

KGHR05



**AN ARCHAEOLOGICAL
EVALUATION**

**AT THE FORMER
KORSNAS SITE,
GALLEY HILL ROAD
SWANSCOMBE
KENT**

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SEPTEMBER 2005

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1 ABSTRACT

- 1.1 This report details the results of an archaeological evaluation at the former Korsnas Site, Galley Hill Road, Swanscombe, Kent, undertaken for CgMs Consulting on behalf of Bellwinch Homes.
- 1.2 Seven evaluation trenches located across the site were excavated.
- 1.3 With the exception of Trench 7 in the northwest of the site, all the trenches contained Upper Chalk and/or chalk gravel. Chalk gravel, derived from weathering of the Upper Chalk, was observed in the centre, east and northwest areas of the site. Truncated Head deposits were identified in Trenches 7 and 8.
- 1.4 A deposit of gravel overlying the chalk was recorded in Trench 5 and the western end of Trench 6 in the southeast area of the site. This gravel although Pleistocene does not fall within the elevation of the Boyn Hill gravels.
- 1.5 A layer of alluvium was observed sealing the gravel in the eastern ends of Trench 2 and 6 as mapped in the British Geological Survey. Within Trench 1/2 where not sealed by an overlying "Brickearth" this alluvium had oxidized to a much darker colour which was initially thought to represent a peat deposit. However on examination the deposit was not found to have a significant organic content.
- 1.6 In Trenches 1, 2, 5 and 6 a "Brickearth" deposit was identified thought to be of colluvial origin. This deposit comprising a red brown, grey brown silt is thought to represent downslope erosion of the Head deposits, which lay on the upslope part of the site, into the Ebbsfleet Valley. An undated and unidentified fragment of animal bone was recovered from the top of the 'brickearth' in the southeast of Trench 6.
- 1.7 Late nineteenth century features consisting of a posthole in Trench 6 and a series of bedding trenches and a posthole in Trench 1 were found in the southeast area of the site. All the trenches contained 20th century intrusions, which were sealed by 20th century made-ground.
- 1.8 Other than the undated fragment of animal bone in Trench 6, no pre-late 19th century archaeological remains were encountered anywhere on the site.
- 1.9 The area of potential archaeological survival on the south east of the site will largely comprise of public open space in the new development. Modern made ground in this area will be capped by 1m+ of clean imported topsoil providing a protective blanket over the underlying alluvium a minimum of 3.5m thick. Within the area of public open space no intrusions will penetrate the modern made ground and no dewatering is proposed.
- 1.10 Within a small part of the area of potential archaeological survival on the south east of the site, a number of new flat units are proposed. These will be built on piled foundations. All pile caps, ground

beams and services will be contained within modern made ground. The piles will directly impact on 23m² of the area of potential archaeological survival (1715m²), representing 1.3% of this area in m².

2 INTRODUCTION

- 2.1 An archaeological evaluation was conducted by Pre-Construct Archaeology Ltd. at the former Korsnas Site, Galley Hill Road, Swanscombe, Kent, due to redevelopment of the site for residential properties. The evaluation was conducted between 31st August and 6th September 2005 and was commissioned by Lorraine Darton of CgMs Consulting on behalf of Bellwinch Homes.
- 2.2 The area subject to evaluation work is located between Galley Hill Road to the north, Taunton Road to the east, the London to Gravesend railway line to the south and the Channel Tunnel Rail Link to the west.
- 2.3 The National Grid Reference of the site is TQ 6125 7475.
- 2.4 The site was given the code KGHR 05.
- 2.5 The project was monitored by the County Archaeological Officer, Wendy Rogers, project managed by Jon Butler and supervised by the author. This report was edited by Duncan Hawkins.

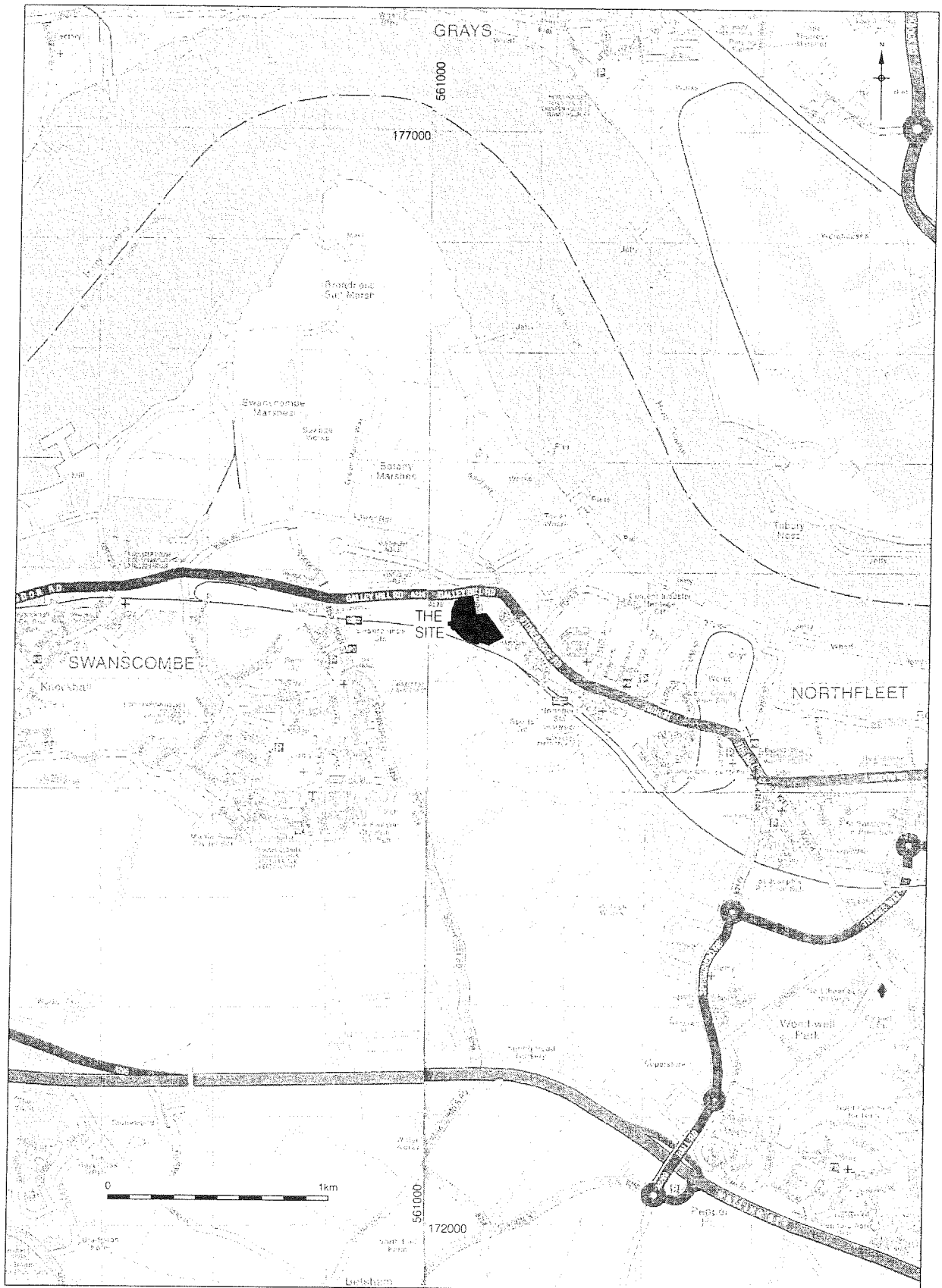


Figure 1
Site location
1:25,000

Figure 2
Trench Location
1:1,250



3 PLANNING BACKGROUND

3.1 In November 1990 the Department of the Environment issued Planning Policy Guidance Note 16 (PPG16) "Archaeology and Planning", providing guidance for planning authorities, property owners, developers and others on the preservation and investigation of archaeological remains.

3.2 In short, government policies provide a framework which:

- Protect Scheduled Ancient Monuments
- Protect the settings of these sites
- Protect nationally important un-scheduled ancient monuments
- Has a presumption in favour of *in situ* preservation
- In appropriate circumstances, requires adequate information (from field evaluation) to enable informed decisions
- Provides for the excavation and investigation of sites not important enough to merit *in situ* preservation

3.3 In considering any proposal for development, the local planning authority will be mindful of the policy framework set by government guidance, in this instance PPG16, of existing development plan policy and of other material considerations.

3.4 Consequently, further to the submission of the archaeological impact assessment¹, the County Archaeological Officer recommended the need for archaeological fieldwork. Further to this advice, Dartford Borough Council has attached the following planning condition to the planning consent:

AR20 No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of:

- i) **archaeological desk based assessment and field evaluation works in accordance with a specification and written timetable which has been submitted to and approved by the Local Planning Authority; and**
- ii) **following on from the evaluation, any safeguarding measures to ensure preservation *in situ* of important archaeological remains and/or further archaeological investigation and recording in accordance with a specification and timetable which has been submitted to and approved by the Local Planning Authority.**

¹ Darton, L., 2005. *Archaeological Impact Assessment, The Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

4 GEOLOGY AND TOPOGRAPHY

4.1 GEOLOGY

- 4.1.1 The British Geological Survey shows the anticipated geological sequences on site to be as follows:
- i) Alluvial deposits associated with the Ebbsfleet overlying Head deposits overlying Upper Chalk in the east of the site (Zone A)
 - ii) Head deposits overlying Upper Chalk in the centre of the site (Zone B)
 - iii) Made or worked ground overlying Upper Chalk in the west of the site (Zone C)²
- 4.1.2 These inferences are supported by the actual geological sequence recorded in recent geotechnical ground investigations as outlined in detail in the Archaeological Impact Assessment³.
- 4.1.3 The archaeological evaluation uncovered two sedimentary units that had not been detected by the geotechnical survey or predicted through extrapolation of the results of the British Geological Survey. Pleistocene Gravel, in part derived from weathering of the Upper Chalk, was observed in the centre and east of the site. A layer of Colluvial “brickearth” also sealed the chalk gravel to the east. It is thought that these units were both termed Head deposits in the geotechnical survey.
- 4.1.4 In terms of elevation none of the sediments observed on site lies within the likely height range of undisturbed Boyn Hill Terrace deposits. At the Swanscombe Skull Site NNR (Barnfield Pit), only c1 km west (upstream in the Thames Valley) from the Galley Hill Site, the base of the sediment sequence underlying the Boyn Hill/Orsett Heath Terrace is at about 23m AOD, probably at least 10m above the level of any water laid sediments observed at Galley Hill.
- 4.1.5 The Colluvial “Brickearth” is likely to have formed over a long period of time during the Holocene. Recent archaeological excavations at Stone Castle near Greenhithe (Pre-Construct Archaeology forthcoming), in a virtually identical topographic location identified an extensive Colluvial “Brickearth” which had clearly been forming from the Bronze Age to the late Roman period. Possibly this evidence for erosion relates to late prehistoric deforestation of the valley slopes.

² Darton, L., 2005. *Archaeological Impact Assessment, The Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

³ *ibid*

4.2 TOPOGRAPHY

- 4.2.1 The study site lies on the western side of the Ebbsfleet Valley immediately south-west of the point where the Ebbsfleet river flows into the Thames.
- 4.2.2 The site slopes gradually from a level of 11m AOD in the north-west to 3m AOD in the south-east. However, this does not reflect the natural topography as the western end of the site was stripped and levelled prior to the construction of the 20th century factories⁴.
- 4.2.3 The natural topography of the site is now thought to have sloped relatively sharply from centre to east, in the direction of the Ebbsfleet River. Levels on site suggest that there would originally have been a fall of approximately 5m from the centre of the site to the east into the Ebbsfleet Valley.

⁴ *ibid* Darton, L., 2005. *Archaeological Impact Assessment, The Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 LOWER PALAEOLITHIC

5.1.1 Palaeolithic artifacts have been recovered from both colluvial and alluvial deposits in the Ebbsfleet Valley. It was, therefore, thought likely that Zone A, in the east of site, had a good archaeological potential due to the presence of alluvial deposits. Zone B, in the center of site, had a low archaeological potential due to the presence of truncated Head deposits and Zone C had a negligible potential due to mid 20th century stripping and terracing of the Upper Chalk⁵.

5.2 UPPER PALAEOLITHIC, MESOLITHIC AND NEOLITHIC

5.2.1 Upper Palaeolithic, Mesolithic and Neolithic artifacts are associated with colluvial and alluvial deposits in the area.

5.3 BRONZE AND IRON AGE

5.3.1 Iron Age field systems and enclosures were discovered to the south of the study site during archaeological fieldwork associated with the Channel Tunnel Rail Link (CTRL). It is also hypothesized that the confluence of the Thames and Ebbsfleet may have been a focus of Bronze Age ritual activity, while the marshland environment of the floodplain may have been exploited for wildfowling and summer pasture⁶.

5.4 ROMAN

5.4.1 Situated at the source of the River Ebbsfleet (a springline at the head of the Ebbsfleet Valley) is the small Roman town and probable religious center "Vagniacis", on the line of Watling Street (the Roman Road from London to Canterbury and Dover)⁷. Recent archaeological excavations associated with the Channel Tunnel Rail Link also uncovered a series of Roman buildings further up the Ebbsfleet Valley, to the north of "Vagniacis" and to the south of the study site. The Ebbsfleet Valley therefore seems to have been a centre of activity in the Roman period⁸.

⁵ Darton, L., 2005. *Archaeological Impact Assessment, The Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

⁶ *ibid*

⁷ Darton, L., 2005. *Archaeological Impact Assessment, The Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

⁸ *ibid*

5.5 SAXON AND EARLY MEDIEVAL

- 5.5.1 Archaeological work associated with the Channel Tunnel Rail Link and the Ebbsfleet “Springhead Quarter” development has identified an extensive Anglo-Saxon cemetery at the southern end of the Ebbsfleet valley. The place names Ebbsfleet, Northfleet and Swanscombe all have Anglo Saxon elements⁹.

5.6 LATE MEDIEVAL, POST MEDIEVAL AND MODERN

- 5.6.1 During the late Medieval and early Post Medieval period the study site is thought to have been agricultural land. This appears to have continued up to the late 19th century¹⁰.
- 5.6.2 By 1897 a railway line was constructed along the western boundary of the site, linking to a tramway in the northwest. Terraced housing with gardens to the rear were constructed, fronting Galley Hill Road in the north of the site. Taunton Road and the terraced housing associated with it were also constructed around this time in the west of the site. Several buildings with probable industrial functions were constructed in the south-east of the site¹¹.
- 5.6.3 Construction of the Paper Sack factory began between 1933 and 1939. By 1954, the factory covered most of the west of the site. Additional buildings and extensions were added to the factory in 1961 and 1973, extending southwards. The factory was demolished between 2003 and the present¹².

⁹ *ibid*

¹⁰ *ibid*

¹¹ Darton, L., 2005. *Archaeological Impact Assessment, The Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

¹² *ibid*

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 In accordance with the specification¹³, the trenches were arranged to fully investigate the presence or absence of significant archaeological remains across the site.
- 6.2 A total of 8 trenches were proposed, six measuring 30m x 2m and two measuring 20m x 2m. However, due to lack of space caused by obstructions on the ground, there was insufficient room for 2 separate trenches in the south-eastern corner. Consequently, Trench 1 and Trench 2 were combined, creating a 53.50m x 2m trench. The trenches were located as closely as possible to the previously agreed locations outlined in the specification and surveyed in using a Total Station Theodolite.
- 6.3 The trenches were excavated using a 360 type mechanical excavator, fitted with a ditching bucket under archaeological supervision. Excavation by machine was undertaken in spits and continued through the topsoil until natural deposits were reached.
- 6.4 Long sections and the base of each trench were hand-cleaned before recording.
- 6.5 All recording systems adopted during the investigations were fully compatible with those most widely used elsewhere in Kent, that is those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeology Service (MoLAS 1994). Individual descriptions of all archaeological strata and features excavated and exposed were entered onto pro-forma recording sheets. All plans and sections of archaeological deposits were recorded on polyester based drawing film, the plans being drawn at a scale of 1:50 and the sections at 1:10 or 1:20. The OD height of all principal strata were calculated and indicated on the appropriate plans and sections. A full photographic record of the investigations was also prepared including both black and white and colour transparencies on 35mm film.
- 6.6 Levels on the trenches were taken off one of two Temporary Bench Marks (TBMs) established on the site, the TBM situated to the east having a value of 5.00m and the TBM in the west having a value of 8.08m AOD.

¹³ Darton, L., 2005. *Specification for an Archaeological Field Evaluation, Former Korsnas Site, Galley Hill Road, Swanscombe, Kent*. CgMs Consulting Ltd., (unpublished report)

7 ARCHAEOLOGICAL PHASE DISCUSSION

7.1 GENERAL OVERVIEW

Seven trenches were arranged across the site. The land forming the site sloped down from 11m AOD in the north-west to 3m AOD in the south-east. With the exception of Trench 7, all the trenches contained chalk bedrock and / or chalk gravel. Trench 5 and the western end of Trench 6 contained Pleistocene Gravel overlying chalk. The eastern ends of Trench 1/2 and 6 contained an alluvial deposit, the upper surface of which had been oxidised. A colluvial brickearth was observed in Trenches 1/2, 5 and 6, and sealed the earlier deposits found in these trenches. A fragment of animal bone was recovered from the top of the brickearth in Trench 6. A possible 19th century posthole was also present in Trench 6. In Trench 1, a series of 19th century bedding trenches and a probable posthole were observed. All the trenches contained 20th century intrusions sealed by 20th century made-ground.

7.2 TRENCH 1

Trench 1 measured 2.00m north-south and 53.50m east-west.

7.2.1 Phase 1- Natural

The earliest deposit to be encountered within the western end of Trench 1 was [11], a layer of indurated, light grey chalk with frequent inclusions of angular cobble to pebble-sized flint. The deposit as exposed measured 2.00m north-south, 6.45m east-west and was of unknown depth. The top of the layer was at a level of 4.63m AOD. The deposit was interpreted as Upper Chalk.

The earliest deposit to be encountered within the eastern end of Trench 1 was [57], a layer of soft, dark grey, finely laminated silty alluvial clay with frequent inclusions of fragmented robust mollusc shells mainly as pieces of less than 5 mm maximum dimension. The layer measured 2.00m north-south, 3.00m east-west and was of unknown depth. The deposit was exposed only in the base of a sondage located at the eastern end of the trench, at a level of 2.13m AOD. It was interpreted as an alluvial deposit, indicative of a low-energy aquatic environment

Sealing layer [57] was [56], interpreted as the oxidized surface of [57]. The layer measured 2.00m north-south, 3.00m east-west and was 0.11m thick. The deposit was exposed in the base of the sondage located at the eastern end of the trench, at a level of 2.24m AOD. It was interpreted as a layer of Alluvial clay indicative of a low-energy aquatic environment.

Sealing layers [55] and [56] was [54], a layer of reddish brown sandy silt with occasional inclusions of angular chalk pebbles and sub-angular flint pebbles. The dimensions of the deposit were 2.00m north-south, 30.00m east-west and 0.30m deep, the top being at a level of 4.63m AOD. The deposit was interpreted as a colluvial 'brickearth', resulting from downslope erosion of the Head deposits on the upslope (west) of the site into the Ebbsfleet Valley on the east of the site.

7.2.2 Phase 2- 19th Century

Truncating layer [54] were 7 linear pits, contexts [59], [61], [63], [67], [69], [71], and [73], containing respective fills [58], [60], [62], [66], [68], [70] and [72]. The cuts were arranged in one row of four to the west (contexts [67], [69], [71] and [73]), one row of two towards the centre (contexts [61] and [63]) and one single pit to the east (context [59]) as shown in figure 3. They were all orientated northwest-southeast. Contexts [67], [69], [71] and [73] were all truncated to the west by a modern intrusion. The features were all approximately the same size and shape, all being sub-rectangular in plan with steeply sloping, concave sides with sharp breaks of slope at the top and bottom and rounded bases. They were approximately 0.60m north-south, 1.50m east-west and between 0.35m and 0.65m deep, the top of the cuts being at a level of 3.72m AOD. The fills of the features were also identical, consisting of firm, humic-rich, dark greyish-brown silty sand. Contexts [58], [62], [69] and [71] all contained late 19th century pottery and post-medieval glass. Context [69] also contained a piece of clay pipe. Due to the humic-rich nature of the fills and the characteristic shape of the cuts, the features were interpreted as the remains of late 19th century bedding trenches.

Also truncating layer [54] was [65], a semi-circular cut running into the southern limit of excavation. The sides of the cut sloped gradually at the top before becoming almost vertical, forming a pointed base. The cut contained [64], a firm, mid brownish grey sandy silt fill with rare inclusions of heavily fragmented red brick. The feature was interpreted as a probable 19th century posthole.

7.2.3 Phase 3- 20th Century

Cut into [54] were four 20th century intrusions.

Context [52] was a large pit, 2.00m north-south, 7.00m east-west and 1.20m deep. It contained a firm, mid greyish brown sandy silty fill, [53], with frequent inclusions of red fabric brick and concrete. The top of the cut was found to be at a level of 3.53m AOD.

Context [75] was a large circular pit, 2.00m north-south, 4.50m east-west and over 0.65m deep. It contained a firm, mid greyish brown sandy silty fill, [74], with frequent inclusions of red fabric brick and concrete. The top of the cut was found to be at a level of 3.67m AOD.

Context [77] was a large circular pit, 1.40m north-south, 4.00m east-west and of unknown depth. It contained a firm, mid greyish brown sandy silty fill, [74], with frequent inclusions of red fabric brick and concrete. The top of the cut was found to be at a level of 3.72m AOD.

Context [79] was a circular pit, 0.45m north-south, 1.50m east-west and of unknown depth. It contained a firm, mid greyish brown sandy silty fill, [78], with frequent inclusions of red fabric brick and concrete. The top of the cut was found to be at a level of 3.72m AOD.

Sealing the intrusions was [80], a layer of indurated, light yellowish-grey silty sand with frequent inclusions of sub-angular to angular pebble to cobble-sized flint, angular fragments of red and yellow fabric brick and concrete. The dimensions of the deposit were 2.00m north-south, 30.00m east-west and 0.35m thick in the western end of the trench, increasing to a thickness of 1.10m in the eastern end. The top of the deposit was found to be at a level of 5.10m AOD, which also represented the top of the trench. It was interpreted as 20th century made-ground.

7.3 TRENCH 3

Trench 3 measured 2.00m north-south and 30.00m east-west.

7.3.1 Phase 1- Natural

The earliest deposit to be encountered within Trench 3 was [39], a layer of indurated to compact chalk, mid to light yellowish grey in colour, with frequent inclusions of angular to sub-angular pebble to cobble-sized flint. The top of the deposit was at a level of 8.56m AOD, covering the entire base of the trench. It was interpreted as Upper Chalk.

7.3.2 Phase 3- 20th Century

Cut into [39] were two 20th century intrusions.

Context [36] was an irregular pit, 2.00m north-south, 4.80m east-west and of unknown depth. It contained a firm, mid greyish brown sandy silty fill, [35], with frequent inclusions of red fabric brick and concrete. The top of the feature was found to be at a level of 8.28m AOD.

Context [38] was a linear feature on an approximate north-south orientation. The dimensions of the cut were 3.30m north-south, 2.00m east-west and of unknown depth. It contained a firm, mid greyish brown sandy silty fill, [37], with frequent inclusions of red fabric brick and concrete. The top of the feature was found to be at a level of 8.66m AOD.

Sealing the cuts was [34], a layer of indurated, light yellowish-grey silty sand with frequent inclusions of sub-angular to angular pebble to cobble-sized flint, angular fragments of red and yellow fabric brick and concrete. The dimensions of the deposit were 2.00m north-south, 30.00m east-west and 0.35m deep. The top of the deposit was found to be at a level of 8.90m AOD, which also represented the top of the trench. It was interpreted as 20th century made-ground.

7.4 TRENCH 4

Trench 4 measured 2.00m north-south and 30.00m east-west.

7.4.1 Phase 1- Natural

The earliest deposit encountered within Trench 4 was [47], a layer of firm to compact, mid to light yellowish grey chalk with frequent inclusions of angular to sub-angular pebble to cobble-sized flint. The top of the deposit was found to be at a level of 8.56m AOD, covering the entire base of the trench. It was interpreted as a weathered form of Upper Chalk.

7.4.2 Phase 3- 20th Century

Cut into [47] were three 20th century intrusions.

Context [42] was a roughly circular pit, 2.00m north-south, 3.60m east-west and of unknown depth. It contained fill [41], a firm, mid brownish grey silty sand with frequent fragments of concrete. The top of the feature was found to be at a level of 8.48m AOD.

Context [44] was a circular pit, 1.75m north-south, 2.20m east-west and of unknown depth. It contained fill [43], a firm, mid brownish grey silty sand with frequent fragments of concrete. The top of the feature was at a level of 8.56m AOD.

Context [46] was an irregular pit, 2.00m north-south, 2.75m east-west and of unknown depth. It contained fill [45], a firm, mid brownish grey silty sand with frequent fragments of concrete. The top of the feature was at a level of 8.56m AOD.

Sealing the cuts was [40], a layer of indurated, light yellowish-grey silty sand with frequent inclusions of sub-angular to angular pebble to cobble-sized flint, angular fragments of red and yellow fabric brick and concrete. The dimensions of the deposit were 2.00m north-south, 30.00m east-west and 0.36m deep. The top of the deposit was found to be at a level of 9.30m AOD, which also represented the top of the trench. It was interpreted as being a layer of 20th century made-ground.

7.5 TRENCH 5

Trench 5 measured 2.00m north-south and 30.00m east-west.

7.5.1 Phase 1- Natural

The earliest deposit to be encountered within Trench 5 was [51], a layer of indurated to compact chalk, mid to light yellowish grey in colour with frequent inclusions of angular to sub-angular pebble to cobble-sized flint. The deposit covered the entire base of the trench, the top being at a level of 4.60m AOD. It was interpreted as Upper Chalk.

Sealing [51] in the western end of the trench was layer [50], a friable light brownish-yellow sandy chalk and flint gravel, as exposed, measuring 2.00m north-south, 14.00m east-west and 0.40m deep. The top of the deposit was found to be at a level of 4.60m AOD.

Sealing [51] in the east of the trench was [33], a layer of gravel with the same colour and composition as [50]. The deposit as exposed measured 2.00m north-south, 1.50m east-west and was 0.40m deep. The top of the layer was found to be at a level of 3.43m AOD.

The gravels [33]/[50]/[51] appeared to be a typical sandy river gravel with clasts of sub angular flint and numerous well rounded flint pebbles. The sand within the deposit was clean and in some areas contained abundant broken remains of robust Mollusc shells, mainly as pieces of less than 5mm dimension.

Sealing layers [33] and [50] was [32], a thin layer of sandy silt, dark greyish-brown in colour, with occasional inclusions of angular to sub-rounded pebble-sized flint. The deposit measured 2.00m north-south, 30.00m east-west and was 0.25m deep, the top being at a level of 4.44m AOD. The deposit was interpreted as a Colluvial "brickearth".

7.5.2 Phase 3- 20th Century

Sealing [33] was [49], a layer of light grey, angular chalk fragments, mixed with dark greyish-brown sandy silt. The dimensions of the layer were 2.00m north-south, 30.00m east-west and a maximum of 0.80m deep, the top being at a level of 5.60m AOD. It was interpreted as a layer of 20th century made-ground.

Sealing [49] was [31], a layer of friable, mid grey angular chalk fragments with frequent inclusions of concrete and red fabric brick fragments. It was observed in the eastern end of the trench, its dimensions being 2.00m north-south, 14.00m east-west and 0.70m deep. The top of the layer was found to be at a level of 5.79m AOD, which also represented the top of the trench. The layer was interpreted as 20th century made-ground.

Also sealing [49] was [48], a layer identical in composition and colour to layer [31]. It was observed in the western end of the trench and its dimensions were 2.00m north-south, 12.55m east-west and 0.70m deep. The top of the deposit was found to be at a level of 5.79m AOD, which also represented the top of the trench. The layer was also interpreted as 20th century made-ground.

7.6 TRENCH 6

Trench 6 measured 2.00m north-south and 30.00m east-west.

7.6.1 Phase 1- Natural

The earliest deposit to be encountered within the western end of Trench 6 was [11], a layer of friable, light grey, angular to sub-rounded pebble-sized chalk and flint gravel. The deposit measured 0.75m north-south, 0.70m east-west and was of unknown depth. It was exposed in the base of the sondage

located at the eastern end of the trench, at a level of 2.66m AOD. The deposit was interpreted as weathered Upper Chalk.

Sealing this layer was [13], a layer of friable, light brown gravelly silty sand with very frequent inclusions of angular to sub-angular flint pebbles. The deposit was exposed in the base of the sondage at the western end of the trench at a level of 2.78m AOD. It measured 2.00m north-south, 2.00m east-west and was of unknown depth. The deposit is thought to represent a river gravel.

The earliest deposit to be encountered within the eastern end of Trench 6 was [10], a layer of soft, dark grey, finely laminated silty clay with frequent inclusions of fragmented shell identical to context [57] in Trench 1/2. The layer measured 2.00m north-south, 2.00m east-west and was of unknown depth. The deposit was exposed in the base of the sondage located at the eastern end of the trench, at a level of 1.87m AOD. It was interpreted as an alluvial deposit, indicative of a low energy aquatic environment.

Sealing layers [10] and [13] was [9], a layer of mid brown sandy silt with occasional inclusions of angular chalk pebbles and sub-angular flint pebbles. The deposit was 2.00m north-south, 30.00m east-west and 1.00m deep, the top being at a level of 3.20m AOD. The deposit was interpreted as a colluvial "brickearth".

7.6.2 Phase 2- Late 19th Century

Truncating [9] was [15], an ovoid cut with steeply sloped, concave sides with a sharp break of slope at the top and bottom and a rounded base. The cut contained [14], a friable, dark brown silt fill with occasional sub-angular flint pebbles and one small fragment of Late 19th century pottery. The feature was 0.20m north-south, 0.15m east-west and 0.10m deep, the top of it being at a level of 3.20m AOD. It was interpreted as a possible posthole dating to the Late 19th century.

7.6.3 Phase 3- 20th Century

Sealing [15] was [8], a layer of dark grey silt with occasional inclusions of angular chalk and flint pebbles and fragments of concrete and red-brick. The layer was 2.00m north-south and 30.00m east-west, the top of it being at a level of 3.50m AOD. The layer was interpreted as 20th century made ground.

Truncating layer [8] were four 20th century intrusions.

Context [3] was a circular pit, 1.40m east-west and 0.54m deep, recorded in section only. The sides of the feature were gently sloped and concave, with a sharp break of slope at the top. The base of the feature was not reached. It contained fill [2], a firm, dark grey silty sand with frequent fragments of concrete and burnt material. The top of the feature was at a level of 3.50m AOD.

Context [5] was interpreted as a probable pit, 2.80m east-west and 0.64m deep, recorded in section only. The sides of the feature were gently sloped with a sharp break of slope at the top and bottom and an uneven base. It contained fill [4], a firm, dark grey silty sand with frequent fragments of concrete. The top of the feature was at a level of 3.50m AOD.

Context [7] was interpreted as a probable pit, 0.96m east-west and 0.50m deep, recorded in section only. The sides of the feature were gently sloped with a sharp break of slope at the top and bottom and a rounded base. It contained fill [6], a firm, dark grey silty sand with frequent fragments of concrete. The top of the feature was at a level of 3.50m AOD.

Context [17] was interpreted as a service trench, orientated north-south. The dimensions of the feature were 0.20m east-west, 2.00m north-south and 0.15m deep. The sides of the feature were gently sloped with a sharp break of slope at the top and bottom and a rounded base. It contained fill [16], a firm, mid grey silty sand with frequent fragments of concrete and the remains of a broken ceramic pipe. The top of the feature was at a level of 3.60m AOD.

Sealing the cut features was [1], a layer of friable, mid grey angular chalk fragments with frequent inclusions of concrete and red fabric brick fragments. The dimensions of the deposit were 2.00m north-south, 30.00m east-west and 0.90m deep. The top of the layer was found to be at a level of 4.10m AOD, which also represented the top of the trench. The layer was interpreted as 20th century made-ground.

7.7 TRENCH 7

Trench 7 was 20.00m north-south and 2.00m east-west.

7.7.1 Phase 1- Natural

The earliest deposit encountered within Trench 7 was [30], a layer of mid brown sandy silt with occasional inclusions of angular chalk pebbles and sub-angular flint pebbles. The deposit was 20.00m north-south, and 2.00m east-west, the top being at a level of 8.04 AOD. A sondage located in the southern end of the trench revealed that the deposit was over 1.80m deep, although the base of it was not found owing to the instability of the sections. The deposit was interpreted as truncated natural Head deposits.

7.7.2 Phase 3- 20th Century

Truncating layer [30] were two 20th century intrusions.

Context [27] was interpreted as an irregularly shaped pit. The dimensions of the feature were 9.51m north-south, 2.00m east-west, and of unknown depth. It contained fill [26], a firm, mid grey silty sand with frequent fragments of concrete and red fabric brick. The top of the feature was at a level of 8.71m AOD.

Context [29] was interpreted as an irregularly shaped pit. The dimensions of the feature were 3.50m north-south, 2.00m east-west, and unknown depth. It contained fill [28], a firm, mid grey silty sand with frequent fragments of concrete and red fabric brick. The top of the feature was at a level of 8.04m AOD.

Sealing the cut features was [25], a layer of firm, mid grey angular chalk fragments with frequent inclusions of concrete and red fabric brick fragments. The dimensions of the deposit were 20.00m north-south, 2.00m east-west and 0.35m deep. The top of the layer was found to be at a level of 9.14m AOD, which also represented the top of the trench. The layer was interpreted as 20th century made-ground.

7.8 TRENCH 8

7.8.1 Phase 1- Natural

The earliest deposit to be encountered within Trench 8 was [24], a layer of indurated to compact chalk, mid to light yellowish grey in colour, with frequent inclusions of angular to sub-angular pebble to cobble-sized flint. The dimensions of the deposit were 20.00m north-south, 2.00m east-west and of unknown depth. The top of the deposit was at a level of 7.19m AOD. It was interpreted as Upper Chalk.

Sealing [24] was [23], a layer of mid brown sandy silt with occasional inclusions of angular chalk pebbles and sub-angular flint pebbles. The deposit was 20.00m north-south, and 2.00m east-west, the top being at a level of 7.39m AOD. The deposit was found to be 0.32m thick in the northern end of the trench, becoming thicker towards the south. A sondage revealed that the deposit was over 0.50m deep in the southern end of the trench. The base of the layer was not found due to the instability of the sections. The deposit was interpreted as truncated natural Head deposits.

7.8.2 Phase 3- 20th Century

Truncating layer [23] were two 20th century intrusions.

Context [20] was interpreted as an irregularly shaped pit. The dimensions of the feature were 2.75m north-south, 2.00m east-west, and of unknown depth. It contained fill [19], a firm, mid brownish grey silty sand with frequent fragments of concrete and red fabric brick. The top of the feature was at a level of 7.19m OD.

Context [22] was interpreted as a linear intrusion. The dimensions of the feature were 1.25m north-south, 2.00m east-west, and unknown depth. It contained fill [21], a firm, mid brownish grey silty sand

with frequent fragments of concrete and red fabric brick. The top of the feature was at a level of 7.24m OD.

Sealing the cut features was [18], a layer of firm, light yellowish grey silty sand with frequent angular chalk pebbles and inclusions of concrete and red fabric brick fragments. The dimensions of the deposit were 20.00m north-south, 2.00m east-west and 0.35m deep. The top of the layer was found to be at a level of 8.90m OD, which also represented the top of the trench. The layer was interpreted as 20th century made-ground.

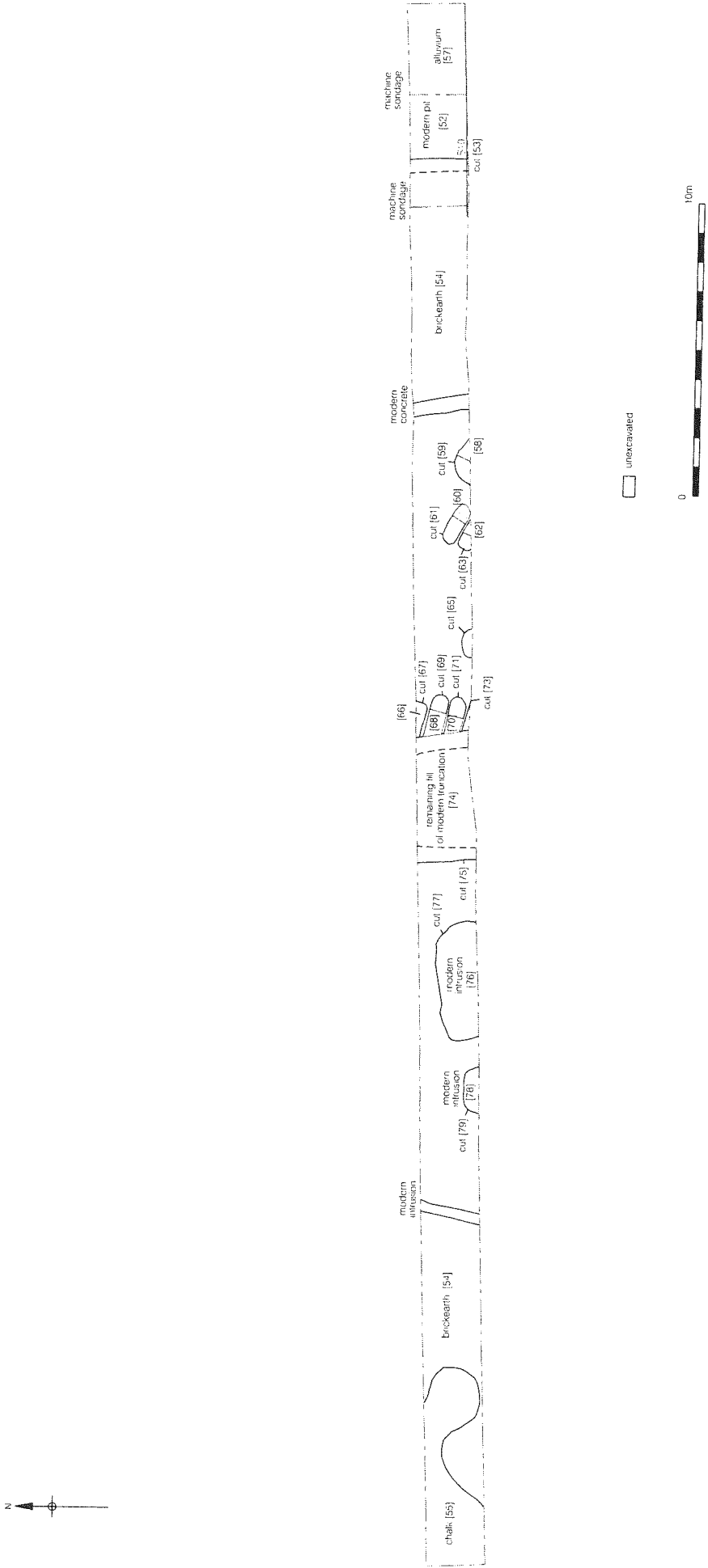


Figure 3
 Plan of Trench 1/2
 1:200

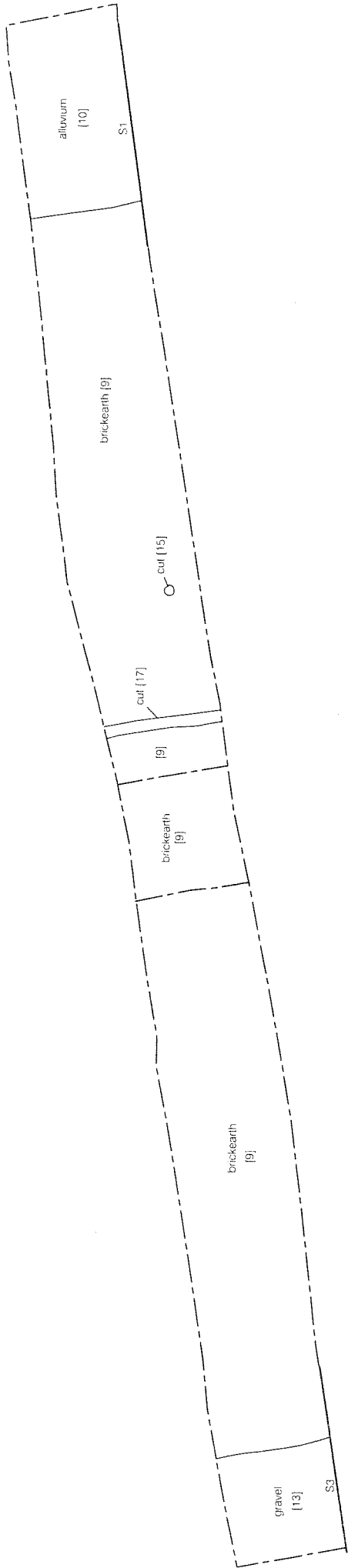


Figure 4
Plan of Trench 6
1:100

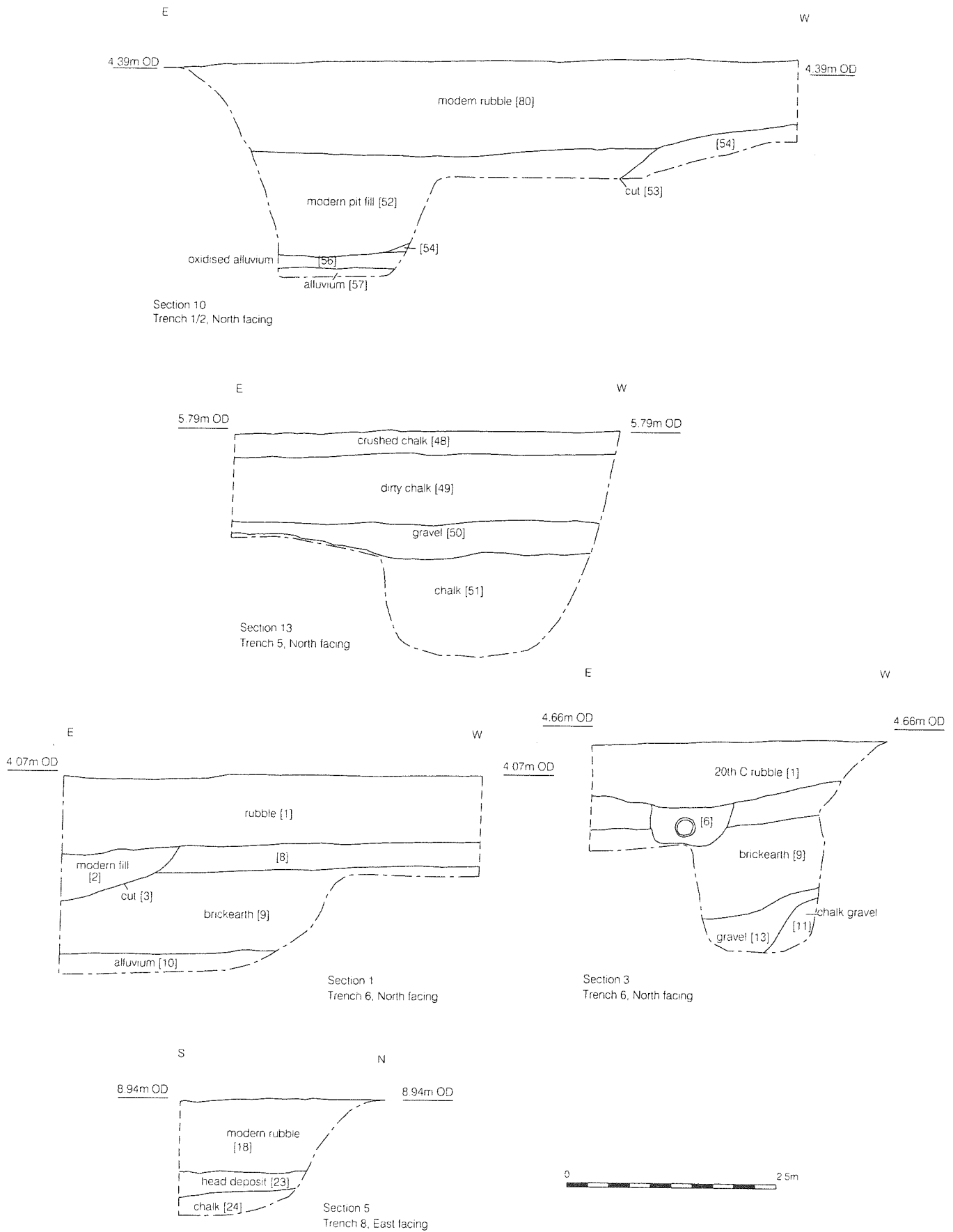


Figure 5
 Sections 10, 13, 1, 3, and 5
 1:60



Figure 6
 Area of surviving archaeology
 superimposed on proposed development
 1:1,250

8 INTERPRETATION AND CONCLUSIONS

- 8.1 One of the principal objectives of the archaeological evaluation was to determine the presence or absence of archaeological activity of any period. No archaeological remains, with the possible exception of the undated piece of bone recovered from the top of the brickearth in Trench 1, predated the Late 19th century.
- 8.2 The earliest datable evidence of human activity encountered in the evaluation was therefore Late 19th century and consisted of 7 possible bedding trenches and 1 probable posthole within the eastern end of Trench 1 and 1 possible posthole within Trench 6. An undated and unidentifiable fragment of bone was found in the top of the Brickearth at the eastern end of Trench 6.
- 8.3 The evaluation confirmed that the western third of the site (Zone C) had been massively truncated removing all pre twentieth century deposits as predicted in the archaeological impact assessment.
- 8.4 The evaluation has shown that potential archeological survival in the central Zone of the site (Zone B) was limited to a narrow strip along the eastern edge of the Zone.
- 8.5 The evaluation has confirmed the predicted archaeological potential of Zone A.
- 8.6 Any potential surviving pre late nineteenth century archaeological deposits in Zones A and B are now deeply buried under a colluvial "brickearth" and modern made ground.
- 8.7 Within Zone A the area of potential archaeological survival will comprise of public open space within the new development. Modern made ground in this area will be capped by 1m+ of clean imported topsoil. Together with the underlying modern made ground and colluvial brickearth this will provide a protective blanket over the underlying alluvium a minimum of 3.5m thick. Within the area of public open space no intrusions will penetrate the modern made ground and no dewatering is proposed.
- 8.8 Within that part of Zone B in which there is a potential for archaeological survival a number of new flat units are proposed. These will be built on piled foundations. All pile caps, ground beams and services will be contained within modern made ground. The piles will directly impact on 23m² of the area of potential archaeological survival representing 1.3% of this area in m².
- 8.9 Overall therefore it can be assessed that the proposed development will have a minimal archaeological impact, with the bulk of the area of potential archaeological survival unaffected by the proposed development.

9 ACKNOWLEDGMENTS

- 9.1 Pre-Construct Archaeology would like to thank Lorraine Darton of CgMs Consulting for commissioning the work on behalf of Bellwinch Homes.
- 9.2 The author would like to thank Josephine Brown for the illustrations and John Butler for his project management. Thanks also to Chris Tripp for his hard work and assistance with the fieldwork, Fiona Keith-Lucas for the surveying and Lisa Lonsdale for technical and logistical support.

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Appendix 1- Context Descriptions

Context	Plan	Section	Sample	Photo	Phase	Trench	Type	Description
1	6	1, 2, 3	*	Y	3	6	Layer	20th century made ground
2	6	1	*	Y	3	6	Fill	Fill of [3]
3	6	1	*	Y	3	6	Cut	20th century intrusion
4	6	2	*	Y	3	6	Fill	Fill of [5]
5	6	2	*	Y	3	6	Cut	20th century intrusion
6	6	3	*	Y	3	6	Fill	Fill of [7]
7	6	3	*	Y	3	6	Cut	20th century service trench
8	6	1,2,3	*	Y	3	6	Layer	20th century made ground
9	6	1,2,3	*	Y	1	6	Layer	Brickearth "Head" deposit
10	6	1	*	Y	1	6	Layer	Alluvial silt and clay
11	6	3	*	Y	1	6	Layer	Chalk gravel
12	Void	Void	Void	Void	Void	Void	Void	Void
13	6	3	*	Y	1	6	Layer	Gravel
14	6	*	*	Y	2	6	Fill	Fill of [15]
15	6	*	*	Y	2	6	Cut	Possible post-med post hole
16	6	*	*	Y	3	6	Fill	Fill of [17]
17	6	*	*	Y	3	6	Cut	20th century service trench
18	8	4, 5	*	Y	3	8	Layer	20th century made ground
19	8	4	*	Y	3	8	Fill	Fill of [20]
20	8	4	*	Y	3	8	Cut	20th century intrusion
21	8	4	*	Y	3	8	Fill	Fill of [22]
22	8	4	*	Y	3	8	Cut	20th century intrusion
23	8	4, 5	*	Y	1	8	Layer	Brickearth "Head" deposit
24	8	5	*	Y	1	8	Layer	Chalk bedrock
25	7	6, 7	*	Y	3	7	Layer	20th century made ground
26	7	7	*	Y	3	7	Fill	Fill of [27]
27	7	7	*	Y	3	7	Cut	20th century intrusion
28	7	*	*	Y	3	7	Fill	Fill of [29]
29	7	*	*	Y	3	7	Cut	20th century intrusion
30	7	6, 7	*	Y	1	7	Layer	Brickearth "Head" deposit
31	5	8	*	Y	3	5	Layer	20th century made ground
32	5	8	*	Y	1	5	Layer	Brickearth "Head" deposit
33	5	8	*	Y	1	5	Layer	Boyn Hill Gravel
34	3	9	*	Y	3	3	Layer	20th century made ground
35	3	*	*	Y	3	3	Fill	Fill of [36]
36	3	*	*	Y	3	3	Cut	20th century made ground
37	3	*	*	Y	3	3	Fill	Fill of [38]
38	3	*	*	Y	3	3	Cut	20th century intrusion
39	3	9	*	Y	1	3	Layer	Chalk bedrock
40	4	10	*	Y	3	4	Layer	20th century made ground
41	4	*	*	Y	3	4	Fill	Fill of [42]
42	4	*	*	Y	3	4	Cut	20th century intrusion
43	4	*	*	Y	3	4	Fill	Fill of [44]
44	4	*	*	Y	3	4	Cut	20th century intrusion
45	4	*	*	Y	3	4	Fill	Fill of [46]
46	4	*	*	Y	3	4	Cut	20th century intrusion
47	4	10	*	Y	1	4	Layer	Chalk gravel
48	5	8	*	Y	3	5	Layer	20th century made ground

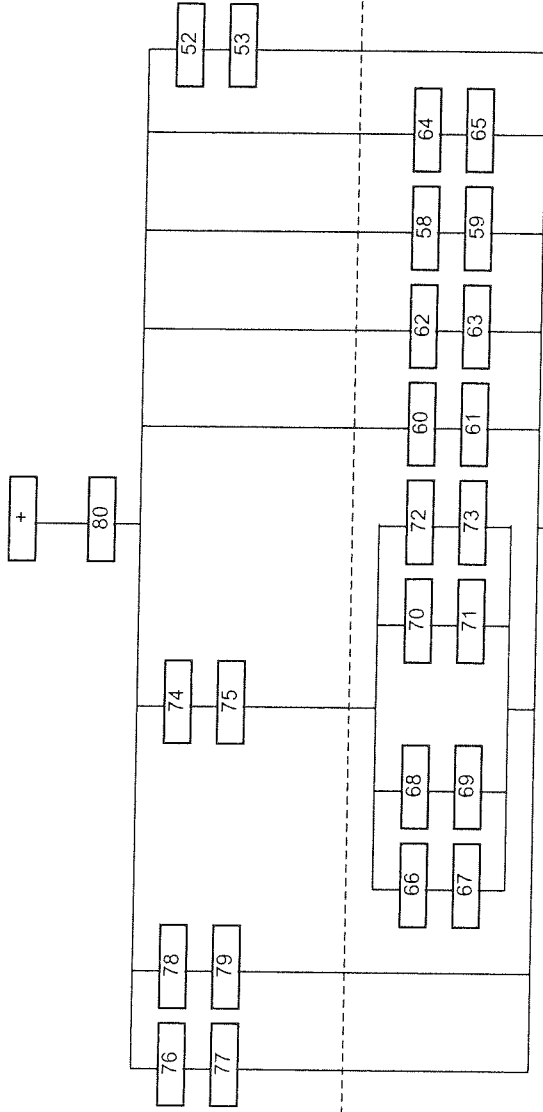
49	5	8	*	Y	3	5	Layer	20th century made ground
50	5	13	*	Y	1	5	Layer	Boyn Hill Gravel
51	5	8, 13	*	Y	1	5	Layer	Chalk bedrock
52	1	10	*	Y	3	1	Fill	Fill of [53]
53	1	10	*	Y	3	1	Cut	20th century intrusion
54	1	10, 11, 12	*	Y	1	1	Layer	Brickearth "Head" deposit
55	1	12	*	Y	1	1	Layer	Chalk bedrock
56	1	10	*	Y	1	1	Layer	Humic-rich alluvium
57	1	10	*	Y	1	1	Layer	Alluvial silt and clay
58	1	*	*	Y	2	1	Fill	Fill of [59]
59	1	*	*	Y	2	1	Cut	19th century bedding trench
60	1	*	*	Y	2	1	Fill	Fill of [61]
61	1	*	*	Y	2	1	Cut	19th century bedding trench
62	1	*	*	Y	2	1	Fill	Fill of [63]
63	1	*	*	Y	2	1	Cut	19th century bedding trench
64	1	*	*	Y	2	1	Fill	Fill of [65]
65	1	*	*	Y	2	1	Cut	19th century posthole
66	1	*	*	Y	2	1	Fill	Fill of [67]
67	1	*	*	Y	2	1	Cut	19th century bedding trench
68	1	*	*	Y	2	1	Fill	Fill of [69]
69	1	*	*	Y	2	1	Cut	19th century bedding trench
70	1	*	*	Y	2	1	Fill	Fill of [71]
71	1	*	*	Y	2	1	Cut	19th century bedding trench
72	1	11	*	Y	2	1	Fill	Fill of [73]
73	1	11	*	Y	2	1	Cut	19th century bedding trench
74	1	11	*	Y	3	1	Fill	Fill of [75]
75	1	11	*	Y	3	1	Cut	20th century intrusion
76	1	*	*	Y	3	1	Fill	Fill of [77]
77	1	*	*	Y	3	1	Cut	20th century intrusion
78	1	*	*	Y	3	1	Fill	Fill of [79]
79	1	*	*	Y	3	1	Cut	20th century intrusion
80	1	11, 12	*	Y	3	1	Layer	20th century made ground

Appendix 2- Site Matrix

Appendix 2- Site Matrix

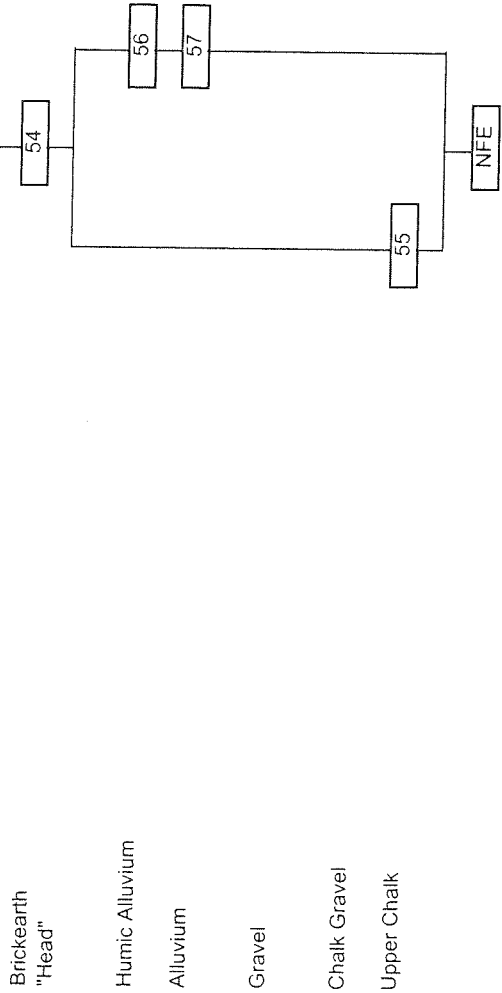
Tr. 1

Phase 3-
20th Century



Phase 1- Natural

Phase 1- Natural



Brickearth
"Head"

Humic Alluvium

Alluvium

Gravel

Chalk Gravel

Upper Chalk

Appendix 2- Site Matrix

Phase 3-
20th Century

Made Ground

Modern
Intrusions

Made Ground

Phase 2-
19th Century
Cut Features

Phase 1 - Natural

Brickearth
"Head"

Humic Alluvium

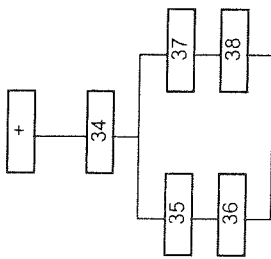
Alluvium

Gravel

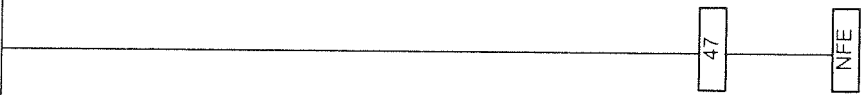
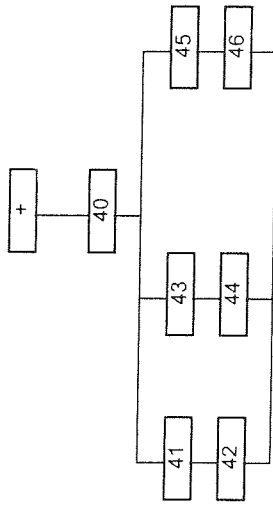
Chalk Gravel

Upper Chalk

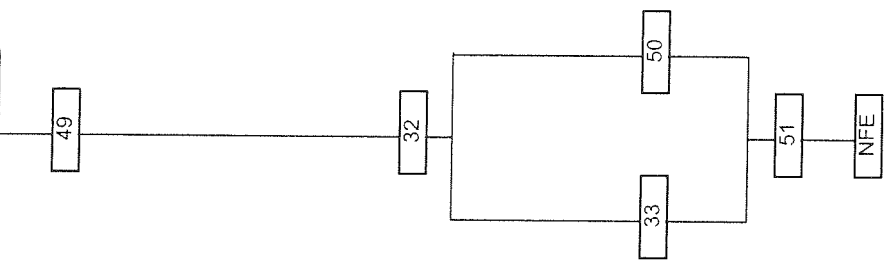
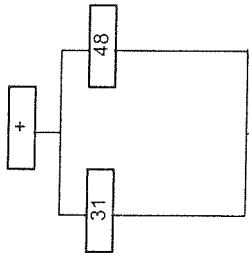
Tr 3



Tr 4



Tr 5



Appendix 2- Site Matrix

Phase 3-
20th Century

Made Ground

Modern
Intrusions

Made Ground

Phase 2-
19th Century
Cut Features

Phase 1 - Natural

Brickearth
"Head"

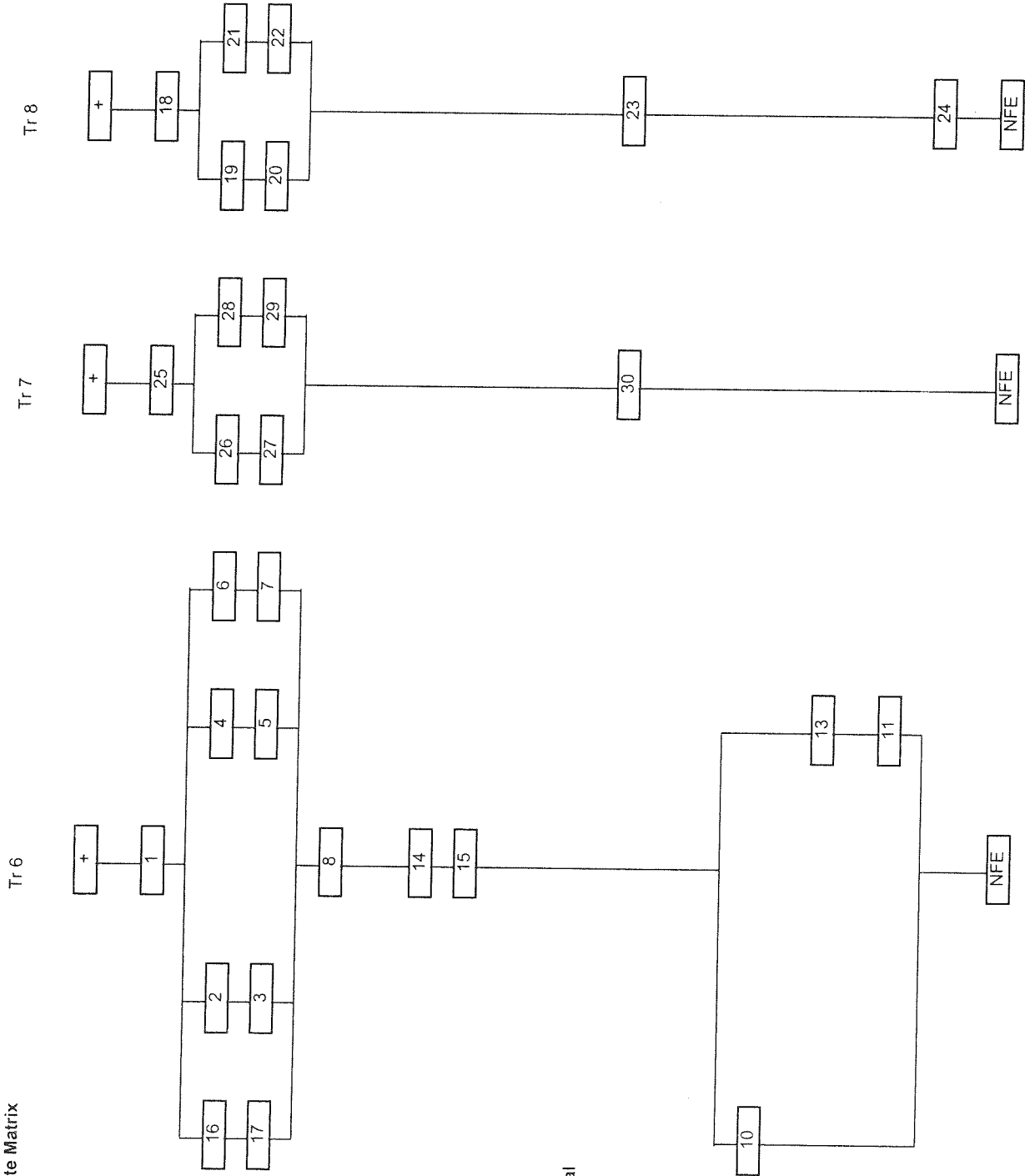
Humic Alluvium

Alluvium

Gravel

Chalk Gravel

Upper Chalk



APPENDIX 3 OASIS DATA COLLECTION FORM

OASIS ID: preconst1-10306

Project details

Project name Former Korsnas Site, Galley Hill Road, Swanscombe, Kent

Short description of the project

An archaeological evaluation consisting of 8 trenches was undertaken at the site. With the exception of Trench 7 in the northwest of the site, all the trenches contained Upper Chalk and/or chalk gravel. Chalk gravel, derived from weathering of the Upper Chalk, was observed in the centre, east and northwest areas of the site. Truncated Head deposits were identified in trenches 7 and 8. A deposit of gravel overlying the chalk was recorded in Trench 5 and the western end of Trench 6 in the southeast area of the site. This gravel although Pleistocene does not fall within the elevation of the Boyn Hill gravels. A layer of alluvium was observed sealing the gravel in the eastern ends of Trench 2 and 6 as mapped in the British Geological Survey. Within Trench 1/2 where not sealed by an overlying "Brickearth" this alluvium had oxidized to a much darker colour which was initially thought to represent a peat deposit. However on examination the deposit was not found to have a significant organic content. In Trenches 1, 2, 5 and 6 a "Brickearth" deposit was identified thought to be of colluvial origin. This deposit comprising a red brown, grey brown silt is thought to represent downslope erosion of the Head deposits, which lay on the upslope part of the site, into the Ebbsfleet Valley. An undated and unidentified fragment of animal bone was recovered from the top of the "brickearth" in the southeast of Trench 6. Late nineteenth century features consisting of a posthole in Trench 6 and a series of bedding trenches and a posthole in Trench 1, were found in the southeast area of the site. All the trenches contained 20th century intrusions, which were sealed by 20th century made-ground. Other than the undated fragment of animal bone in Trench 6, no pre-late 19th century archaeological remains were encountered anywhere on the site.

Project dates Start: 31-08-2005 End: 06-09-2005

Previous/future work No / Not known

Any associated project reference codes KGHR 05 - Sitecode

Type of project Field evaluation

Current Land use Vacant Land 1 - Vacant land previously developed

Methods & techniques 'Sample Trenches'

Development type Housing estate

Prompt Direction from Local Planning Authority - PPG16

Position in the planning process	After full determination (eg. As a condition)
Project location	
Country	England
Site location	KENT DARTFORD SWANSCOMBE AND GREENHITHE Former Korsnas Site, Galley Hill Road, Swanscombe, Kent
Postcode	DA11 9XX
Study area	62500.00 Square metres
National grid reference	TQ 6125 7475 Point
Height OD	Min: 3.00m Max: 11.00m
Project creators	
Name of Organisation	Pre-Construct Archaeology Ltd
Project brief originator	CgMs Consulting
Project design originator	Lorraine Darton
Project director/manager	Jon Butler
Project supervisor	Rebecca Lythe
Sponsor or funding body	Bellwinch Homes
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Evaluation at the Former Korsnas Site, Galley Hill Road, Swanscombe, Kent
Author(s)/Editor(s)	Lythe, R.

Date	2005
Issuer or publisher	CgMs Consulting
Place of issue or publication	London
Description	A4 bound report
Entered by	jon butler (jbutler@pre-construct.com)
Entered on	21 September 2005

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