill and 13th/early 14th century pottery from a later fill. A single sherd of residual Late Iron Age/Roman pottery was also recovered. Environmental sampling from these pits confirmed they contained *'a range of charcoal originating from local wildwood sources, with oak charcoal predominating.*'

4.2.39 Trench 172 also targeted the geophysical survey anomalies in the centre of the field. Pit [172/005] was a wide 'hollow or depression' that extended beyond the trench and contained iron

smelting waste from a bloomery furnace. Although undated within the trench, the medieval pottery associated with such material in adjacent Trench 177 suggests a broadly contemporary date for the hollow. Similar slag finds came from a north west/south east aligned ditch [172/008] whilst a further pit [172/010] also contained ironworking slag. Trench 175 produced associated post-holes [175/005] and [175/006] containing further ironworking slag suggestive of a medieval date by association.

4.2.40 Recovery of blast furnace slag from the overburden elsewhere within the evaluation fields around Brook Farm is *'indicative of the changing nature of the local iron industry after the introduction of new technology in the 1490s*' (Cleere and Crossley 1995, 111).

4.2.41 In summary therefore, the central and northern zones of Area H in particular have a high archaeological potential for medieval bloomery-related activity and possibly settlement associated with a palaeochannel or pond.

Area I (adjacent Crawley STW):

4.2.42 Area I is located to the south-east of the operational airport, and immediately to the south east of the Crawley STW. It is also immediately east of the realigned watercourse known as the Gatwick Stream. Area I falls wholly within a Red ANA (**Figure 2b**). This designation was made with regard to the identification here of a number of Iron Age cremation burials during a programme of archaeological work undertaken in advance of the establishment of a construction compound and a wheel wash facility, both required in connection with the Flood Storage (Control) Reservoir project. This project established a reduced ground level in the area immediate west of Area I and also included the realignment of the Gatwick Stream.

4.2.43 The areas of archaeological investigation carried out in connection with the Flood Storage (Control) Reservoir scheme are indicated on **Figures 8** and **9**, which also shows Area I in relation to these previous investigations.

4.2.44 Material recovered during the programme of archaeological investigation carried out in connection with the Flood Storage (Control) Reservoir scheme included a single Upper Palaeolithic long blade exhibiting some retouch and use damage. Mesolithic worked flint finds (possibly early Mesolithic) were also recovered, comprised an initial collection of 304 worked flints found during evaluation trenching (Network Archaeology, 2012) and a further 2,080 from a test-pitting exercise targeted on the recovery of work flints (Network Archaeology, 2014, 'weekly reports'). This material was recovered from many of the 49 trenches across the 11.7 hectare site, mainly from alluvium, but also in small quantities from one of the palaeochannels and from tree holes. The initial assemblage included two microliths, 19 retouched items, four single platform cores, small blades and waste flakes. At evaluation stage it was suggested that the flintwork was 'of possible national significance' as it comprised exceedingly rare in-situ flint scatters.

4.2.45 The further stages of archaeological work here comprised two phases of test-pitting within the Gatwick Stream floodplain, with 870 worked flints recovered from phase 1 and 1,190 from phase 2. The composition of this assemblage is yet to be fully reported on but distribution 'heat maps' showing areas of relative concentration are available. The flintwork was generally in 'fresh' condition *'indicating that although it may have moved up and down through the various soils on the site, and in and out of features, it had not moved far… This shows that Mesolithic peoples were actively using the landscape…not just passing through it'* (Network Archaeology, 2012, page 52).

4.2.46 As mentioned above, the programme of archaeological work carried out in connection with the Flood Storage (Control) Reservoir scheme also included examination of the land required for the construction compound and the wheel wash facility, both of which were located within Area I. The construction compound area contained a Late Iron Age urned and unurned cremation cemetery (at least nine cremation burials are indicated on an interim plan), along with field boundaries or enclosure ditches also of Iron Age date (**Figures 8** and **9**). Two possible Iron Age round-houses were identified within the wheel wash facility area along with several cremation burials. These features were located within an archaeological landscape setting of Iron Age ditches, including a drove-way and with some post-dating one of the round-houses, and with a possible enclosure to the south side (Network Archaeology, 2014). Collectively, these sites indicate a wide area of Iron Age settlement and burial activity associated with contemporary agricultural land-use along the corridor of the Gatwick Stream. Notably, a thin skim of alluvium was identified below the topsoil and above the Iron Age features in parts of these areas.

4.2.47 The geophysical survey of Area I carried out for the Project was intended to include all four small fields which make up this area, but it was not possible to survey the north eastern field (I4) due to vegetation and tipping. The south eastern field (I3) proved to be least subject to magnetic disturbance and the survey clearly identified the remnants of the former haul road (two parallel ditches – **Figure 10**, feature 14) created/operative in 2013/2014 for the Flood Storage (Control) Reservoir scheme. This haul road, along with the former construction compound, is visible on the contemporary GoogleEarth image.

4.2.48 Magnetic disturbance is greater in the north western field (I1), although this land should not have been greatly affected by the Flood Storage (Control) Reservoir scheme. There is a possible north/south aligned linear feature (**Figure 10**, feature 15) but otherwise it is possible that the interference relates to the thin layer of alluvium known to be present here. The absence of anomalies of potential archaeological interest is not considered reliable in this instance. This is because the archaeological remains previously identified within the construction compound and wheel wash facility clearly extended beyond those areas into the zones of Area I that have not been previously affected.

4.2.49 A total of 28 no. trenches each 33.5m long and 1.8m wide trenches (Trenches 1 to 28) were undertaken in Area I (ASE 2021) (**Figure 10**). Only five trenches produced archaeological features, whilst a deep modern made ground horizon was encountered in many trenches, particularly within the north western field (Sub area I1) where the probable disturbance shown by the geophysics was confirmed. The precise deposition date of the made ground is not known.

4.2.50 Elsewhere, the Weald Clay was encountered beneath topsoil and subsoil at a depth of *c*. 0.4 m. Those trenches which contained features are discussed below, with feature numbers as described in the evaluation report (ASE 2021).

4.2.51 Given the previous archaeological findings within the wheel wash excavation area in the south eastern part of the north west field (Sub area I4 on **Figure 10**) surprisingly few features were found in the adjacent area. A shallow (0.08 m deep) undated gully feature [10/004] was aligned east/west in Trench 10, whilst Trench 11, also in the north eastern area, identified a light yellowish grey soil deposit [11/005] within a probably natural 'hollow' towards the south west end of the trench. The deposit produced a single worked flint in the form of an end scraper dating from the Neolithic or Early Bronze Age. Trench 11 also identified a layer of modern made ground which replaced the topsoil for the western half of the trench, likely to have been associated with the wheel wash work.

4.2.52 Trenches 15, 16 and 20 were located within the south-eastern area (Sub area I3 on **Figure 10**) to the east of the previous identifications of Iron Age archaeology by Network Archaeology for the Flood Storage (Control) Reservoir compound (Area I2)

and south of the Iron Age activity at the wheel wash (Area I4). Trench 15 was located over the earlier works' haul road whose disturbance corridor was identified by the geophysical survey. Although the topsoil was relatively thick within the trench (at up to 0.58 m) it was found to lay directly over the undisturbed natural geology, confirming that the geophysical survey anomaly related to the topsoil layer (which is therefore presumed to have had been re-deposited following the Flood Storage (Control) Reservoir works in c. 2013). A small pit feature [15/003], 0.42 m wide and 0.22 m deep contained small undiagnostic sherds of Late Iron Age/Early Roman date. In addition, a 0.32 m wide and 0.08 m deep gully feature [15/005] aligned east/west across the trench contained two joining sherds of glauconitic pottery dating from the Middle to Late Iron Age.

4.2.53 Trench 16 to the east identified a 1.4 m wide and 0.38 m deep north/south aligned ditch feature [16/004]. The ditch produced a large quantity (134 sherds) of grog-tempered pottery dating to the 1st century AD and earlier than c. 70 AD. Trench 20 to the south of here identified a hollow feature [20/003] whose silty clay fill contained a single fragment of a prehistoric flint core. The deposit may be of natural derivation.

4.2.54 No other archaeological finds were identified, including within Trenches 27 and 28 in Sub area I2, where the archaeology had been previously investigated (and where minor ground reduction may have occurred).

5 Aims and Objectives

5.1.1 The following specific objectives for the previous evaluation stage for the Project were as follows:

- To identify the nature, character, extent and possible date of any archaeological sites and/or features within the areas subject to evaluation.
- To assess the survival, quality, condition and significance of any archaeological remains.
- To ensure the preservation by record of all archaeological remains revealed during the course of the archaeological evaluation.
- To prepare an appropriate archaeological archive including the treatment and preservation of any artefacts.

5.1.2 These aims were realised with the result that Area B, Area H, and the site of the proposed Water Treatment Works (WTW) for the Project at Area I were identified as areas of archaeological interest with ditches, pits and a possible cremation feature identified, whilst the possibility of palaeochannels at Car Park X was previously identified by desk-based work. Further archaeological work is proposed within these areas, as set out in Section 6 below.

5.1.3 A detailed description of the establishment and development of Gatwick Airport is provided in in **ES Appendix 7.6.1: Historic Environment Baseline Report** [APP-101]. Further information is provided within **The Historical Development of Gatwick Airport including a Review of the Extent of Past Ground Disturbance** [REP6-070]. Much of the modern airport was established following a major programme of expansion in the mid-20th century. An initial stage was completed in 1957 including a terminal building, operations block and centre pier, with a second stage completed in 1965 seeing the addition of the north and south piers.

5.1.4 One of the buildings constructed as part of the first stage of mid-20th expansion was the control tower, designed by the modernist architect firm of Yorke Rosenburg and Mardell who were responsible for many of the airport buildings within that stage. This control tower remains present within the western part of the airport but is no longer in use, having been replaced by a taller structure further to the east which opened in 1984.

5.1.5 The works required for the Project include the demolition of the 1957 control tower. It is not designated at a national or even a local level with regard to its historic significance, however it has some heritage values as a result of the link to a well-known firm of architects and its status as a remaining part of the mid-20th century expansion of the airport. Prior to demolition the 1957 control tower will be subject to a programme of historic building recording as set out in Section 6 below.

5.1.6 The overall aim of the currently proposed programme of archaeological fieldwork and is historic building recording to offset the impacts of the Project on heritage assets via preservation by record and dissemination of the results in accordance with the Sussex Standards (East Sussex County Council *et al*., 2019). The archaeological fieldwork will provide further detailed information regarding the form, nature and date of archaeological remains within/adjacent to the areas subject to evaluation in 2021 or within areas of potential paleoenvironmental interest, resulting in an addition to local archaeological and regional knowledge.

5.1.7 The following areas where further archaeological investigations are considered to be appropriate in terms of offsetting the impacts of the Project have been identified:

- Area B (Museum Field) – impacts will occur as a result of the ground reduction here for flood attenuation;
- Area H (Brook Farm) – impacts could occur as a result of landscaping and planting for the establishment of an area of environmental mitigation;
- Area I adjacent to the Crawley STW - impacts could occur as a result of the construction of a new Water Treatment Works (WTW);
- Car Park X – potential impacts to buried archaeological remains and former palaeochannels of the River Mole (if present) as a result of ground reduction to create a water storage facility; and
- The on-airport WWTW within the existing Self Park North car park.

5.1.8 The design of these archaeological investigations is set out in Section 6 below.

5.1.9 An updated South East Research Framework (SERF) is currently being prepared and this will establish the regional historic environment research agenda for the area within which the Project is located. Draft chapters for the research agenda have been subject to consultation but not yet published in final form. The programme of archaeological investigations undertaken in connection with the Project may produce results which could contribute to several of the themes and issues identified within the draft research agenda.

5.1.10 The following further aims can now be added with regard to the post-consent investigations:

5.2 Area B (Museum Field) - Figures 5 and 7

- Despite the absence of Neolithic or Bronze Age activity identified from the evaluation within Area B, are any such features present within the Area B investigation area and if so what form/s of activity do they represent?
- Do the ditches identified through geophysical survey and sampled during the trial trenching reflect the presence of Late Iron Age to Roman landscape and in particular at the eastern edge, of livestock related or settlement related enclosures?
- Is the wide area of archaeological activity at Area B reflective of chronological development through the later Iron Age to the Roman period?

- Does the single suspected Late Iron Age cremation burial at Area B represent an isolated example or is it part of a more extensive cemetery?
- Are later periods of archaeological activity (Saxon, medieval and post-medieval) represented at Area B, including in the form of former field boundaries?
- Are burnt hearth pits as recorded within Area C also present in Area B, and if so can their function be determined and can they be dated?
- Can the archaeological remains within Area B make a contribution to local and regional archaeological research priorities forthcoming within the SERF?

5.3 Area H (Brook Farm) - Figures 5 and 7

- What is the nature and date of the potentially prehistoric ditches within Area H and can elements of landscape such as the postulated trackway be elucidated?
- Does the bloomery evidence relate to a specialist medieval iron-working site and is there evidence of furnaces?
- Does the associated medieval pottery recovered from the evaluation attest to occupation at Area H itself or from an nearby area beyond the Project site boundary?
- Are the alluvium-filled features found during the evaluation trenching associated with a hammer pond or are they palaeochannels of Man's Brook that have been used to deposit contemporary waste from the bloomery and from possible occupation areas?

5.4 Area I (adjacent to Crawley STW) - Figures 5 and 10

- Does the Late Iron Age occupation and burial evidence found within and adjacent to Area I extend more widely within the WTW zones proposed for the constructed wetland (reed bed) system as set out in the **Change Application Report** [AS-139]?

5.5 Car Park X - Figures 5 and 11)

- Does Car Park X extend across overbank flood deposits and/or palaeochannels associated with the former courses of the River Mole?
- If such remains are present, can the subsurface topography be understood via geoarchaeological recording of sample machine slots and can column samples extracted be scientifically dated and analysed to contribute to an understanding of prehistoric and/or later landscapes and human land uses?
- Are any archaeological remains present cut into the basal geology or sealed within alluvium or peat deposits and if so, following investigation and recording, can these findings contribute to local or regional research priorities as set out in the SERF?

5.6 Proposed On-airport Wastewater Treatment Works (WWTW) – Figures 12 and 13

- Is there evidence for Bronze Age or later archaeology extending eastwards from the 'Gatwick Airport NW Zone' excavation area (Wells et al., 2005) to the location of the proposed On-airport Wastewater Treatment Works in the existing Self Park North car park?; and
- If present what is the extent and significance of the remains with reference to development of a suitable mitigation by avoidance strategy?

6 The further archaeological investigations and historic building recording

6.1.1 As noted in Section 5 above, a total of four locations within the Project site boundary and within Crawley Borough (West Sussex) have been identified areas where works required for the Project could result in physical impacts on buried archaeological remains or deposits of geoarchaeological interest. One building within the airport would be the subject of a programme of historic building recording ahead of demolition.

6.2 Area B (Museum Field)

6.2.1 Much of the eastern part of Museum Field will be reduced by up to 2m depth to provide flood attenuation capacity. The detailed design is not yet available. It is proposed that a c. 4.99 hectare area of land within the eastern area of Museum Field is investigated via Strip, Map and Sample (SMS) excavation procedures as set out below. The extent of the SMS area is indicated on **Figure 7**. The investigation area has been defined such that it includes the potential enclosure and trackway identified through geophysical survey and trial trenching along with the cremation burial and the associated landscape context. The extent of the proposed SMS excavation area will be reviewed following the development of the detailed design for the flood attenuation basin at this location.

6.3 Area H (Brook Farm)

6.3.1 The detailed design of the environmental mitigation measures at this location has not yet been prepared, but an area of SMS excavation has been defined here as indicated on **Figure 7**. This SMA excavation area measures c. 1.04 hectares and is centred on the medieval bloomery evidence (comprising medieval slag and pottery deposited within alluvium-filled ponds or palaeochannels) and also includes the possible prehistoric trackway to the north.

6.4 Area I (adjacent to existing Crawley STW)

6.4.1 The eastern zone of Area I is required for the proposed water treatment works to treat de-icer contaminated rainwater run-off and discharge from the existing pollution storage lagoons, as set out in the **Change Application Report** [AS-139]. The proposed 'constructed wetland (reed bed) system' requires an area of approximately 16,000 m² (two rectangular areas for the northern and southern reed beds). Provision of an additional temporary construction compound up to 5,000 m² (0.5 hectares) would be provided in the north-western zone of Area I (an area of previously imposed made ground). The land identified for the reed beds is indicated on **Figure 10** and comprises the two southernmost areas of proposed SMS excavation. As shown on **Figure 9** and discussed in section 4.1.42 to 4.2.54 above, part of the proposed reed beds area (between Area I sub areas I3 and I4) was previously investigated (Network Archaeology 2014) as part of the Flood Storage (Control) Reservoir Wheel Wash Area Excavation. The areas that would be affected by ground reduction for the two reed beds fall within Area I sub-areas I3 and I4. Both areas have been subject to archaeological geophysical survey and trial trenching in connection with the Project and are within a Red ANA. Examination of historic maps and aerial imagery indicates that an area of land to the north of the proposed reed beds was the location of a house and associated outbuildings which were built during the period 1896 - 1912 and which remained in place during construction of the STW before being demolished at some point between 2018 - 2020.

6.4.2 The archaeological investigation will comprise SMS excavation of all areas required for the proposed 'constructed wetland (reed bed) system' that would be subject to ground reduction and physical impacts during construction. The extent of the SMS excavation will cover the locations of the two proposed reed beds, along with the northern area if any foundation removal (and associated ground impact) is required in that area, and will be agreed in advance with the archaeological advisor to CBC. As the

construction compound will be built over made ground, as indicated by the archaeological trenching undertaken for the Project, no further archaeological work is necessary there.

6.5 Car Park X

6.5.1 The detailed design of the flood compensation area at Car Park X is not yet available but it is assumed that the entire area of the existing surface car park (shown on **Figure 11**) will be subject to ground reduction by up to 2 m. The removal of the current hardstanding and sub-base material will be carried out under archaeological supervision.

6.5.2 In the event of the identification of palaeochannels or other deposits of geoarchaeological potential, a specialist geoarchaeologist will examine the site. A suitable programme of sampling, recording and reporting will then be agreed with the archaeological advisor to CBC (and, if necessary, the appropriate Science Adviser at Historic England).

6.6 On-airport Wastewater Treatment Works (WWTW) (Self Park North car park - Project Change 4)

6.6.1 A potential revision to the wastewater strategy is to provide an on-airport WWTW facility, located within the existing Self Park North car park. This is an 'alternative' option in the DCO, were the Secretary of State minded to include a pre-commencement restriction in the DCO limiting airport growth arising from the Project until modelled wastewater flows and any necessary upgrade works had been agreed with Thames Water Utilities Limited.

6.6.2 The area of the on-airport WWTW is located to the east of the Framework Archaeology archaeological excavation (Wells *et al*., 2005) which encountered Bronze Age occupation evidence on the edge of the River Mole floodplain and which was associated with a landscape boundary ditch, The area of the proposed on-airport WWTW was not investigated as part of that archaeological project.

6.6.3 The on-airport WWTW facility would require a footprint of approximately 2.2 hectares. The facility would include the following physical elements, some of which could require impacts to a depth of up to 2 m below ground level:

- Headworks (the entry point for raw wastewater);
- Two circular primary clarifiers, each of approximately 12m in diameter;
- Two aeration basins, each with secondary clarifiers;
- Gravity thickeners;
- Biotower (odour control facility);
- Rotary drum thickeners, belt filter presses and tertiary disk filter facilities, each housed in a dedicated building;
- Blower building accommodating 4 blowers;
- Chemical storage building;
- Associated pipelines and pumping stations;
- Flocculation tank and a rapid mix tank;
- Sludge blend facility and sludge storage area;
- Operations and maintenance building (up to 2-storeys);
- Truck loading area; and
- Outfall from the facility to the River Mole, involving a concrete structure beside the River Mole.

6.6.4 The physical elements within the on-airport WWTW facility are shown on an indicative layout in **Figure 2** of the **Second Change Application Report** [REP6-072].

6.6.5 The archaeological investigation will comprise a 5% by area archaeological trial trenching evaluation equating to 20 no. trenches measuring 30 m by 1.8 m and one trench measuring 11 m by 1.8 m. An indicative trench layout is presented on **Figures 12** and **13**, but detailed advance examination of records relating to buried services may results in changes to the layout. In these circumstances the quantum of trenching will remain unchanged.

6.7 The former air traffic control tower

6.7.1 This structure will be the subject of a programme of historic building recording undertaken prior to demolition.

7 Methodology

7.1 Introduction

7.1.1 As described above, a total of five areas have been identified as requiring further archaeological investigation and one structure has been identified as requiring pre-demolition historic building recording.

7.1.2 All elements of the programme of further archaeological investigation and historic building recording (fieldwork, reporting, publication and archive preparation/deposition) will be undertaken by a suitably experienced archaeological contractor. The contractor will be a Registered Organisation (RO) with the Chartered Institute for Archaeologists (CIfA), and the identity of the appointed contractor will be notified to the archaeological advisor to CBC in advance of the commencement of the fieldwork.

7.1.3 The archaeologists employed by the archaeological contractor will follow the CIfA Code of Conduct (CIfA, 2019) at all times. The archaeologist in charge of the fieldwork will be a full Member or Associate member of CIfA (ie MCIfA or ACIfA).

7.1.4 The archaeological contractor will be appointed by, and monitored by, RPS on behalf of GAL.

7.1.5 Additional monitoring will be carried out by the archaeological advisor to CBC. A programme of monitoring will be agreed between RPS, GAL and the archaeological advisor to CBC ahead of commencement of any piece of fieldwork. The programme of monitoring will remain flexible and will be adjusted accordingly as the fieldwork progresses. Any adjustments will be recorded in writing prior to implementation.

7.1.6 Access for the fieldwork, and for the programme of monitoring, will be arranged by GAL and their appointed agents.

7.1.7 All archaeological work will be carried out in accordance with this WSI along with the appropriate standards and guidance (CIfA, 2014a; East Sussex County Council et al., 2019).

7.1.8 All relevant health and safety legislation and guidance will be adhered to. A detailed Risk Assessment and Method Statement (RAMS) will be prepared by the archaeological contractor. This RAMS will be submitted to, and agreed by, GAL or their appointed Principal Contractor ahead of the commencement of any fieldwork.

7.2 Fieldwork

Generic

7.2.1 All work will be undertaken to CIfA Standards and Guidance for:

- Archaeological Excavation
- Archaeological Evaluation

7.2.2 The SMS excavation areas have been designed to avoid known buried services. However, appropriate service plans will be obtained prior to the commencement of any fieldwork. The SMS excavation areas will also be scanned prior to excavation using appropriate cable tracing equipment. If services or potential services are identified through scanning or during subsequent site stripping they will be treated as "live".

7.2.3 The SMS excavation areas and the trial trenches will be machine-stripped to the level of the highest archaeologically significant layer or in the absence of such layers, to the level of the undisturbed natural geology. This will be undertaken using mechanical excavators equipped with toothless buckets and operating under archaeological supervision. The stripped material will be loaded into dumpers for removal to a suitable storage area or placed at a safe distance from the edge of the SMS excavation area. Topsoil and subsoil will be kept separate. No plant will be allowed to cross the stripped surface.

7.2.4 The exposed surface of the natural geology will be hand-cleaned sufficiently where necessary to define any archaeological features present. Following the stripping of each SMS excavation area and mapping of the archaeological features the archaeological contractor will provide a pre-excavation digital plan of the area showing the location and extent of all features. This plan will form the basis of a site meeting with RPS, the archaeological advisor to CBC and the archaeological contractor in order to determine the appropriate level of detailed recording.

7.2.5 To facilitate the archaeological investigation a rolling programme of archaeological recording may be required. Thus, archaeological works will follow the stripping programme, and will be completed and signed off prior to any further construction works in those areas. If needed, the site will be broken up into areas such that these can be completed sequentially (in line with the pinch points in the construction programme) and approved progressively by the archaeological advisor to CBC to allow subsequent construction works within those areas.

7.2.6 Machine excavation will also be utilised where acceptable to investigate large ditch features. This will only be undertaken to supplement hand excavation and will not target complex situations such as intersections or feature relationships that have not otherwise been fully understood. The main aim of machine excavation will be to confirm ditch profiles and sequences and to recover additional artefacts. Machine excavation of features will be discussed with and agreed by the archaeological advisor to CBC prior to implementing on site.

7.2.7 On completion of any SMS excavation, the site will be 'signed off' by the archaeological advisor to CBC and will be handed over to the construction team. The archaeological contractor will not demobilise from any area of archaeological works until the area has been approved as completed by the archaeological advisor to CBC.

7.2.8 It is currently anticipated that the SMS excavation areas will be left open following completion of the hand excavation and sign off by the archaeological advisor to CBC but that any slots deeper than 0.5m will be made safe by machine filling.

7.2.9 Unless otherwise notified, the archaeological contractor will not be responsible for the replacement of subsoil and topsoil within SMS excavation areas. Deeper area of excavation may be infilled for safety purposes.

7.2.10 The site grid and all excavation areas will be accurately surveyed using a Total Station or similar and will be related to the National Grid. The SMS excavation areas will be accurately located on the site plan.

7.2.11 A series of Temporary Bench Marks (TBMs) will be surveyed as necessary in relation to an Ordnance Survey Bench Mark (OSBM). The location of the bench marks and the TBMs will be recorded on the site plans. Plans and sections will be related to their height above Ordnance Datum.

7.2.12 Complex areas (areas of intercutting features, surviving layers, where features are complex in form or where surface finds may be plotted) will be planned by hand, usually at a scale of 1:20. These plans will be located via total station, scanned, vectorised and imported via the archaeological contractor's CAD programme on the OS grid-based plan. Less complex areas of the site (where features are absent or rare and of simple form) will be planned using a Total Station with the data input directly onto CAD and the Ordnance Survey (OS) tiles. There will be no site grid on the ground. All site plans will show OS grid points and spot levels and will be fully indexed and related to adjacent plans. It is not anticipated that single context recording will be appropriate. However, should particularly complex sequences of deposits or features be encountered, then single context recording will be undertaken. A uniform site plan will be produced showing all site features.

7.2.13 All archaeological features and deposits will be excavated by hand (except for large ditches where some machine excavation may be undertaken as described above). All discrete pits and post-holes will be half-sectioned (50% sample) as a minimum. A representative selection of 'natural' tree throws will be investigated. Between 5% and 10% of the length of former field ditches/gullies will be excavated (1 m long slots will be excavated within individual trenches for the on-airport WWTW). Where more substantial ditches of livestock or settlement enclosures are exposed, these will be sample excavated at up to 10% by length. Slots across linear features will be at least 1 m in width.

7.2.14 Any identified structures will be excavated and the precise methodology for their investigation will be pre-agreed with the archaeological advisor to CBC following exposure and cleaning in plan. All structural post-holes will normally be half-sectioned whilst gullies and beam slots will be sampled excavated to a percentage to be agreed with the archaeological advisor to CBC (but including terminals and at least once segment of the rear of ring-gullies as a minimum). For the trenching at the on-airport WWTW site, sufficient investigation will be conducted to inform the function and significance of structures (to be agreed with the archaeological advisor to CBC) but full excavation would not be applied at the evaluation stage.

7.2.15 All features and deposits will be photographed using a digital camera. A scale and north arrow will be included in the photographs. Contractors will be expected to liaise with the archive repository over their photographic requirements before fieldwork starts. A full digital photographic record of the investigations will be prepared illustrating in both detail and general context the principal features and finds discovered. The photographic record will also include 'working shots' to illustrate more generally the nature of the archaeological investigation.

7.2.16 All finds will be bagged and labelled with their relevant context number for washing and processing.

7.2.17 A 'Harris Matrix' stratification diagram will be used to record stratigraphic relationships. This record will be compiled and fully checked during the course of the evaluation. Spot dating should be incorporated where applicable during the course of the works.

Environmental Sampling

7.2.18 Environmental sampling strategies will be developed by the archaeological contractor in consultation with RPS and the archaeological advisor to CBC. Preparation, taking, processing and assessment of environmental samples will be in accordance with guidance provided by Historic England.

7.2.19 The sampling strategy and methodology will generally be as follows:

- All collected samples will be labelled with context numbers and sequential sample numbers.
- Appropriate contexts will be bulk sampled for the recovery of carbonised plant remains and insects. Assemblages of charred

crop remains are of particular importance and will be used to provide data in addition to the associated weed flora on agricultural activities, the economy of the site and its relationship to the natural drainage system.

- If occupation surfaces are encountered, spatially controlled collection of environmental bulk samples may be taken to aid evaluation procedures. Spatial co-ordinates will be recorded for all samples, and the sampling grid related to the site grid and Ordnance Survey grid. Assessment of spatial information should be undertaken to enable the degree of resolution to be defined following appropriate consultation.
- Environmental samples will be taken where organic remains survive in well-stratified, datable deposits. Bulk samples (40 litres or the whole context dependent upon size) will be taken for wet sieving and flotation where there is clear indication of good analytical potential and dating evidence for such material. Where there is potential for spatial variation in the distribution of such remains, the sampling strategy will include a percentage sample of each feature/deposit type, distributed throughout the excavation area, sufficient to ensure that such variation is detected.
- Bulk samples may be taken, if appropriate, from significant datable waterlogged deposits for insects and macroscopic plant remains.
- Sub-samples or monolith samples of waterlogged deposits and sealed buried soils with potential for pollen preservation will be taken for assessment if appropriate and columns of such samples will be taken through deposits where there is clear potential for recovering a datable sequence of environmental information.
- Recovery of small animal bones, bird bone and large molluscs will normally be achieved through processing other bulk samples, or 30 litre samples may be taken specifically to sample particularly rich deposits.
- Undisturbed kubiena tin or column samples of sediments will be taken for micro-morphology of buried soils where these are likely to shed light on the environmental development of the area.
- Where suitable deposit sequences are encountered (normally waterlogged deposits with high palaeoenvironmental potential, in association with archaeological material), purposive radiocarbon sampling will be carried out at an appropriate interval.
- If samples are taken, a pilot study will be undertaken as an initial stage of environmental processing. This will enable an assessment of which groups of samples are likely to be most productive for complete processing and further study.

Treatment of Finds

7.2.20 All finds will be treated in a proper manner and to standards agreed in advance with the recipient museum. They will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with best professional practice.

7.2.21 Spot dating should be incorporated where applicable during the course of the works.

Human Remains (evaluation)

7.2.22 Human remains over 100 years old will be 100% excavated after obtaining the relevant Ministry of Justice Licence, as required by the Burials Act of 1857 (amended 1981). The **Draft Development Consent Order** (Doc Ref. 2.1) sets out the process that will be followed in relation to human remains under 100 years old. Suitable treatment of any human remains encountered within the trial trenches at the on-airport WTTW will be agreed as necessary (following identification in trenches) with the archaeological advisor to CBC.

Treasure Act or Potential Treasure

7.2.23 All finds of gold and silver will be recorded, removed to a safe place and reported to the Coroner in accordance with the Treasure Act 1996, updated by The Treasure (Designation) Order 2002. Where retrieval cannot be effected the same day, appropriate security measures will be put in place to safeguard the finds.

Finds and Environmental Specialists

7.2.24 Appropriate specialist staff will be used depending on the type of artefacts and soil samples recovered during the course of the fieldwork. The archaeological contractor will provide details of specialists on request.

Health & Safety

7.2.25 The archaeology contractor will provide a Risk Assessment and Method Statement (RAMS) prior to the commencement of the works. This will be submitted to the Principal Contractor and/or the Principal Designer for their approval.

7.2.26 No personnel will work in deep or unsupported excavations. The sides of all excavations deeper than 1.2 m or less if the ground is considered by a competent person to be unstable will be stepped or battered. Due to the difficulty of working in shored trenches, shoring will be avoided wherever possible. All deep trenches shall be fenced off and will be clearly indicated by “deep excavation” signs.

7.2.27 The archaeologist(s) will not enter an area under machine excavation without alerting the machine driver to his/her intention and will wait in a safe location until the machine driver has acknowledged their presence with a thumbs up.

7.2.28 The archaeologist(s) will remain alert and take due care not to impede the progress of moving machinery. He/she will stand well back from the turning circle of an excavator’ buckets and cabs.

7.2.29 Spoil will be stored at a safe distance away from excavation edges and at a safe height.

7.2.30 Suitable accommodation and welfare will be provided for staff to shelter from inclement weather and during breaks. Hand washing facilities and welfare will be provided.

7.2.31 All staff and visitors to the site will be expected to wear full Personal Protective Equipment (PPE) at all times.

Ecological Issues

7.2.32 GAL will provide all necessary updated ecological constraints information to RPS and the archaeological contractor, including ecological avoidance areas or areas in which ecological input is required (eg. under newt licence arrangements).

Historic Building Recording

7.2.33 A programme of historic building recording will be undertaken prior to the demolition of the former air traffic control tower. This will be to Level 3 as set out in the Historic England guidance document *Understanding Historic Buildings: A Guide to Good Recording Practice* (May 2016) and will include photographs of the exterior and interior of the structure as well as the preparation of a descriptive text. Existing drawings of the building will be collated and discussed, and new measured plans (to scale) will be prepared in the absence of any existing ones. Examination will be made of the Collections of the Royal Institute of British Architects (RIBA) as some drawings from the architectural firm of Yorke Rosenburg and Mardell have been deposited within the Collections.

8 Reporting

8.1 Assessment and Updated Project Design (UPD)

8.1.1 An assessment report, containing an Updated Project Design (UPD), will be produced within 12 months of completion of all fieldwork. This will comprise an integrated and illustrated site narrative and specialist assessment reports that will outline the requirements for the final publication of the project. A detailed timetable and format summary for the final publication will be included in the assessment report.

8.1.2 A draft copy of the assessment report will be issued to RPS and the archaeological advisor to CBC for comment prior to the issue of the final version. The final version of the assessment report will be issued once the content has been approved by the archaeological advisor to CBC.

8.1.3 Expert advice and reporting (in relation to cultural artefacts and ecofacts) will be provided by individual specialists as appropriate.

8.1.4 The assessment report will include, as a minimum:

- A front sheet (setting out the project/site name, National Grid References to minimum eight figures, description of task(s) undertaken, date and duration of the fieldwork, site code/number).
- A non-technical summary of the work including the results.
- Identity of the organisation and individuals carrying out the work (in particular the names of the project director, site supervisor and any specialists).
- A general introduction to the Project.
- Aims and objectives.
- Methodologies employed to undertake the works.
- Descriptive text presenting the results of the work including finds and environmental data where appropriate.
- Quantifications of the finds recovered and environmental samples taken.
- Interpretation and discussion of the results.
- Assessment of the significance of any cultural heritage and archaeological remains identified.
- Assessment of the potential of any data for further analysis (ie Updated Project Design).
- Proposals for publication of the further analysis in an appropriate format.
- Details of the scale, nature and location of the archive and the intended place of deposition.
- Report bibliography.
- Sufficient illustrations to support the text including figures to show the location of the scheme in a regional and local context, locations of all works undertaken, detailed plans and sections as appropriate.
- An appendix comprising a table of detailed information presented on a trench by trench basis, information to include description and depth of each recorded deposit.

8.1.5 The assessment report will also include an Updated Project Design (UPD) clearly stating the potential of each category of data to contribute to the existing project aims, identification of new project aims as a result of findings and recommendations for the detailed analysis including required staff/resource quantifications.

8.2 Analysis and Publication

8.2.1 For projects which have produced results of significant county, regional or national importance, an illustrated final report suitable for publication in an approved archaeological journal (the archaeology contractors' in-house monograph collection or the Sussex Archaeological Collections (SAC)) should be provided to the archaeological advisor to CBC within two years of the completion of fieldwork (unless a longer time period has been agreed in the UPD). The overall content of the report should be agreed with the archaeological advisor to CBC.

8.2.2 The report should clearly reference all archaeological work on the Project such as evaluation, excavation, watching briefs, background research including aerial photography etc, in order that a coherent picture may be presented. It should place each archaeological site in its local archaeological, historical and topographical context and include a clear location map. Each plan included should clearly relate to some other included plan of an appropriate scale and should normally include national grid references. The final version of the report will be issued once the content has been approved by the archaeological advisor to CBC.

8.2.3 One bound copy of the final publication and a digital copy, in pdf format, must be supplied to the West Sussex HER. A further copy should accompany the archive. A copy of any specialist reports relating to the work should also be supplied to the archaeological advisor to CBC.

8.2.4 A separate report for publication on a suitable journal may be prepared with regard to the programme of historic building recording.

8.2.5 A publication grant should be provided to the publishers of the report in accordance with their requirements.

8.2.6 Copies of the reports will be provided to the Historic England Archive within 12 months of the completion of the fieldwork, unless a revised timescale is agreed in writing with the archaeological advisor to CBC.

8.2.7 A copy of the report will be placed in the overarching project archive, for eventual deposition with the relevant recipient archive storage facility.

8.2.8 The information regarding the results of the programme of archaeological investigations will be entered onto the relevant Online Access to the Index of Archaeological Investigations (OASIS) form and submitted to the OASIS database by the archaeological contractor. Electronic copies of any reports generated will be attached to the form.

8.2.9 The involvement of GAL, RPS and the archaeological advisor to CBC will be acknowledged in any report or publication generated by the programme of archaeological work associated with the Project.

8.2.10 Any variation or modification to the methodology (including the reporting) will be fully discussed in advance and agreed by GAL, RPS, the archaeological advisor to CBC and the archaeological contractor.

8.2.11 Copyright of all reports prepared by the archaeological contractor will be retained by the archaeological contractor under the terms of the Copyright, Designs and Patents Act (1988) with all rights reserved, excepting that the archaeological contractor provides an exclusive licence to GAL for the use of the reports in all matters relating to the Project and to the local planning authority with regard to the provision of planning advice and public awareness of the historic environment.

8.3 Trial Trenching Reporting (on-airport WWTW)

8.3.1 The trial trenching will be reported on by the archaeological contractor within 4-6 weeks of completion of the fieldwork and will be in accordance with CIfA Standards and Guidance for:

- Archaeological Evaluation.

8.3.2 Any further archaeological work which may be required at the location of the proposed on-airport WWTW will be undertaken in line with a site-specific WSI that will be approved in advance with the archaeological advisor to CBC.

9 Archive Deposition

9.1.1 The project archive consists of the records relating to the programme of archaeological work, including written records, photographs, drawings and artefacts. The archaeological contractor will ensure that the archive is fully catalogued, indexed, cross-referenced and checked for consistency.

9.1.2 The artefacts will be prepared in accordance with procedures outlined in relevant standards and guidance documents (cf. CIfA 2014c; MGC 1992; UKIC 1984) and any procedures adopted by the recipient museum.

9.1.3 The retained artefacts remain the property of the landowner with the exception of human remains and any artefacts that fall within the remit of the Treasure Act 1996. Subject to obtaining written consent from the landowner, the artefacts will be deposited along with the rest of the archive. Arrangements for the finds to be viewed by the landowner will be made on request.

9.1.4 No recovered finds will be discarded without the written consent of the recipient body. Selection and retention policy will be guided by the relevant standards and guidance documents (cf. CIfA 2014c, SMA 1993).

9.1.5 Account must also be taken of the requirements of the place of deposition regarding the conservation, ordering, organisation, labelling, marking and storage of excavated material and the archive accession number.

9.1.6 Prior to the deposition of the artefacts with the recipient Museum the following procedures will have been completed:

- Notification of the fieldwork and approximate quantity of finds will be given to the museum ahead of the fieldwork by the archaeological contractor.
- Where possible the site code/accession number and context number shall be marked on all finds.
- All finds packaging, including boxes and bags will be clearly marked with the assigned accession number.
- Transfer of ownership from will be agreed in principle prior to the fieldwork and a written transfer of ownership form will be forwarded to the museum ahead of deposition. Any other finds remain the landowners to assess and dispose of.
- The archive will be deposited complete and will include a full index of contents.
- Discard or non-retention of certain artefacts of low academic value will be in accordance with SMA (1993, revised 1997).

9.1.7 Further guidelines and requirements of the museum for the acceptance of finds and archive as outlined in the recipient Museum's procedures for the deposit of archaeological archives will be adhered to.

9.1.8 A project's archive comprises every record relating to that project, from written records and illustrative material to the retained artefacts.

9.1.9 Digital archives must be prepared according to local requirements.

9.1.10 The archaeology contractor's project manager will ensure that every element of the archive is kept clean and secure, and that it is stored in a suitable environment.

9.1.11 The archive comprising written, drawn, photographic and electronic media, will be fully catalogued, indexed, cross referenced and checked for archival consistency.

9.1.12 RPS will be responsible for monitoring progress and standards throughout the project, and will be kept regularly informed during fieldwork, post-excavation and publication stages by the archaeological contractor.

10 Public Outreach

10.1.1 A programme of public outreach relating to the programme of archaeological work will be developed and implemented following commencement to share the findings of the ongoing archaeological investigations. Potential measures for inclusion within this programme include:

- Provision of permanent information boards within the Museum Field Environmental Mitigation Area.
- Public access to, and participation in, the archaeological investigations at Museum Field Environmental Mitigation Area.
- Organised visits from local schools and interest groups to the archaeological investigations at Museum Field Environmental Mitigation Area.
- Provision of temporary information displays at suitable locations such as Crawley Library.
- Presentation of information on appropriate websites.
- Presentation of information through public lectures and talks.

10.1.2 GAL already maintains contacts with a wide range of local organisations and schools, and the relevant contacts will be advised of the potential outreach opportunities.

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Figures

LONDON GATWICK

Legend

Project Site Boundary

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Site Location

DATE

August 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 1	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:20,000

0 250 500 1,000 m

N:\25000-25999\25434 - Gatwick\Figures\Mapping\GIS\Projects\new template\Figure 1.mxd

LONDON GATWICK

Legend

- Project Site Boundary
- Staff Car Park B

Artificial

- Made Ground - Artificial Deposit

Superficial

- Alluvium - Clay, silt, sand and gravel
- Head - Clay, silt, sand and gravel
- River Terrace Deposits (Undifferentiated) - Sand and gravel
- River Terrace Deposits, 1 (Mole) - Sand and gravel
- River Terrace Deposits, 2 (Mole) - Sand and gravel

Bedrock

- Weald Clay Formation - Clay-ironstone
- Weald Clay Formation - Mudstone
- Upper Tunbridge Wells Sand - Mudstone
- Upper Tunbridge Wells Sand - Sandstone and mudstone
- Upper Tunbridge Wells Sand - Sandstone and siltstone, interbedded

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Geology Map

DATE

August 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 2a	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:20,000

0 250 500 1,000 m

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LONDON GATWICK

Legend

- Project Site Boundary
- 1km buffer from Project Site Boundary
- Locally Listed Building
- Area of High Archaeological Potential (Surrey)
- County Site of Archaeological Interest (Surrey)
- Amber Archaeological Notification Area (West Sussex)
- Red Archaeological Notification Area (West Sussex)
- HER Feature
- HER Event
- NMR Record
- Other Building
- Geophysical Anomaly

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Non-designated Heritage Assets within 1 km of the Project Site Boundary

DATE

August 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 2b	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:25,000

0 250 500 1,000 m

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LONDON GATWICK

Legend

- Project Site Boundary
- Archaeological & Geo-archaeological Test Pits (2001)
- Archaeological Trench / Excavation
- Previous Archaeological Works

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

The Gatwick North West Zone Archaeological Results

DATE

July 2023

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 3	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:5,000

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N:\25000-25999\25434 - Gatwick\Figures\Mapping\GIS\Projects\new template\NWZ zone.mxd

LONDON GATWICK

Legend

- Project Site Boundary
- Red line boundary
- Proposed development
- New evaluation trench
- Previous evaluation/excavation
- Archaeological feature
- Area of made ground
- Intervention
- Late Bronze Age
- Medieval
- Undated

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

The Gatwick North West Zone
Archaeological Results - Details

DATE

July 2023

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 4	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

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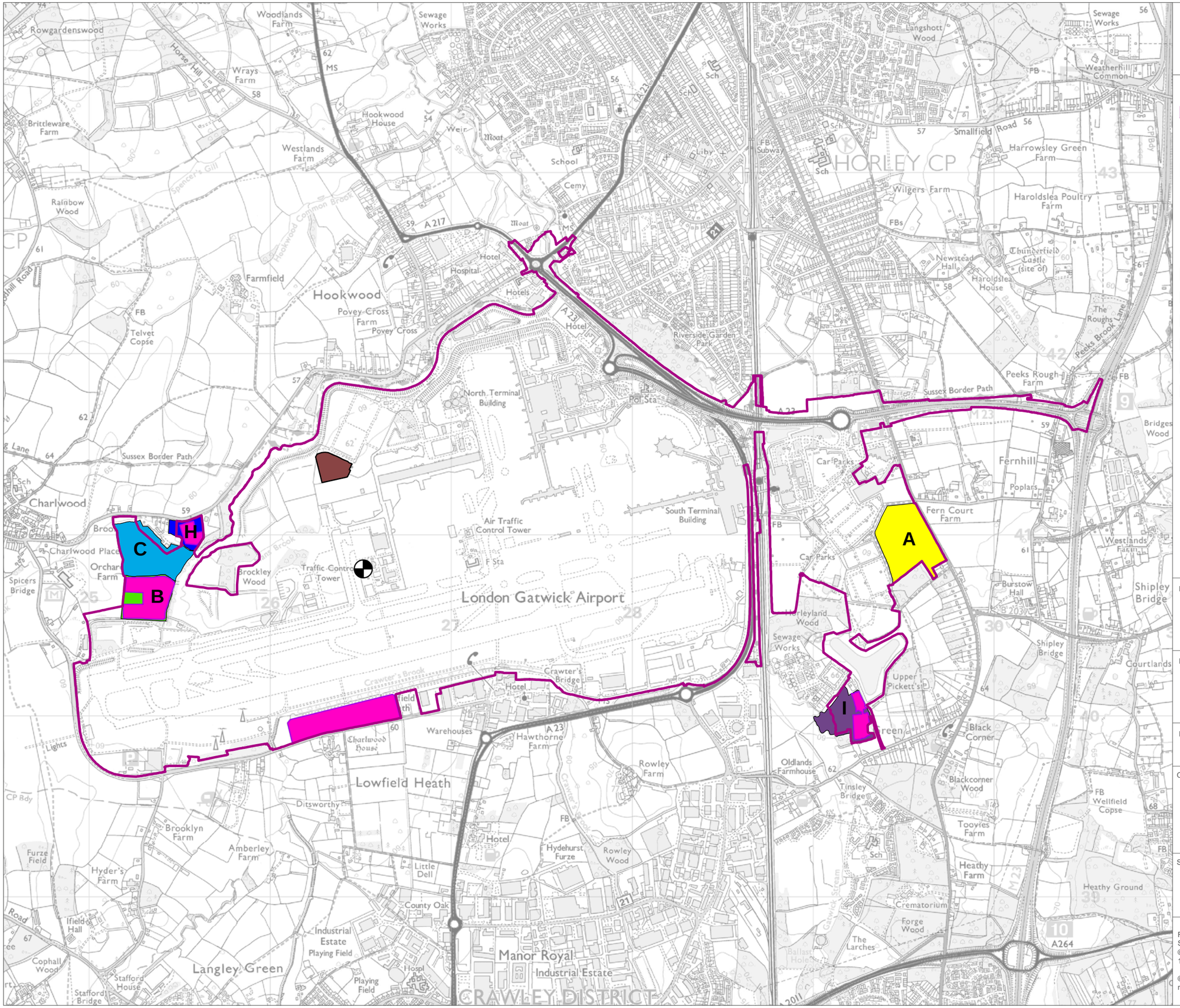

LONDON GATWICK

Legend

- Project Site Boundary
- Traffic Control Tower
- Wastewater Treatment Works
- Proposed SMS / Offsetting Investigation Areas

Geophysics and Trial Trenching Areas

- Area A
- Area B
- Area C
- Area G
- Area H
- Area I

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Proposed SMS, and Former Air Traffic Control Tower Historic Building Recording, within West Sussex Project Areas

DATE

August 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 5	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:20,000

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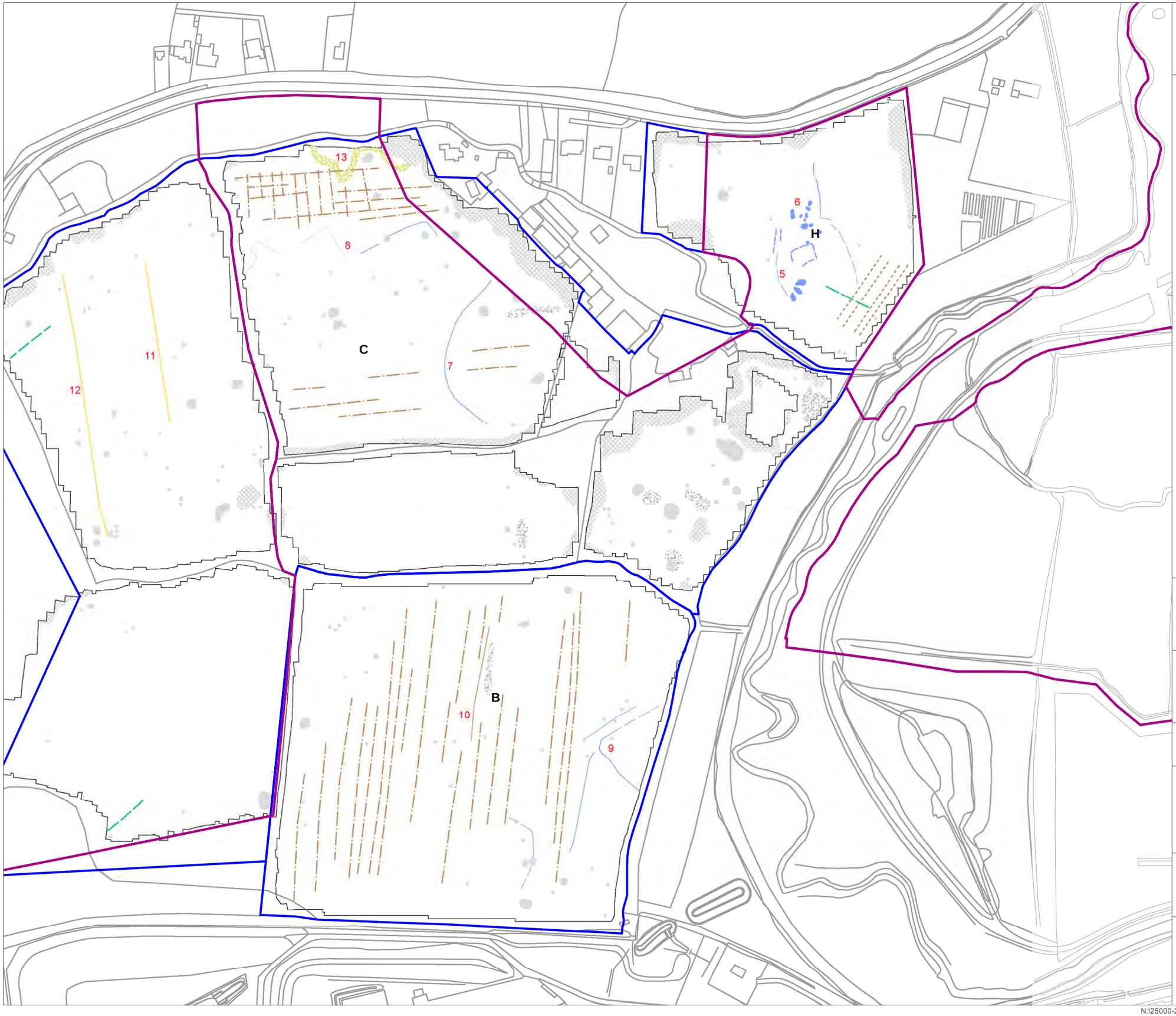

LONDON GATWICK

Legend

- Project Site Boundary
- 2019 Geophysical Survey Areas

KEY	
	Uncertain Origin (discrete anomaly / trend)
	Agriculture (plough)
	Possible service / track
	Magnetic disturbance
	Strong magnetic disturbance - made ground
	Ferrous (discrete / zone)

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Interpretation of Geophysical Survey Area B (Museum Field), C & H (Brook Farm)

DATE

July 2023

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 6	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:2,500

0 30 60 120 m

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LONDON GATWICK

Legend

- Project Site Boundary
- 2019 Geophysical Survey
- Proposed SMS / Offsetting Investigation Areas

KEY	
	Uncertain Origin (discrete anomaly / trend)
	Agriculture (plough)
	Possible service / track
	Magnetic disturbance
	Strong magnetic disturbance - made ground
	Ferrous (discrete / zone)

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Interpretation of Geophysical Survey Areas B, C, & H Overlaid with Trial Trenching Results and Showing Proposed SMS Areas

DATE

July 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 7	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:2,500

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Pollution Control Lagoon Excavation

Flood Storage (Control) Reservoir (2012)

Flood Storage (Control) Reservoir Wheel Wash Area Excavation

Flood Storage (Control) Reservoir Compound Area Excavation

Legend

- Project Site Boundary
- Archaeological Trench / Excavation
- Previous Archaeological Works

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

The Pollution Control Lagoon and Flood Storage (Control) Reservoir Archaeological Results

DATE

July 2023

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 8	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:5,000

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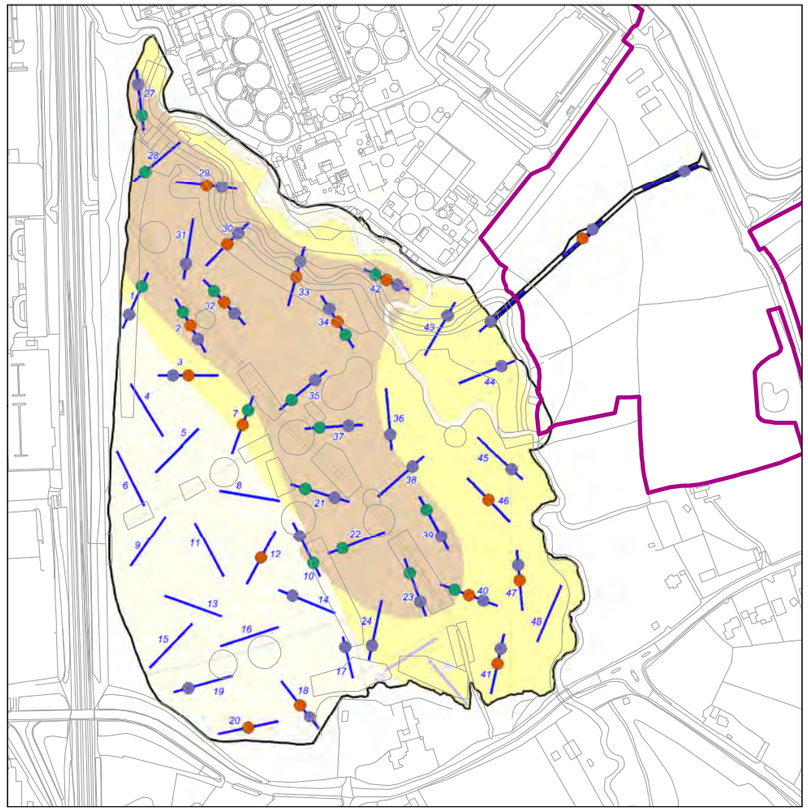
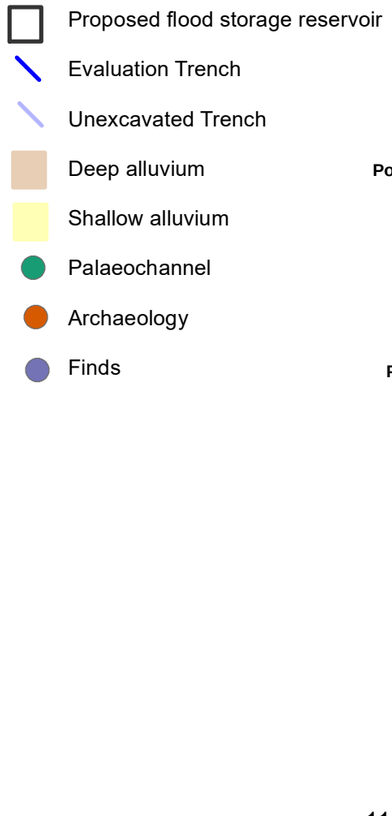
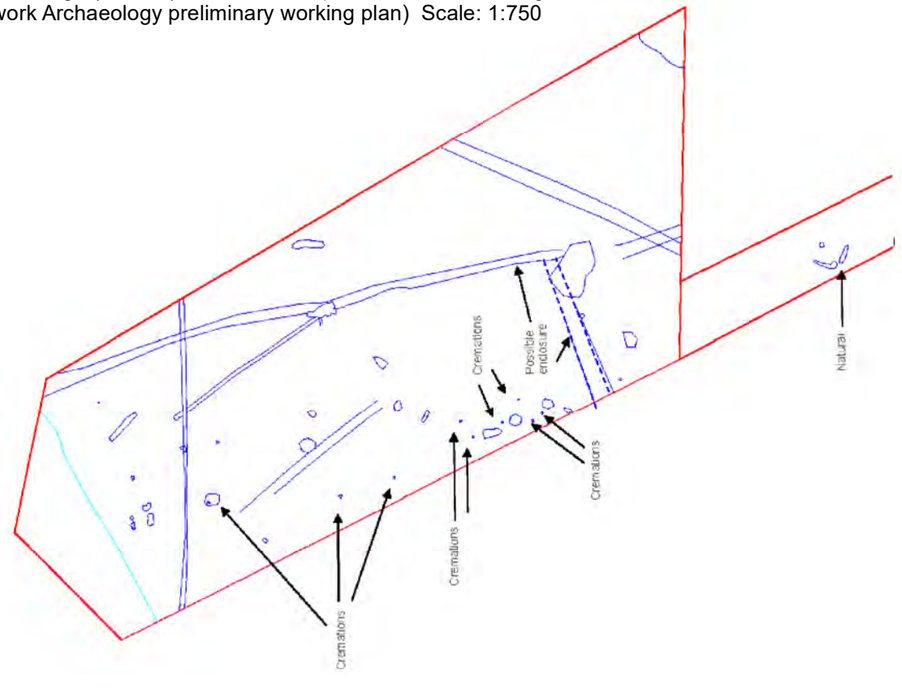
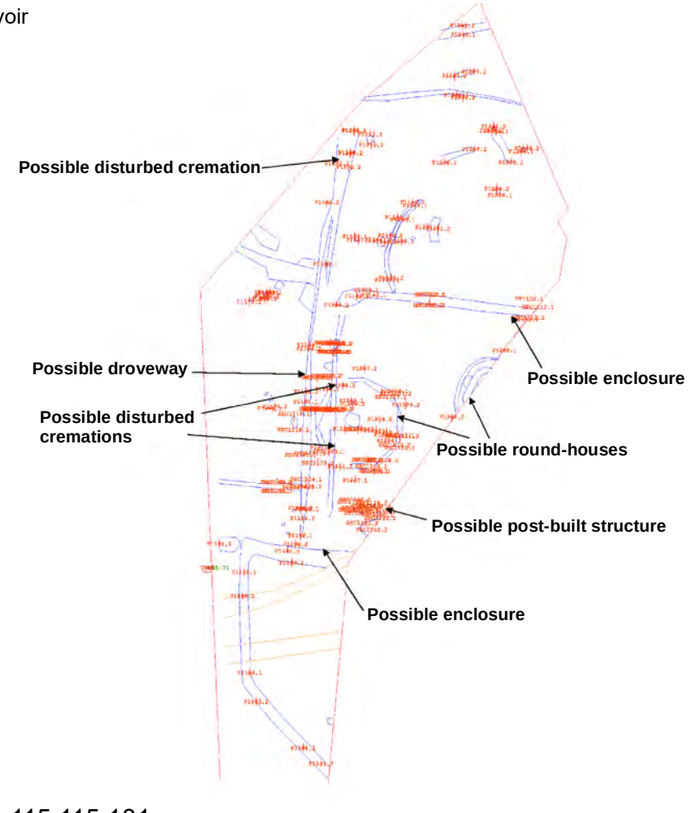


Flood Storage (Control) Reservoir Compound area archaeological excavation (Network Archaeology interim working plan) Scale: 1:5,000



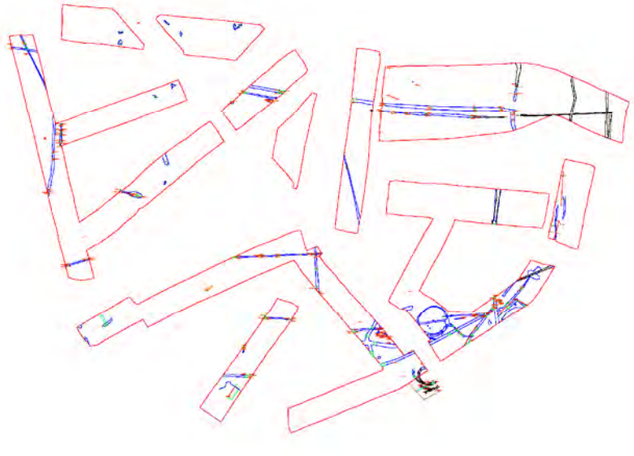
Flood Storage (Control) Reservoir compound area archaeological excavation (Network Archaeology preliminary working plan) Scale: 1:750





115 115 181

Flood Storage (Control) Reservoir 'wheel wash' area archaeological excavation (Network Archaeology preliminary working plan)
Scale: 1:500



Pollution Control Lagoon (Network Archaeology interim working plan)
Scale: 1:2,500

LONDON GATWICK

Legend

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

The Pollution Control Lagoon and Flood Storage (Control) Reservoir Archaeological Results - details

DATE

July 2023

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 9	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3

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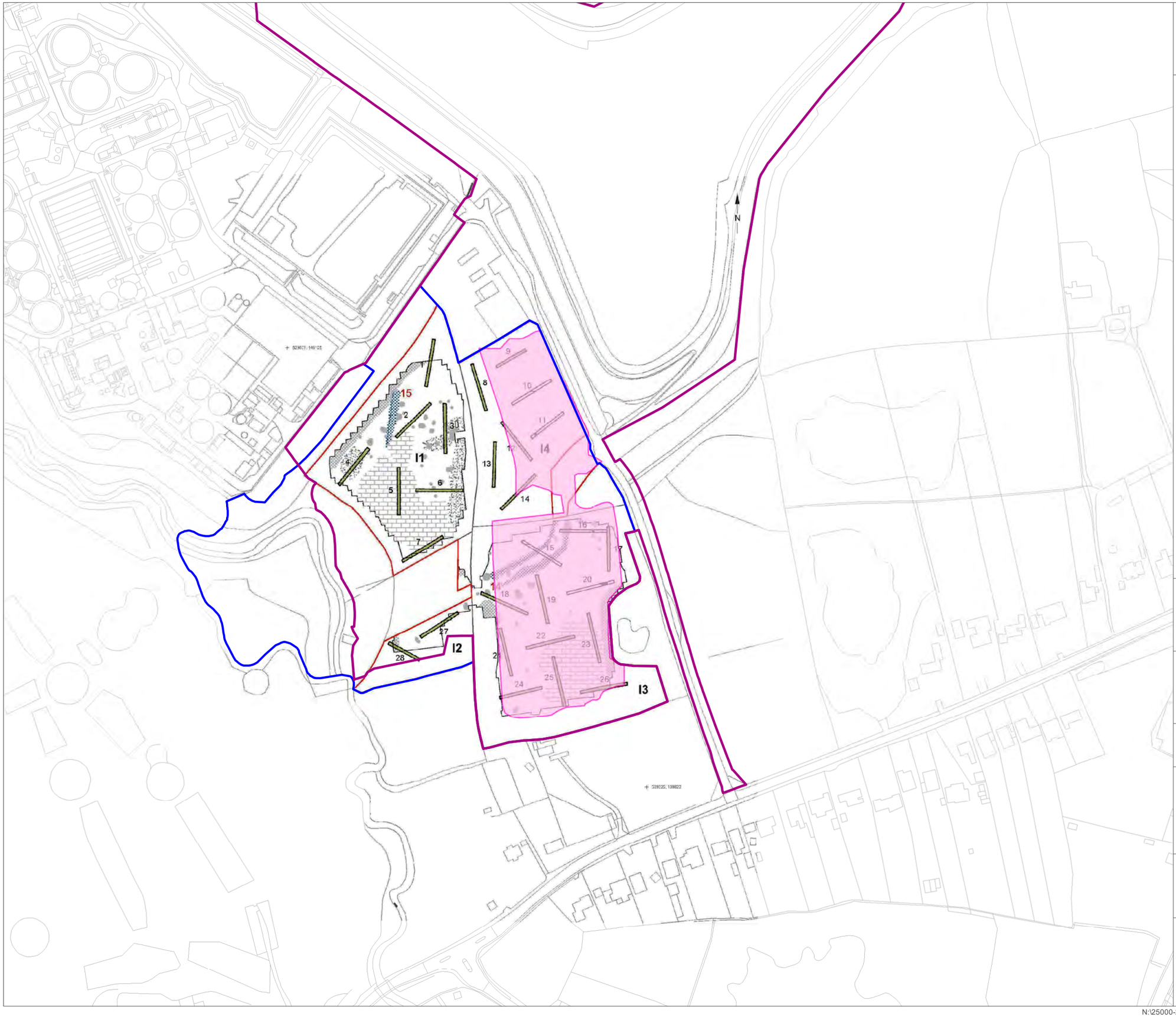

LONDON GATWICK

Legend

- Project Site Boundary
- 2019 Geophysical Survey
- Proposed SMS / Offsetting Investigation Areas

KEY	
	Uncertain Origin (discrete anomaly / trend)
	Agriculture (plough)
	Possible service / track
	Magnetic disturbance
	Strong magnetic disturbance - made ground
	Ferrous (discrete / zone)

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Interpretation of Geophysical Survey Areas B, C, & H Overlaid with Trial Trenching Results and Showing Proposed SMS Areas

DATE

July 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 10	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:2,500

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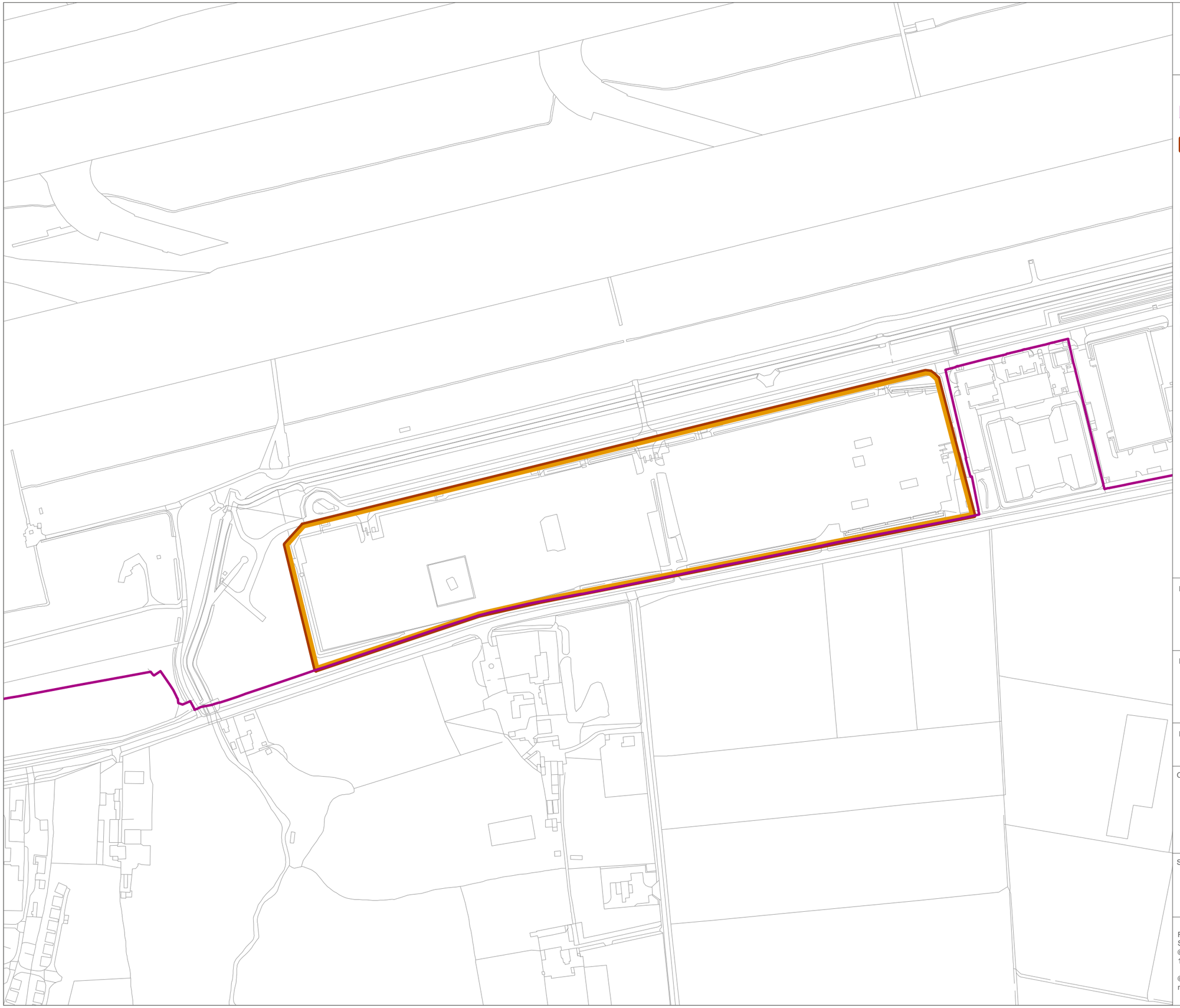

LONDON GATWICK

Legend

- Project Site Boundary
- Proposed SMS / Offsetting Investigation Areas

Geophysics and Trial Trenching Areas

- Area A
- Area B
- Area C
- Area G
- Area H
- Area I

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Car Park X Detail Showing Extent of Proposed SMS Area

DATE

July 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 11	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:3,270

0 40 80 160 m

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LONDON GATWICK

Legend

- Project Site Boundary
- Indicative Trenches
- Wastewater Treatment Works
- Previous Archaeological Trench / Excavation Areas

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Trial Trenching for Proposed On-airport Wastewater Treatment Works (WWTW) (Self Park North car park)

DATE

July 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 12	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:1,250

0 15 30 60 m

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LONDON GATWICK

Legend

- Project Site Boundary
- Indicative Trenches
- Wastewater Treatment Works
- Previous Archaeological Trench / Excavation Areas

DOCUMENT

Written Scheme of Investigation

DRAWING TITLE

Trial Trenching for Proposed On-airport Wastewater Treatment Works (WWTW) (Self Park North car park) - Aerial Overlay

DATE

July 2024

ORIENTATION	DRAWING NO.	REVISION
N	FIGURE 13	For WSI Issue
	DRAWN BY: NB	PM / CHECKED BY: MR

SCALE @ A3 1:1,250

0 15 30 60 m

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