Wessex Archaeology

Former Grill Bar (The Mile House) London Road, St Albans, Hertfordshire

Archaeological Evaluation Report

Ref: 65130.03

May 2007

FORMER GRILL BAR (THE MILE HOUSE) LONDON ROAD, ST ALBANS, HERTFORDSHIRE

Archaeological Evaluation Report

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Summary

Wessex Archaeology was commissioned by CgMs Consulting on behalf of Weston Homes to undertake an archaeological evaluation prior to redevelopment of land at the former Grill Bar (The Mile House), London Road, St Albans, Hertfordshire (hereafter 'the Site') centred on National Grid Reference 516264 205901.

The Site was originally part of land owned by Richard Lee in the mid-16th century, which lay within a boundary, comprised of a bank and ditch, that encircled his estate. The bank is still partly visible today and runs along the southern side of London Road. It was anticipated that the ditch associated with this estate boundary may be encountered on the Site. However, no evidence for any ditch was identified and any historical and archaeological horizons that may had once existed had been severely truncated by more recent (20th century) building activity associated with the construction of the Grill Bar. It is possible that the ditch, if it survives, lies directly to the north of the Site and under the pavement associated with London Road.

The evaluation was undertaken from the 9th -11th April 2007.

Simon West, District Archaeologist for St Albans District Council requested that an archaeological watching brief should be undertaken during the groundworks for the new development. The watching brief was carried out on the 5th June 2007. No evidence of the boundary ditch or other archaeological features were identified during the monitoring of the groundworks. Details of the watching brief are set out in **Appendix 2**.

FORMER GRILL BAR (THE MILE HOUSE)
LONDON ROAD, ST ALBANS, HERTFORDSHIRE

Archaeological Evaluation Report

Acknowledgements

Wessex Archaeology is grateful to Duncan Hawkins of CgMs Consulting for commissioning the evaluation.

The project was managed by Damian De Rosa for Wessex Archaeology and directed in the field by Catriona Gibson, assisted by Amelia Ness. The watching brief was undertaken in the field by Neil Fitzpatrick. The illustrations were prepared by Will Foster. The report was written by Catriona Gibson.

FORMER GRILL BAR (THE MILE HOUSE) LONDON ROAD, ST ALBANS, HERTFORDSHIRE

Archaeological Evaluation Report

1 INTRODUCTION

1.1 Project Background

1.1.1 Wessex Archaeology was commissioned by CgMs Consulting acting on behalf of Weston Homes to undertake an archaeological field evaluation prior to redevelopment of land at the former Grill Bar (The Mile House), London Road, St Albans, Hertfordshire (hereafter 'the Site') centred on National Grid Reference 516264 20590.

1.1.2 The work was carried out prior to the redevelopment of the Site (residential construction) comprising the construction of two three-storey detached houses and associated works.

1.1.3 A Written Scheme of Investigation for the archaeological evaluation was prepared by Wessex Archaeology (WA 2007) and submitted to and approved by Simon West, Archaeological Advisor to St Albans District Council, prior to the commencement of fieldwork.

2 THE SITE

2.1 Geology and Topography

2.1.1 The Site, comprising an L-shaped parcel of land covering an area of *c*.0.3ha lies at the corner of London Road, which bounds the Site to the northeast and Mile House Lane to the southeast, from where the Site is accessed (**Figure 1**).

2.1.2 The Site is flat lying at *c*.89m above Ordnance Datum (aOD). The underlying geology within the Site has been identified as Boulder Clay (Geological Survey of Great Britain 1978, Sheet 239 (Hertford).

2.1.3 The majority of the Site is overgrown and lies under tarmac, within the car park of the former Grill Bar (The Mile House), which was demolished in 2004.

2.2 Archaeological and Historical Background

2.2.1 The Site is situated on land once owned by Richard Lee, one of the main property owners in mid-sixteenth century St Albans. As a close advisor to Henry VIII, Lee was in a position to exploit the Dissolution of the Monasteries. In 1534, he became bailiff and farmer of the medieval Priory of Sopwell, and in 1549 began alterations, calling his new house 'Lee Hall'. Between 1561 and 1562 Richard Lee had a new park of 175 acres laid out and walled, using monastic rubble. The old medieval London Road, which ran across this new park, was diverted following the granting of a licence

in1562. Hare's map of 1634 shows the location of the 'Old London Road' and a boundary wall, apparently constructed of coursed layers encircling the estate, cutting across this. Lee was given permission to undertake this work by inquisition, which took place on 8 January 1561-2.

2.2.2 By 1902, the boundary bank was still described as having 'a well defined ridge of earth planted with a thorn and bramble hedge'. Earlier in 1901, some 50 yards of the bank were cut through, producing 150 large fragments of carved Totternhoe stone work. The site of the cutting was 'Mr Glovers property', the first house east of the Railway Bridge.

2.2.3 The boundary survives as a intermittent bank for approximately 710m along the south side of London Road. The earthwork starts at the Railway Bridge and continues to Mile House Lane corner at which point it turns at right angles south and continues down the west side of Mile House Lane. Along London Road, it has been removed in places for driveways, and it is not easily evident along Mile House Lane. It may be present as the south-east as the boundary to the golf course on the north side of the Lane. There are just hints of a continuation of an earthwork to the east of Mile House Lane along London Road, but this may not be Lee's boundary but simply associated with the construction of London Road.

2.2.4 Rescue excavations in 1996 at No 3 Mile House Lane, opposite the Site, uncovered a probable lime kiln, which may date to the mid-sixteenth century, when Lee was constructing 'Lee Hall'. It is suggested that the kiln was used, perhaps only for a short period, during the construction of this or other buildings, or during the construction of a wall delineating the curtilage. It lies just outside the north-east boundary of Richard Lee's land.

2.2.5 The Site sits in one of the most important early post-medieval sites within St Albans. The Tudor boundary line runs along London Road, turns down Mile House Lane and is within the Site. Evidence from across Mile House Lane suggests that there is the possibility for additional structures, associated with this enclosure, to be present.

2.3 Geotechnical Investigations

2.3.1 In August 2003 ground investigations comprising three deep boreholes and six trial pits (TP) (**Figure 1**) were undertaken by KF Geotechnical within the Site (**Appendix 3** - TP6 is not shown on the location plan, but the report text states it was located at the northwest corner of the Site). The investigations identified in two boreholes (BHA and BHC) within the area of the car park, 0.50m (in the north) to 1.30m (in the south) of modern made ground directly below the tarmac/concrete surface. The made ground was observed to overlie the natural brickearth. Trial pits (TP1 – TP3) carried out next to the then still standing public house only identified modern material contained within the foundation cut for the building. Further exploratory work (BHB, BH4, BH5 and TP6) was undertaken in the northwest corner of the Site covered in trees and revealed directly below the turfline/surface the natural geology (**Appendix 3**).

3 AIMS AND OBJECTIVES

3.1 Archaeological Field Evaluation

3.1.1 The aims of the archaeological field evaluation were:

- clarify the presence/absence and extent of any buried archaeological remains within the Site that may be threatened by development.
- identify, within the constraints of the evaluation, the date, character, condition and depth of any surviving remains within the Site.
- assess the degree of existing impacts to sub-surface horizons and to document the extent of archaeological survival of buried deposits.
- specific aims will be to investigate evidence and survival for the presence/absence and extent of the documented Tudor boundary.

4 METHODOLOGY

4.1 Fieldwork

4.1.1 The Evaluation was carried out in accordance with the Written Scheme of Investigation (WA 2007) and the relevant guidance given in the Institute of Field Archaeologist's *Standard and Guidance for Archaeological Field Evaluation* (revised 1999)

4.1.2 The archaeological evaluation was undertaken between the 9th – 11th April 2007.

4.1.3 The evaluation comprised the excavation of five trial trenches, comprising 3 No 20m x 1.8m trenches (Trenches 1-3) and 2 No 10m x 1.8m trenches (Trenches 4-5) (**Figure 1**).

4.1.4 The trenches were excavated under constant archaeological supervision using a wheeled 180° excavator equipped with a 1.8m wide toothless bucket.

4.1.5 Mechanical excavation continued to the top of archaeological horizons or to the surface of the natural geological deposits or stopped at a depth of 1.20m, whichever was encountered first.

4.1.6 All trench spoil was scanned for finds.

4.1.7 All archaeological features, horizons and natural deposits encountered in the evaluation were fully recorded on Wessex Archaeology's *pro forma* record sheets. A full photographic (digital, and, where appropriate, 35mm black and white prints and colour transparencies) and graphic record was kept. The site drawings drawn were drawn at an appropriate scale, typically 1:10 for sections and 1:20 for plans

4.1.8 All trenches were located in relation to the Ordnance Survey national grid using a Leica GPS 500 Smart Rover, and all archaeological features were related to Ordnance Survey datum.

4.1.9 On completion of recording the trenches were backfilled in the approximate order in which they were opened.

5 EVALUATION RESULTS

5.1 Introduction

5.1.1 The results set out in this report represent a synthesis of the principal archaeological features investigated. A summary of the deposits encountered in each trench is given in Appendix 1

5.1.2 Only modern disturbance or features were encountered within the trenches. Most of the soil horizons encountered, comprising building rubble, related to activity associated with the use of the Site as the former Grill Bar.

5.2 Results

Trenches 1 & 3

5.2.1 In Trenches 1 and 3 which were aligned north-west – south-east and parallel to the London Road edge of the Site, natural geology was encountered at a depth of between 1.10m and 1.20m. No evidence for a ditch that may have been associated with the Tudor Boundary was identified. Given the close proximity of these trenches to London Road and therefore the 16th century boundary bank, these two trenches were thought to be the most likely candidates for providing evidence for the associated boundary ditch. A modern treethrow (**105**) was noted in Trench 1 (**Figures 1, 2 and Plate 2)** and a number of modern services were identified in Trench 3 (**Figure 1 and Plate 4**).

Trench 2

5.2.2 In Trench 2 (**Figure 1 and Plate 3**), the majority of deposits related to modern made ground horizons, and natural geology was encountered at a depth of 1m below the present ground surface. At the eastern end of the trench, a number of modern services were encountered and the opening of the trench was curtailed 2m short of its proposed full extent of 20m. No archaeological features or finds were encountered.

Trench 4

5.2.3 Trench 4 (**Figure 1 and Plate 5**) had been subject to major modern disturbance, as a result of its direct location over the former Grill Bar. A series of services were encountered in the south-eastern part of this trench, including a man hole cover and two water pipes. Modern wall footings associated with the foundations of the Grill Bar were present in the central and western parts of the Trench, truncating all earlier deposits in this area. Natural geology was noted at 1.25m below the modern ground surface demonstrating that any previously surviving archaeological horizons would have been completely truncated by the former building. No archaeological features or finds were identified.

Trench 5

5.2.4 Trench 5 (**Figures 1, 2 and Plate 6**) was opened within the former garden of the Grill Bar which had been laid to grass. After removal of modern topsoil and made ground, natural geology was encountered at a depth of 0.6m in the southern part of the trench and 0.45m in the northern part of the trench.

This confirms the results of the geological borehole survey in this area, which had encountered a shallow depositional sequence (**Appendix 3**). A large modern rubbish pit (**504**) (**Figures 1 and 2**) at least 2.5m in diameter, truncated the natural geology in the southern part of the trench. No archaeological features or finds were retrieved.

6 FINDS

6.1.1 Finds were recovered only from modern horizons, in Trenches 1, 2 and 3. These comprised two sherds of post-medieval pottery (**101** and **201**), one fragment of post-medieval roof tile (**201**), and a prehistoric flint flake (**301**). None of these finds have been retained as they all constitute residual material and debitage from wholly modern contexts.

7 ENVIRONMENTAL

7.1.1 No features or deposits suitable for environmental sampling were identified.

8 DISCUSSION

8.1.1 The Evaluation demonstrated that any archaeological horizons and features relating to post-medieval or earlier activity on the Site had been severely truncated and destroyed by modern building activity and services, particularly that associated with the construction of the Grill Bar.

8.1.2 The lack of any evidence for a ditch associated with the Tudor boundary may not simply be a result of modern truncation, since it is unlikely that even the significant modern disturbance identified on the Site would have completely removed a substantial and deep negative feature. It is not clear whether the ditch associated with the boundary lay to the south rather than the north of the bank. If it lay to the north it may survive under London Road. Even if the ditch lies to the south of the boundary, it is possible that it is situated to the north of the Site and just beyond the proposed area of development, under the pavement that runs along the southern side of London Road.

8.1.3 The results of the Evaluation were able to demonstrate that the Site has a low archaeological potential. The lack of evidence from any of the trenches implies that the ditch associated with the 16th century boundary is not present within the confines of the Site. Any archaeological features and finds that may originally have existed within the Site have likely been completely removed and disturbed by more recent building activity.

9 ARCHIVE STORAGE AND CURATION

9.1 Museum

9.1.1 It is recommended that the project archive is deposited with the St Albans Museums Service.

9.2 Archive Storage

9.2.1 The archive is currently stored at Wessex Archaeology under the Project Code 65130.

9.2.2 The complete site archive, which will include records, plans and photos, will be prepared to comply with guidelines set out in *Environmental Standards for the permanent storage of excavated material from archaeological sites* (UKIC 1984, Conservation Guidelines 3), and *Guidelines for the preparation of excavation archives for long-term storage* (Walker 1990).

9.3 Copyright

9.3.1 The full copyright of the written/illustrative archive relating to the site will be retained by Wessex Archaeology Ltd under the *Copyright, Designs and Patents Act* 1988 with all rights reserved. The Museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profitmaking, and conforms to the Copyright and Related Rights regulations 2003.

9.4 Security Copy

9.4.1 In line with current best practice, on completion of the project a security copy of the paper records will be prepared, in the form of microfilm. The master jackets and one diazo copy of the microfilm will be submitted to the National Monuments Record Centre (Swindon); a second diazo copy will be deposited with the paper records at the Museum, and a third diazo copy will be retained by Wessex Archaeology.

10 REFERENCES

Geological Survey of Great Britain 1978 Sheet 239 (Hertford)

KF Geotechnical 2003. *Report on Ground Investigation at The Grill Bar, London Road, St Albans.* Ref: S/080320/001

Wessex Archaeology 2007. *Former Grill Bar (The Mile House), London Road, St. Albans, Hertfordshire. Written Scheme of Investigation for an Archaeological Field Evaluation*. Ref: 65130.01

Appendix 1. Trench Summary Tables

Trench 1. Dimensions. 20m x 1.8m x 1.12m deep. Ground level = 88.70m aOD

Context Number	Description	Depth (m)
101	Modern concrete	0-0.18m
102	Broken up asphalt and hard standing. Modern levelling layer for Grill Bar carpark	0.05-0.45m
103	Made ground. Mid brown clay with modern brick and tile fragments	0.45-0.71m
104	Fill of tree throw 105. Orange-brown silty clay	0.71-1.07
105	Cut of tree throw. Probably fairly modern.	0.71-1.07m
106	Natural geology. Orange brown silty clay with some flint pebbles	1.07-1.12m+

Trench 2. Dimensions. 20m x 1.8m x 1.12m deep. Ground level = 88.80m aOD

Context Number	Description	Depth (m)
201	Modern concrete	0-0.23m
202	Made ground. Dark grey greasy clay with frequent root, modern tile and clinker	0.23-0.65m
203	Made ground – dark brown silty clay with small fragments of tile & brick etc.	0.65-0.9m
204	Natural geology. Orange-brown silty clay with occasional flint cobbles	0.9m+

Trench 3. Dimensions. 18m x 1.8m x 1.20m deep. Ground level = 88.85m aOD

Context Number	Description	Depth (m)
301	Modern Concrete	0-0.15m
302	Made ground – levelling layer comprising rubble, stone & brick fragments	0.15-0.30m
303	Black asphalt layer	0.3-0.45m
304	Demolition layer containing modern brick walls that formed the foundations of the Grill Bar	0.45-1.05m
305	Levelling layer of redeposited natural under the foundations of the modern Grill Bar. Brown sandy clay with some brick fragments and occasional flint cobbles	1.05-1.25m+
306	Made ground – dark brown silty clay with some modern CBM inclusions	0.45-1.20m
307	Natural geology – orange brown silty clay with stone and flint inclusions	1.10-1.2m+

Trench 4. Dimensions. 12m x 1.8m x 1.25m deep. Ground level = 88.30m aOD

Context Number	Description	Depth (m)
401	Modern levelling horizon – clinker and asphalt. Would have formed earlier tarmac surface	0-0.15m
402	Modern brick course – would have formed modern foundations for the Grill Bar.	0.15-0.70m
403	Made ground – mixed and mottled clayish silt with frequent modern tile and brick inclusions	0.70-1.06m
404	Made ground - dark grey silty clay with charcoal, CBM and plaster fragments. Elements of the footings of the modern Grill Bar	1.06-1.25m
405	Natural geology. Orange silty clay with occasional flint nodules	1.25m+

Trench 5. Dimensions. 11m x 1.8m x 0.6m deep. Ground level = 88.56m aOD

Context Number	Description	Depth (m)
501	Modern topsoil with frequent roots. Formed topsoil for the pub garden	0-0.2m
502	Made ground – levelling layer. Dark brown silty clay with frequent modern brick and tile and much root action	0.2-0.55m
503	Natural geology. Orange silty clay with frequent flint cobbles.	0.45-0.6m+
504	Modern rubbish pit cut – at least 2.5m in diameter	
505	Fill of pit 504. Full of modern waste including rusty metal, used oil drums and tennis balls	

Appendix 2. Archaeological Watching Brief

Following the undertaking of the field evaluation at the Site and given the results presented in the archaeological evaluation report a request was made by Simon West, District Archaeologist for St Albans District Council that an archaeological watching brief should be undertaken.

The request was made on the basis that the small percentage by area of the trial trenching, and the gap between the trenches and the modern site boundary, did not rule out the possibility that the Sopwell boundary to Richard Lee's property may still survive, or that isolated features relating to this may also be present within the Site. It was requested that the watching brief should comprise the monitoring of groundworks on the area of the new build at the north end of the Site, and any ground reduction close to the Site boundary following the line of London Road.

The Site was visited on the 5th June 2007. Groundworks comprising ground clearance were already in progress and a layer of up to 1m of made ground had been spread over the majority of the Site.

The area close to the Site boundary following the line of London Road was seen to be covered in pieces of timber and concrete. Following consultation with the Site Manager it was established that this material was due for clearance so that temporary site accommodation could be placed in this area. It was further established that no ground reduction as part of the development was to be undertaken in this area. Therefore no potential impact on any possible remains of the Sopwell boundary or other archaeological features was proposed.

During the Site visit work was undertaken on the foundation trenches for the new build at the north end of the Site. The trenches measured 50cm wide by up to 3m deep. The top 1m of excavated material comprised of the made ground, which had been deposited across the Site. The natural London Clay was observed directly below the made ground. Owing to the limitations imposed by their width and depth it was not possible on practical and health and safety grounds to enter the trenches. The monitoring of the groundworks was only able to establish the presence of the made ground and the natural London Clay and no archaeological features or deposits were observed.

Given the nature of the groundworks being undertaken and monitored during the watching brief along with the results of the evaluation, which established major areas of modern disturbance associated with the former Grill Bar, it can be demonstrated that the current development will have no impact on any potential remains of the Sopwell boundary or any other archaeological features that may survive.

Appendix 3. Geotechnical Investigations

REPORT ON GROUND INVESTIGATION
AT
THE GRILL BAR
LONDON ROAD, ST ALBANS

CLIENT: WESTON HOMES GROUP PLC

DATE: 24 SEPTEMBER 2003 **REF:** S/080320/001

K F GEOTECHNICAL

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APPENDICES

1. INTRODUCTION

1.1 We were instructed by Weston Homes Group Plc, via Sub-Contract Order No. S-00000176, to carry out a ground investigation by means of continuous flight auger boreholes and hand augered boreholes and trial pits at the site of the Grill Bar, London Road, St Albans, Herts.

1.2 The purpose of the investigation was to determine ground conditions to assist in the design of foundations and basements for a proposed block of flats on the site.

1.3 The site work took place on the 21 and 26 August 2003.

2. DESCRIPTION OF THE SITE

2.1 The site at present is occupied by a public house known as The Grill Bar. The site is 'L' shaped in plan with the main section occupying a corner plot between London Road, which runs adjacent to the long north edge of the site, and Milehouse Lane, which marks the east boundary. The section forming the 'L' extend to the south at the southwest corner and is currently open space with several trees and shrubs growing within it. The public house occupies the front right corner, with tarmaced areas between the public house, London Road and Milehouse Road respectively. The main area of the site is then occupied by tarmac covered car parking.

2.2 The site slopes downwards slightly from east to west and also from slightly from north to south.

2.3 Close to the southeast corner of the main building there are two deciduous trees growing close to the building. There are a row of sycamore trees marking the eastern edge of the open space, with further hawthorn and sycamore trees of varying heights marking the southern boundary of this area. Close to the southern edge of the car park there is a horse chestnut. The remaining trees and shrubs are relatively small and of mixed varieties.

2.4 The Geological Survey Sheet for the area, Sheet No 239 (Hertford), indicates that naturally occurring subsoil is Glacial Gravels overlying Upper Chalk. Glacial Gravels by their nature tend to be variable and can be clayey.

3. SITE WORK

3.1 The layout of the site and the location of our three mechanical flight auger boreholes and six hand excavated trial pits and boreholes are indicated on our Location Plan G/080320/101. The three deeper boreholes are logged on Sheets G/080320/A, B & C, whilst the hand trial pits/boreholes are logged on Sheets G/080320/1-6 respectively.

3.2 We originally intended to carry out four deep boreholes but we were unable to undertake the borehole near the public house due to the interference with the operation of the business.

3.3 Borehole A was put down close to the northwest corner of the main building within the car park and this revealed tarmac over fill material to 1.3m over a firm silty clay, changing at 2.4m to a silty clay with fine gravel and then at 3.7m to a stiff becoming very stiff silty clay/clayey silt. Below 4.7m we encountered occasional gravel and thin carbon deposits, this material was effectively proved to the base of the borehole at 12m.

3.4 The borehole was dry on completion but the base of the borehole had collapsed to a depth of 10.7m and no roots were found.

3.5 Borehole B was put down within the open space just to the south of the car parking area and this revealed turf over fill material to 300mm over a silty clay/clayey silt with occasional fine gravel becoming stiffer with depth to 1.5m. Below this we encountered a medium dense becoming dense gravelly sand and at 3.1m the material become so dense that we were unable to penetrate with the drill. The borehole was dry and open on completion. Roots of live appearance were noted to just under 1.0m with hair and fibrous roots observed to 3.0m.

3.6 Borehole C, towards the northwest corner of the car park, revealed tarmac and concrete over fill material to 600mm over a silty clay with fine gravel and carbon deposits, changing at 1.7m to a gravelly sandy clay. Between 2.1m and 2.4m there was a band of dense gravelly sand before changing back at 2.4m to a stiff silty clay becoming very stiff below 3.8m and changing at 4.9m to dense gravelly sand. At 6.5m this changed back to a silty clay and this overlay chalk at 8.6m, which was proved to the base of the borehole at 12.0m. The borehole was dry on completion although the clay was moist. A standpipe was installed to a depth of 5.0m.

3.7 The first of the hand excavated trial pits was put down against the southwest corner of the public house and revealed a 370mm thick concrete strip footing founded at 1.05m below ground level within a dense silty clayey gravelly sand.

3.8 Trial pit 2, at the southeast corner, encountered the top of the footing at 810mm but was unable to prove the underside due to the denseness of the material and the lack of working space. The natural material was a dense silty gravelly sand.

3.9 Trial pit 3, at the northeast corner, revealed a 240mm thick concrete strip footing supporting two courses of corballed brickwork and founded at an overall depth of 1.1m, this depth was still within fill material consisting of a dense gravelly sand with pieces of brick etc.

3.10 Trial pits 4 and 5 were excavated by hand within the open space and both of these encountered dense to very dense clayey sand or gravelly sand and this material was too dense to penetrate by hand below 0.7m in trial pit 4, and 0.3m in trial pit 5.

3.11 Trial pit 6 was put down at the northwest corner of the site just on the edge of the tarmac and this encountered a loose dark brown gravelly sand with roots, which was effectively put down to obtain samples for contamination testing.

3.12 Six samples were placed in suitable containers and sent the specialist laboratories for contamination testing. Samples were also taken from regular depths from each of the trial pits and boreholes and these were bagged and labelled and sent to our laboratories for appropriate geotechnical testing.

4. LABORATORY WORK

4.1. Moisture contents and liquid and plastic limits have been determined on various samples taken from the boreholes. At the time of writing this report these results are awaited and will be sent under separate cover. For safe bearing capacities and parameters for piling if necessary, we will rely on the SPT tests and these will be discussed later in the report.

5. CONTAMINATION TESTING

5.1 Six samples were sent to the specialist laboratories for contamination testing. The contaminands on which testing was carried out is as follows:

Arsenic	Water Soluble Boron
Chromium	Copper
Cadmium	Monohydric Phenols
Lead	Total Sulphates
Mercury	Sulphides
Selenium	Zinc
Nickel	Organic content by loss and ignition
	Speciated PAH

5.2 Those listed on the left above have Soil Guideline Values determined by the CLEA model and issued by the Environment Agency. This site is to be developed as flats with open space and the appropriate Soil Guideline Values are accordingly Residential Without Plant Uptake. When the measured concentrations are compared with this assessment criterion, there are no contaminands that exceed the appropriate Soil Guideline Value.

5.3 There are no established values for the right hand column above but reasonable assessments can be made with reference to various documents, including the Dutch Guidelines. On this basis there are elevated PAH totals near the surface of trial pits 1, 2, 3 and 5. It is possible that these high figures are related to elements of tarmac being in the samples and we would recommend returning to the site after demolition to take further samples and at a range of depth.

6. DISCUSSION

6.1 The ground investigation has revealed the anticipated geology with the material being a mixture of very dense sands and gravels and gravelly clays. These will overlie chalk but the chalk was only encountered in our borehole C at a depth of 8.6m. The proposed building is to have an underground car park and this will be constructed in the vicinity of our boreholes A and C. From the evidence of these boreholes most of the excavations are likely to be within a sandy silty clay with occasional fine gravel but with bands of gravel and sand likely at more or less any depth. At the time of our investigation the boreholes were dry and the sides of the boreholes were stable down to the proposed basement depth of just over 3.0m. However, our investigations were carried out in August 2003 during a very hot dry summer. There may well be perched water tables during winter months especially as there are alternating bands of clay and granular material. We would recommend designing the basement walls on the basis of a permanent water table lying at 1.5m from ground level.

6.2 Based on a plasticity index of 30, we would recommend a φ' for the clay soils of 25°. For the cohesionless soils we would estimate a critical state angle of shearing resistance of 34° and a peak effective angle of shearing resistance φ' max of 38° based on an 'N' value from the SPT testing of 30. The bulk weight of both the granular and the cohesive materials can be taken as 20kN/m^3.

6.3 The SPT 'N' values or in-situ vane test results as appropriate at approximate formation level for the basement are 24 blows and 106kN/m^2 respectively. An 'N' value of 24 equates to a safe bearing capacity of just over 250kN/m^2, while the bearing capacity in the clay will be approximately 210kN/m^2 based on a strip footing no more than 1.0m wide. For pad footings it might be possible to take a slightly higher value depending on the depth and the dimensions. For those parts of the building that might be shallow founded, the investigation indicates safe bearing capacities in the region of 150kN/m^2 at 1.0m depth, and somewhat more than this where the soil is granular.

6.4 Where the boreholes encountered clay they were away from the influence of trees, whilst near the trees the material was found to be granular. On this basis, there is no requirement for precautions against heave or shrinkage of the clay subsoil due to the action of the roots of trees. Furthermore, the depth of the basement will extend below any likely active root growth.

6.5 For materials that are to be disposed off site an assessment of the disposal requirements for waste soil derived from excavations may be carried out based on using the *Interim Guidance on the Disposal of 'Contaminated Soil'*, Second Edition May 1997 published by the Environment Agency. Some regions may still use local classifications established by the previous County Waste Regulation Authorities. Some regions also take a direct role in categorising waste and advising landfill sites for disposal. Other regions do not provide such a service and rely on individual landfill operators using their own judgement whether their facility can accept the material under the terms of their landfill licence.

6.6 It is recommended that the Waste Division of the relevant EA region be contacted to determine local procedures and that the operator of the landfill proposed for disposal be asked to confirm that the waste is considered to be acceptable under the term of their licence.

6.7 Our investigation would indicate that the material below the surface is uncontaminated and should be classified as inert in terms of disposal off-site.

6.8 The ground and ground water conditions encountered during our investigation would indicate that the basements can be constructed by means of a conventional retaining wall but we would recommend the checking of the water monitoring standpipe during the coming months to ensure that the water does not tend to rise above proposed basement formation level during periods of normal rainfall. We are concerned that the bands of gravel and sand could be water bearing during periods other than dry summers. If this is the case then there could be difficulties with the de-watering of the excavations during construction.

6.9 The contamination testing has indicated some slightly elevated PAH values within the upper material. Considering the past and current use of the site it is unlikely that this slight contamination would extend to any significant depth but we would advise further sampling following demolition and site strip in order to confirm this view. Furthermore, there may be stored materials within the public house, especially in the cellar, which might be a source of some contamination and hence further sampling might be required in these areas.

W J C Wallace

K.F. Geotechnical

85 Alexandra Road
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Tel: 01252 518821

Borehole A		Ref: G/080320/A
Sheet 1 of 3	Scale: N/A	Date: 21Aug 2003
Client: Weston Homes Group Plc		
Equipment & Method: 150mm ϕ CFA	Location: The Grill Bar, London Road, St Albans	

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
G.L	Tarmac over concrete (not re-inforced)	0.15							
0.15				D			0.15	No roots observed	
	MADE GROUND: Compact, crushed concrete & brick fragments & sand.	0.15							
0.30									
	MADE GROUND: Mid to dark brown, mottled orange & black, sandy, very silty clay/clayey silt with gravel, tarmac & brick fragments.	0.70		D			0.50		
1.00				D	SPT	1,1, 1,2, 1,2 N = 6	1.00		
	MADE GROUND: Soft, as above.	0.30							
1.30									
	Firm, mid brown/orange, mottled dark brown, sandy, very silty CLAY with gravel, thinly laminated with orange silt & fine sand.	1.10		D	SPT	3,5, 6,6, 6,6 N = 24	2.00		
2.40									
	Stiff, mid brown/orange, mottled dark brown, grey veined, slightly sandy, silty CLAY with fine gravel.	1.30		D	V	104 110	3.00		
3.70									
	Stiff, mid brown/orange, mottled dark brown, light brown veined, sandy, very silty CLAY/clayey SILT.	0.30		D	SPT	5,6, 7,7, 8,8 N = 30	4.00		
4.00									
	Very stiff, as above.	0.70							
4.70									

Remarks:

Key: T.D.T.D. Too Dense to Drive

D	Small disturbed sample	J	Jar sample
B	Bulk disturbed sample	V	Pilcon Vane (kPa)
W	Water sample	M	Mackintosh Probe

Logged: PM	Checked: ME		Scale: NTS	Typed by: Davina Cridland

K.F. Geotechnical

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Borehole A		Ref: G/080320/A
Sheet 2 of 3	Scale: N/A	Date: 21Aug 2003
Client: Weston Homes Group Plc		
Equipment & Method: 150mm ϕ CFA	Location: The Grill Bar, London Road, St Albans	

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
	Very stiff, mid brown & dark brown/ orange, mottled yellow & black, slightly gravelly, very silty CLAY with carbon deposits, thinly laminated with orange & brown silt & fine sand.	0.60		D	SPT	6,6, 8,8, 10,12 N = 38	5.00		
5.30									
	Very stiff, dark brown/orange, mottled black, sandy, clayey SILT/very silty CLAY with carbon deposits & occasional fine gravel.	3.00		D			6.00		
				D	SPT	7,9, 11,12, 13,14, 16 N = 55	7.00		
				D			8.00		
8.30									
	Very stiff, mid to dark brown, mottled orange & black, sandy, very silty CLAY with occasional gravel & numerous carbon deposits.	3.70		D	SPT	7,9, 10,13, 15,15 N = 53	9.00		
				D			10.00		

Remarks:

Key: T.D.T.D. Too Dense to Drive

D	Small disturbed sample	J	Jar sample
B	Bulk disturbed sample	V	Pilcon Vane (kPa)
W	Water sample	M	Mackintosh Probe

Logged: PM	Checked: ME		Scale: NTS	Typed by: Davina Cridland

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Borehole A		Ref: G/080320/A
Sheet 3 of 3	Scale: N/A	Date: 21Aug 2003
Client: Weston Homes Group Plc		
Equipment & Method: 150mm ϕ CFA	Location: The Grill Bar, London Road, St Albans	

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
	Very stiff, mid to dark brown, mottled orange & black, sandy, very silty CLAY with occasional gravel & numerous carbon deposits.	3.70		D			11.00		
12.00	Borehole ends at 12m			D			12.00		

Remarks:
Borehole dry and collapsed to 10.7m on completion with no standing water level

Key: T.D.T.D. Too Dense to Drive

D	Small disturbed sample	J	Jar sample
B	Bulk disturbed sample	V	Pilcon Vane (kPa)
W	Water sample	M	Mackintosh Probe

Logged:	PM	Checked:	ME	Scale: NTS	Typed by: Davina Cridland

K.F. Geotechnical
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Tel: 01252 518821

Borehole B

Sheet	Scale:	Date: 21Aug 2003
1 of 1	N/A	

Client: Weston Homes Group Plc

Equipment & Method: 150mm ϕ CFA

Location: The Grill Bar, London Road, St Albans

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
G.L	Turf over MADE GROUND: Mid to dark brown, sandy, clayey silt with carbon	0.30		D			0.15	Roots of live appearance to 10mm diameter observed to 0.3m	
0.30	deposits, gravel & brick fragments.								
	Mid brown/orange, sandy, very silty CLAY/clayey SILT with carbon deposits & occasional fine gravel.	0.70		D			0.50	Roots of live appearance to 3mm diameter observed to 0.9m	
1.00				D	SPT	5,5, 6,6, 6,8 N = 26	1.00	Hair & fibrous roots observed to 3m	
	Very stiff, as above.	0.50							
1.50									
	Mid brown/orange, silty, fine & medium SAND with occasional gravel.	0.50							
2.00				D	SPT	14,10, 10,14, 14,15 N = 49	2.00		
	Dense, as above.	0.30							
2.30									
	Very dense, mid brown/orange, gravelly, silty, fine & medium SAND.	0.80							
				D	SPT	24 Too dense to drive	3.00		
3.10	Borehole ends at 3.1m Too dense for drill to penetrate								

Remarks:
Borehole very dry and open on completion
No standpipe installed

Key: T.D.T.D. Too Dense to Drive
D Small disturbed sample
B Bulk disturbed sample
W Water sample
J Jar sample
V Pilcon Vane (kPa)
M Mackintosh Probe

Logged: PM | Checked: ME | Scale: NTS | Typed by: Davina Cridland

K.F. Geotechnical

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Borehole C		Ref: G/080320/C
Sheet 1 of 3	Scale: N/A	Date: 21Aug 2003
Client: Weston Homes Group Plc		
Equipment & Method: 150mm ϕ CFA	Location: The Grill Bar, London Road, St Albans	

Depth (m)	Description of Strata	Thickness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
G.L	Tarmac over concrete (not re-inforced)	0.10						No roots observed	
0.10				D			0.15		
	MADE GROUND: Dark brown, clayey, sandy silt with fine gravel & brick fragments & lenses of clay.	0.50		D			0.50		
0.60									
	Mid brown/orange, sandy, very silty CLAY with fine gravel & carbon deposits.	0.40							
1.00				D	SPT	1,2, 3,3, 2,5 N = 13	1.00		
	Firm, as above.	0.70							
1.70									
	Mid brown/orange, grey veined, slightly gravelly, sandy, very silty CLAY.	0.40		D	SPT	5,7, 7,7, 7,9 N = 30	2.00		
2.10									
	Dense, mid brown/orange, gravelly, silty, fine, medium & coarse SAND.	0.30							
2.40									
	Stiff, light grey, mottled orange, slightly gravelly, sandy, very silty CLAY.	1.40		D	SPT	5,5, 6,6, 7,7 N = 26	3.00		
3.80									
	Very stiff, mid brown/orange, grey veined, slightly sandy, very silty CLAY with some fine gravel.	1.10		D	V	140+ 140+	4.00		

Remarks:

Key: T.D.T.D. Too Dense to Drive
D Small disturbed sample J Jar sample
B Bulk disturbed sample V Pilcon Vane (kPa)
W Water sample M Mackintosh Probe

Logged: PM	Checked: ME	Scale: NTS	Typed by: Davina Cridland

K.F. Geotechnical

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Borehole C		Ref: G/080320/C
Sheet 2 of 3	Scale: N/A	Date: 21Aug 2003
Client: Weston Homes Group Plc		
Equipment & Method: 150mm ϕ CFA	Location: The Grill Bar, London Road, St Albans	

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
	Very stiff, mid brown/orange, grey veined, slightly sandy, very silty CLAY with some fine gravel.	1.10							
4.90				D	SPT	10,13, 14,14, 14,14 N = 56	5.00		
	Dense, mid brown/orange, slightly gravelly, silty, fine & medium SAND.	1.60		D			6.00		
6.50									
	Very stiff, mid brown/orange, grey veined, slightly gravelly, sandy, very silty CLAY with carbon deposits.	0.70		D	SPT	9,10, 10,10, 11,11, 11 N = 43	7.00		
7.20									
	Very stiff, moist, mid brown/orange, gravelly, sandy, very silty CLAY.	1.40		D			8.00		
8.60									
	Moist, white, mottled brown CHALK (recovered as putty chalk) with flints & chalk nodules.	3.40		D	SPT	5,6, 8,8, 7,8 N = 31	9.00		
				D			10.00		

Remarks:

Key: T.D.T.D. Too Dense to Drive

D	Small disturbed sample	J	Jar sample
B	Bulk disturbed sample	V	Pilcon Vane (kPa)
W	Water sample	M	Mackintosh Probe

Logged:	PM	Checked:	ME	Scale: NTS	Typed by: Davina Cridland

K.F. Geotechnical

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Borehole C		Ref: G/080320/C
Sheet 3 of 3	Scale: N/A	Date: 21Aug 2003
Client: Weston Homes Group Plc		
Equipment & Method: 150mm ϕ CFA	Location: The Grill Bar, London Road, St Albans	

Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)
	Moist, white, mottled brown CHALK (recovered as putty chalk) with flints & chalk nodules.	3.40		D	SPT	6,9, 8,8, 8,10 N = 34	11.00		
12.00	Borehole ends at 12m			D			12.00		

Remarks:
Borehole moist and collapsed on completion with no standing water level
Standpipe installed at 5m

Key: T.D.T.D. Too Dense to Drive
D Small disturbed sample
B Bulk disturbed sample
W Water sample
J Jar sample
V Pilcon Vane (kPa)
M Mackintosh Probe

Logged: PM	Checked: ME	Scale: NTS	Typed by: Davina Cridland

K.F. Geotechnical

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TRIAL PIT No 1

Ref: 6/080320/1

Sheet: 1 of 1

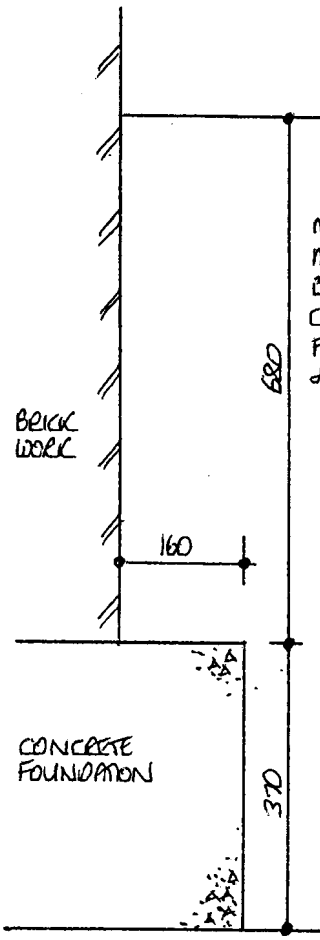
Scale: 1:10

Date: 26/08/03

Client: WESTON HOMES

Equipment & Method: HAND EXCAVATED TRIAL PIT

Location: THE GRILL BAR, LONDON RD, ST ALBANS



Description	Reduced Level	Legend	Depth & Thickness	Samples and Tests: Depth	Sample: Type	Sample: No.	Test	Field Notes
			0.00					
MADE GROUND - MEDIUM DENSE BROWN SANDY CLAY/ CLAYEY SAND WITH FLINT GRAVEL CHALK & ROOTS				0.20	D	1		
			1.05	1.05			MP SPT SPT	
DENSE BROWN SILTY CLAYEY SAND WITH DENSE GRAVEL								

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value).

All depths and reduced levels are in metres.

The thickness is given in brackets in the depth column.

Water level observations during boring are given on the last sheet of that log.

B - Bulk Sample.
D - Disturbed Samples.
S - Standard Penetration Test.
V - Vane Test.
W - Water Test.
[] - Piston(P); Tube(T) or Core(U) Sample: Length to scale.
MP - Mackintosh Probe

Remarks:

K.F. Geotechnical

85 Alexandra Road
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TRIAL PIT No 2

Ref: G/080320/2

Sheet: 1 of 1

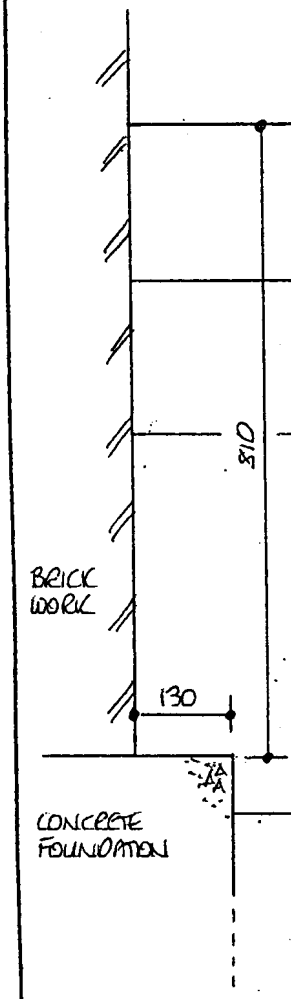
Scale: 1:10

Date: 26/08/03

Client: WESTON HOMES

Equipment & Method: HAND EXCAVATED TRIAL PIT

Location: THE GRILL BAR, LONDON RD, ST ALBANS



Description	Reduced Level	Legend	Depth & Thickness	Samples and Tests: Depth	Sample: Type	Sample: No.	Test	Field Notes
			0.00					
LOOSE TARMAC WITH ROOTS			(0.20)	0.10	D	1		
			0.20					
MEDIUM DENSE GRAVEL WITH FLINTS & BRICK - HARDCORE			(0.20)					
			0.40					
MEDIUM DENSE, BROWN SILTY SAND WITH WITH GRAVEL FLINTS & ROOTS.			(0.50)	0.60	D	2		
			0.90					
DENSE BROWN SILTY SAND WITH DENSE GRAVEL								

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value).

All depths and reduced levels are in metres.

The thickness is given in brackets in the depth column.

Water level observations during boring are given on the last sheet of that log.

B - Bulk Sample.
D - Distured Samples.
S - Standard Penetration Test.
V - Vane Test.
W - Water Test.
[] - Piston(P); Tube(T) or Core(U) Sample: Length to scale.
MP - Mackintosh Probe

Remarks:

K.F. Geotechnical

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TRIAL PIT No 3

Ref: G/080320/3

Sheet: 1 of 1

Scale: 1:10

Date: 26/08/03

Client: WESTON HOMES

Equipment & Method: HAND EXCAVATED TRIAL PIT

Location: THE GRILL BAR, LONDON RD, ST ALBANS.

Description	Reduced Level	Legend	Depth & Thickness	Samples and Tests: Depth	Sample: Type	Sample: No.	Test	Field Notes
TARMAC			0.00 (0.15) 0.15					
BRICK & CONCRETE HARDCORE			(0.15) 0.30					
DENSE BROWN SAND WITH GRAVEL & BRICKS – MADE GROUND				0.40	D	1		
				0.65	D	2		
			(0.80)					
			1.10					

860
260
240
BRICKWORK
CONCRETE FOUNDATION

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value).

All depths and reduced levels are in metres.

The thickness is given in brackets in the depth column.

Water level observations during boring are given on the last sheet of that log.

B - Bulk Sample.
D - Disturbed Samples.
S - Standard Penetration Test.
V - Vane Test.
W - Water Test.
[illegible](P); Tube(T) or Core(U)
[illegible]ple: Length to scale.
[illegible] - Mackintosh Probe

Remarks:

K.F. Geotechnical

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TRIAL PIT No 4

Ref: G/080320/4

Sheet: 1 of 1

Scale: 1:10

Date: 26/08/03

Client: WESTON HOMES

Equipment & Method: HAND EXCAVATED TRIAL PIT

Location: THE GRILL BAR, LONDON RD, ST ALBANS.

Description	Reduced Level	Legend	Depth & Thickness	Samples and Tests: Depth	Sample: Type	Sample: No.	Test	Field Notes
			0.00					
DENSE BROWN SILTY CLAYEY SAND WITH ROOTS.			(0.60)	0.15	D	1		
				0.50	D	2		
			0.60	0.60			MP SOH SOH	
DENSE BROWN SILTY CLAYEY SAND WITH DENSE GRAVEL & ROOTS			(0.10)					BOREHOLE DRY ON COMPLETION
			0.70					
BOREHOLE ENDS - TOO DENSE								

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value).

All depths and reduced levels are in metres.

The thickness is given in brackets in the depth column.

Water level observations during boring are given on the last sheet of that log.

B - Bulk Sample.
D - Disturbed Samples.
S - Standard Penetration Test.
V - Vane Test.
W - Water Test.
[] - Piston(P); Tube(T) or Core(U) Sample: Length to scale.
MP - Mackintosh Probe

Remarks:

K.F. Geotechnical

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TRIAL PIT No 5

Ref: 6/08032015

Sheet: 1 of 1

Scale: 1:10

Date: 26/08/03

Client: WESTON HOMES

Equipment & Method: HAND EXCAVATED TRIAL PIT

Location: THE GRILL BAR, LONDON RD, ST ALBANS.

Description	Reduced Level	Legend	Depth & Thickness	Samples and Tests: Depth	Sample: Type	Sample: No.	Test	Field Notes
			0.00					
DENSE BROWN CLAYEY SAND WITH GRAVEL FLINT & ROOTS			(0.30)	0.15	D	1		
			0.30					

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value).

All depths and reduced levels are in metres.

The thickness is given in brackets in the depth column.

Water level observations during boring are given on the last sheet of that log.

B - Bulk Sample.
D - Disturbed Samples.
S - Standard Penetration Test.
V - Vane Test.
W - Water Test.
[] - Piston(P); Tube(T) or Core(U) Sample: Length to scale.
MP - Mackintosh Probe

Remarks:

K.F. Geotechnical

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TRIAL PIT No 6

Ref: 6/080320/6

Sheet: 1 of 1

Scale: 1:10

Date: 26/08/03

Client: WESTON HOMES

Equipment & Method: HAND EXCAVATED TRIAL PIT

Location: THE GRILL BAR, LONDON RD, ST ALBANS.

Description	Reduced Level	Legend	Depth & Thickness	Samples and Tests: Depth	Sample: Type	Sample: No.	Test	Field Notes
LOOSE DARK BROWN SAND WITH GRAVEL & ROOTS			0.00 (0.30) 0.30	0.15	D	1		

Where 0.3m penetration has not been achieved, the number of blows for the quoted penetration is given. (Not the N value).

All depths and reduced levels are in metres.

The thickness is given in brackets in the depth column.

Water level observations during boring are given on the last sheet of that log.

B - Bulk Sample.
D - Disturbed Samples.
S - Standard Penetration Test.
V - Vane Test.
W - Water Test.
[] - Piston(P); Tube(T) or Core(U) Sample: Length to scale.
MP - Mackintosh Probe

Remarks:

Chemtest

K F Geotechnical
85 Alexandra Road
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Hampshire
GU14 6BN
FAO W J C Wallace

LABORATORY TEST REPORT

Results of analysis of six soil samples
received 29 August 2003

QA Number	798001	798002	798003	798004	798005	798006		Units
Sample ID	G/080320 - The Grill Bar, St. Albans							
	TP1	TP2	T[3	TP4	TP5	TP6		-
	GL-300	GL-300	GL-300	GL-300	GL-300	GL-300		mm
Arsenic (total) *[2430]*	8	8	9	10	7	10		mg kg^{-1}
Boron (water soluble) *[2120]*	1.2	1.6	<0.4	1.1	1.4	1.8		mg kg^{-1}
Cadmium (total) *[2430]*	<0.5	1.3	<0.5	<0.5	<0.5	<0.5		mg kg^{-1}
Chromium (total) *[2430]*	23	17	14	24	21	18		mg kg^{-1}
Chromium [VI]* *[2490]*	<5	<5	<5	<5	<5	<5		mg kg^{-1}
Copper (total) *[2430]*	11	62	27	22	13	52		mg kg^{-1}
Cyanide (total)* *[2300]*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		mg kg^{-1}
Lead (total) *[2430]*	13	370	110	77	48	300		mg kg^{-1}
Mercury (total) *[2440]*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		mg kg^{-1}
Nickel (total) *[2430]*	21	11	12	15	10	14		mg kg^{-1}
pH *[2010]*	7.6	7.6	7.9	6.5	6.7	7.2		-
Phenols* *[2920]*	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		mg kg^{-1}
Selenium (total) *[2440]*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		mg kg^{-1}
Sulfate (total) *[2430]*	0.04	0.35	0.05	0.08	0.05	0.13		% SO_4
Sulfide* *[2320]*	<1	<1	<1	<1	<1	<1		mg kg^{-1}
Zinc (total) *[2430]*	56	300	80	86	54	260		mg kg^{-1}
Loss on ignition* *[2610]*	6.0	18.0	2.0	5.5	6.2	8.5		%

Report date
05 September 2003

[Test Procedure Number]

All results for air dried sample

The sign < means 'less than'

All tests undertaken
01-05.09.03

UKAS TESTING
2183

Notes to accompany report:

- *The sign < means 'less than'*
- *Tests marked * are outside of the current scope of UKAS accreditation*
- *Tests marked † were subcontracted to a laboratory holding UKAS accreditation for this test*
- *Tests marked ‡ were subcontracted to a laboratory not holding UKAS accreditation for this test*
- *I/S means 'insufficient sample'*

Chemtest

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85 Alexandra Road
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Hampshire
GU14 6BN
FAO W J C Wallace

LABORATORY TEST REPORT

Results of analysis of six soil samples
received 29 August 2003

QA Number	798001	798002	798003	798004	798005	798006		Units
Sample ID	G/08032 – The Grill Bar, St. Albans							
	TP1	TP2	T[3	TP4	TP5	TP6		-
	GL-300	GL-300	GL-300	GL-300	GL-300	GL-300		mm
Naphthalene *[2700]*	1.9	1.5	<0.5	<0.5	0.61	<0.5		mg kg^{-1}
Acenaphthylene *[2700]*	4.2	1.1	<0.5	<0.5	1.3	<0.5		mg kg^{-1}
Acenaphthene *[2700]*	0.66	3.5	1.3	<0.5	<0.5	<0.5		mg kg^{-1}
Fluorene *[2700]*	<0.5	3.1	0.56	<0.5	<0.5	<0.5		mg kg^{-1}
Phenanthrene *[2700]*	5.0	35	10	<0.5	3.7	0.68		mg kg^{-1}
Anthracene *[2700]*	4.2	13	3.6	<0.5	1.2	<0.5		mg kg^{-1}
Pyrene *[2700]*	39	55	21	0.53	13	1.9		mg kg^{-1}
Fluoranthene *[2700]*	34	60	23	0.69	13	2.3		mg kg^{-1}
Chrysene *[2700]*	39	26	8.5	<0.5	9.0	1.3		mg kg^{-1}
Benzo[a]anthracene *[2700]*	35	30	9.4	<0.5	6.8	1.1		mg kg^{-1}
Benzo[b] fluoranthene *[2700]*	72	28	9.4	0.87	14	1.7		mg kg^{-1}
Benzo[k]fluoranthene *[2700]*	37	22	6.8	<0.5	8.8	1.4		mg kg^{-1}
Benzo[a]pyrene *[2700]*	83	31	8.9	0.62	16	1.6		mg kg^{-1}
Indeno[123-cd]pyrene *[2700]*	12	4.3	1.4	<0.5	1.9	<0.5		mg kg^{-1}
Dibenz[ah]anthracene *[2700]*	59	22	8.4	1.5	14	1.7		mg kg^{-1}
Benzo[ghi]perylene *[2700]*	56	20	6.0	0.54	13	1.5		mg kg^{-1}
Total PAH *[2700]*	480	360	120	<10	120	18		mg kg^{-1}

Report date
05 September 2003

[Test Procedure Number]

All results for air dried sample

The sign < means 'less than'

All tests undertaken
01-05.09.03

K F GEOTECHNICAL

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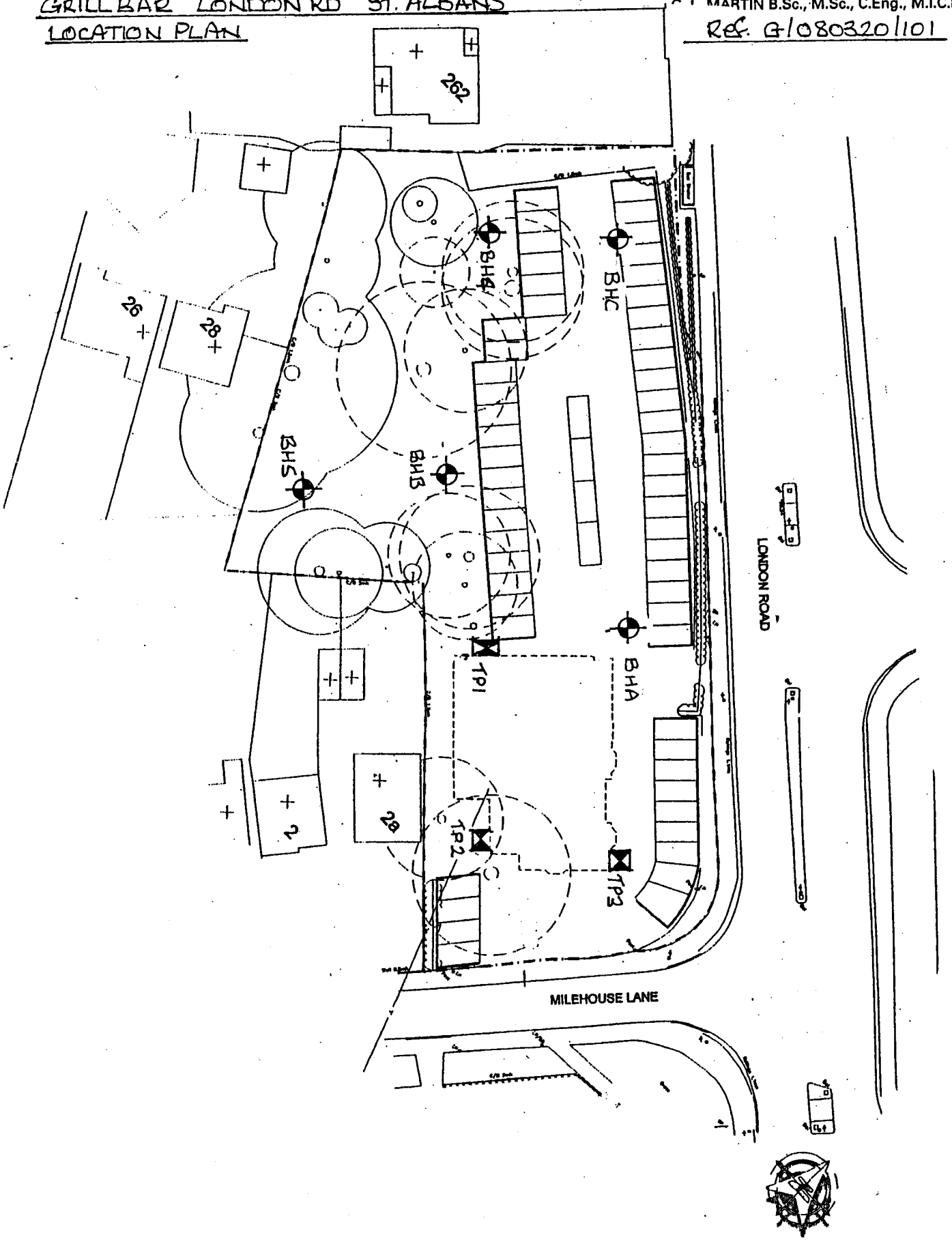
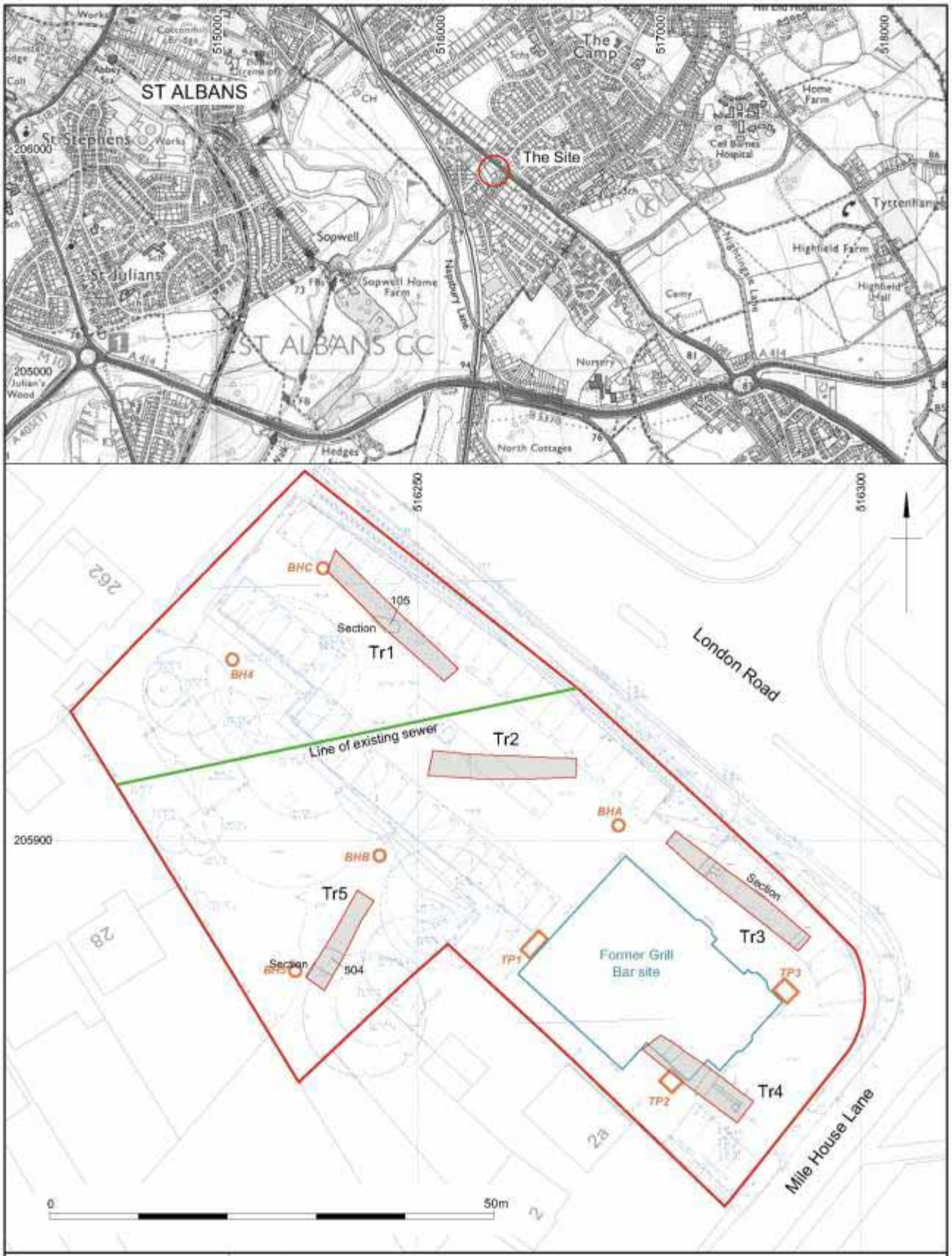
GRILL BAR LONDON RD ST. ALBANS

LOCATION PLAN

Ref. G/080320/101





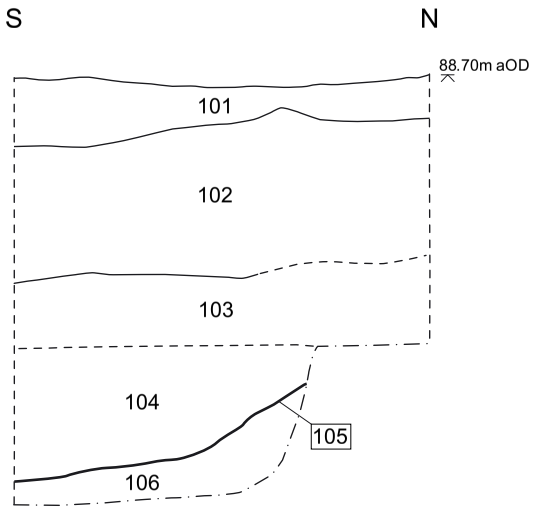
The Site
Trench
Existing sewer
Geotechnical investigations

Wessex Archaeology

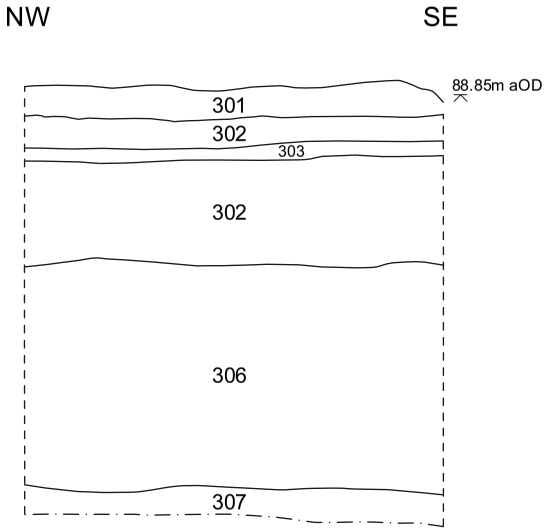
Date:	10/05/07	Revision Number:	0
Scale:	1:25 000 & 1:625	Illustrator:	LJC/WAF
Path:	Y:\PROJECTS\65130\Drawing Office\Report Figures\WSI\07-02-01\65130wsi.dwg		

Site and trench location

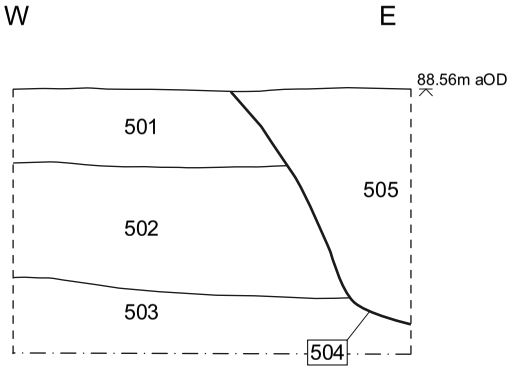
Figure 1



Trench 1: North west facing section



Trench 3: South west facing section



Trench 5: South east facing section

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		Scale:	1:20	Illustrator: WAF
		Path:	Y:\PROJECTS\65130\Drawing Office\Report Figures (y-m)\Evaluation\07_05_09\Fig02.ai	

Selected representative sections

Figure 2

Plate 1: Trench 1 from the south east

Plate 2: Trench 1 - tree throw (105) from the north east

Wessex Archaeology	Date:	03/07/07	Revision Number:	
	Scale:		Illustrator:	WAF
	Path:	Y:\PROJECTS\65130\Drawing Office\Report Figures (y-m)\Evaluation\07_05_09\Fig03.ai		

Plates 1 and 2 Figure 3

Plate 3: Trench 2 from the east

Plate 4: Trench 3 from the south-east

Plate 5: Trench 4 from the north-west

Plate 6: Trench 5 from the north-east

Wessex Archaeology	Date:	09/05/07	Revision Number:	0
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Trench photographs

Figure 4

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