

LAND AT GUMLEY ROAD, GRAYS, THURROCK, ESSEX:

GEOARCHAEOLOGICAL ASSESSMENT

For Archaeological Solutions Ltd

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1. Introduction

- 1.1 This report presents the results of a field based geoarchaeological assessment at Gumley Road, Grays carried out on 25th June 2013. The work was carried out in accordance with the methodology submitted on 21st June by Dr Simon Lewis. Supervision and recording of the excavation of the trial pit was carried out by a member of AS staff.
- 1.2 The assessment had two objectives: 1) to establish whether the geoarchaeologically important deposits in the Lion Pit Tramway Cutting extend beneath the site at Gumley Road at depth and 2) to investigate the geoarchaeological and palaeoenvironmental potential of sands above the gravel deposits. The first objective was addressed by sinking a borehole at the northern end of the site, the second objective was addressed by excavating a trial pit in a location where sands were thought to be present. The trial pit location was also constrained by the planned development and the need to avoid compromising the foundations of both existing and planned structures.

2. Borehole

BH 501 (NGR 559765, 177875, 6.5m OD)

- 0.0 – 1.1m Made ground, sandy clay with flints, dark brown colour
- 1.1 – 3.0m sandy stoney clay, brown colour, varied texture, with sandy layer at 2.1m.
- 3.0 – 3.8m light yellowish brown sandy silty clay (10YR 5/6)
- 3.8 – 4.6m yellowish brown clayey sand (10YR 5/6)
- 4.6 – 5.5m yellow medium/coarse sand (10YR 5/8)
- 5.5 – 10.5m medium coarse gravel and coarse sand, flint dominated, brown colour to 8.7m, black colour with hydrocarbon odour below 8.7m
- 10.5 – 11.0m+ Chalk, white, broken-up, rubble

- 2.1 The borehole (BH501) was sunk at the agreed location using a cable percussion rig. The ground surface is estimated from the site survey to be 6.5m OD. The borehole proved a total of 10.5m of made ground, clay and sands and gravels overlying Chalk bedrock. Elevation of the Chalk is -4m OD, which is consistent with other off-site borehole information. The sands and gravels, which directly overlie the Chalk bedrock consist of medium to coarse flint gravel and sand, are consistent in thickness and character with the gravels across the site.
- 2.2 The overlying clay unit has not been recorded elsewhere on the site. This unit is interpreted as the result of mass movement processes, with movement of sediment down slope from the north to overlie the fluvial sands and gravels. This is typical of the 'back edge' of a river terrace. The ground surface rises immediately north of London Road and the poorly sorted sediments overlying the Aveley sands and silts in the Lion Pit Tramway Cutting are a possible source of this unit at Gumley Road.
- 2.3 The results from the borehole suggest that the geoarchaeologically important sediments do not extend beneath the site of the proposed development.

3. Trial pit

TP 1 (NGR 559765, 117814, 6.3m OD)

- 0.0 - 1.8 made ground
- 1.8 - 2.0 stoney clayey sand (?disturbed, made ground)
- 2.0 - 2.2 silty sand, fine sand with silty sub horizontal laminations (10YR 5/4 – 10YR 5/6)
- 2.2 – 3.2m+ sand and gravel, medium coarse flint dominated gravel and coarse yellow sand

- 3.1 The trial pit (TP 1) was opened at the agreed location using a mechanical excavator. The ground surface is estimated from the site survey to be 6.3m OD. A 4x4m pit was excavated through made ground to a depth of 1.2m. The size of the pit was then reduced to 3x3m to provide safe access and a further 0.8m of made ground was removed to expose the surface of the in situ Pleistocene sediments.
- 3.2 A thin (0.2m) facies of bedded fine sand and silty sands was present above coarse flint-dominated sands and gravels. The sands and gravels were exposed to a depth of 3.2m below ground level. No evidence of geoarchaeological or palaeoenvironmental potential was identified in either the sand unit or the underlying sands and gravels.
- 3.3 The sequence revealed in TP 1 is consistent with that recorded elsewhere on the site and the sands and gravels form part of the fluvial terrace deposits and the sand unit is also interpreted as part of the terrace sequence.

4. Conclusions

- 4.1 The findings from the borehole indicate that it is unlikely that the deposits which are present to the north of the site in the Lion Pit Tramway Cutting (the Aveley sands and silts) and which are known to contain Palaeolithic archaeology are present beneath the development site at Gumley Road. These deposits have probably been cut out by the down-cutting of the River Thames following deposition of the Aveley sands and silts but preceding the deposition of the fluvial sands and gravels which underlie the site. The sands and gravels form a terrace of the River Thames which was deposited, probably under cold climate conditions, some 191-130 years ago, during Marine Isotope Stage (MIS) 6, and they post-date the Middle Palaeolithic archaeology contained within the Aveley sands and silts which are generally thought to date to MIS 7 (243-191 ka ago).
- 4.2 The second objective was to assess the Palaeolithic potential in the sands overlying the gravels. These deposits are interpreted as part of the fluvial terrace sequence and there is no indication of any archaeological or environmental information contained within these sediments.
- 4.3 The information from this assessment, together with the data from geotechnical boreholes and trial pits, indicates that the development site is underlain by Pleistocene sands and gravels of the River Thames. No deposits with significant geoarchaeological potential have been identified in either the desk-based assessment or the field-based assessment.

PHOTOGRAPHIC INDEX



1
Test pit 1 being excavated



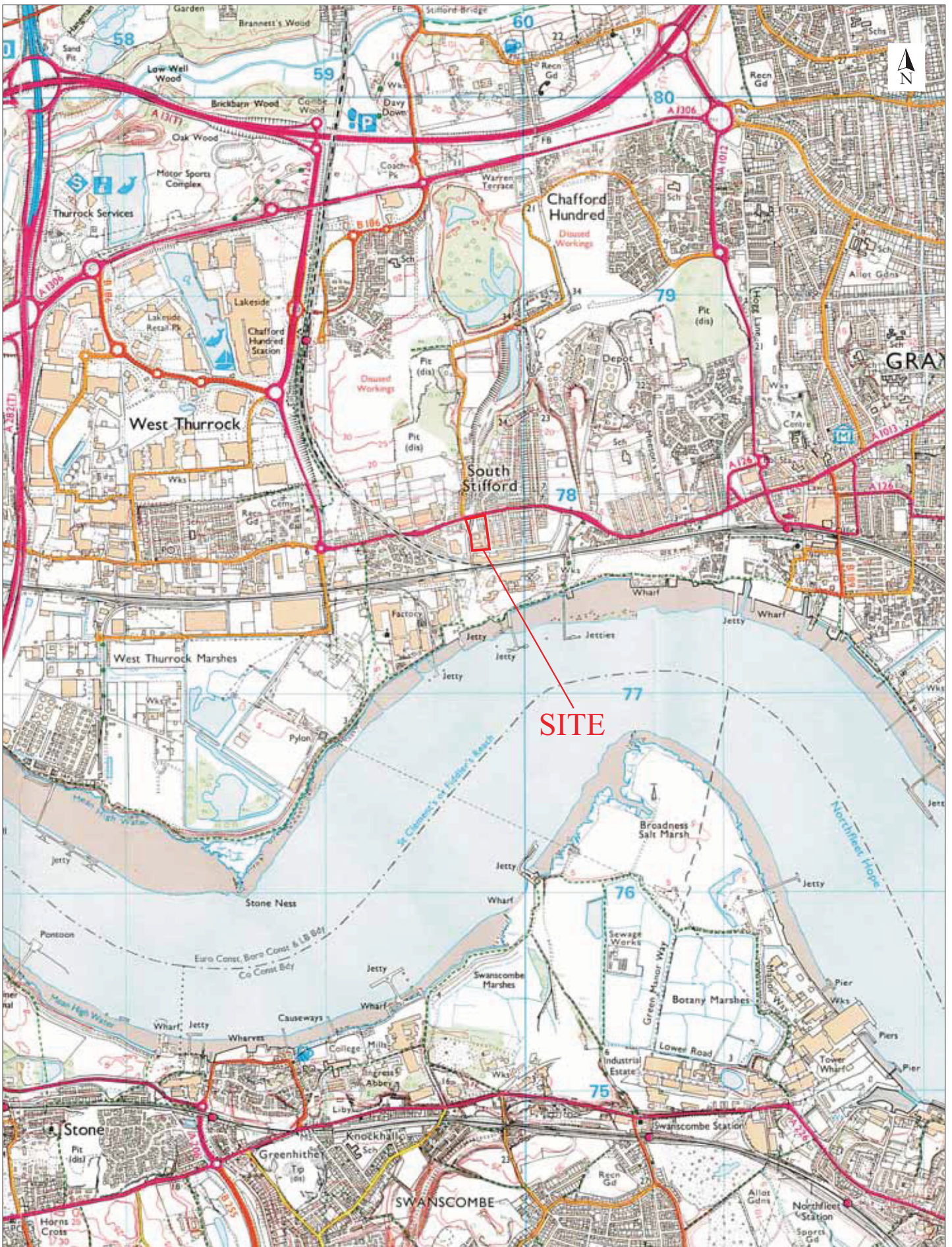
2
Test pit 1 looking north



3
Sample section 1 looking north-east



4
Sample section 2 looking south-east

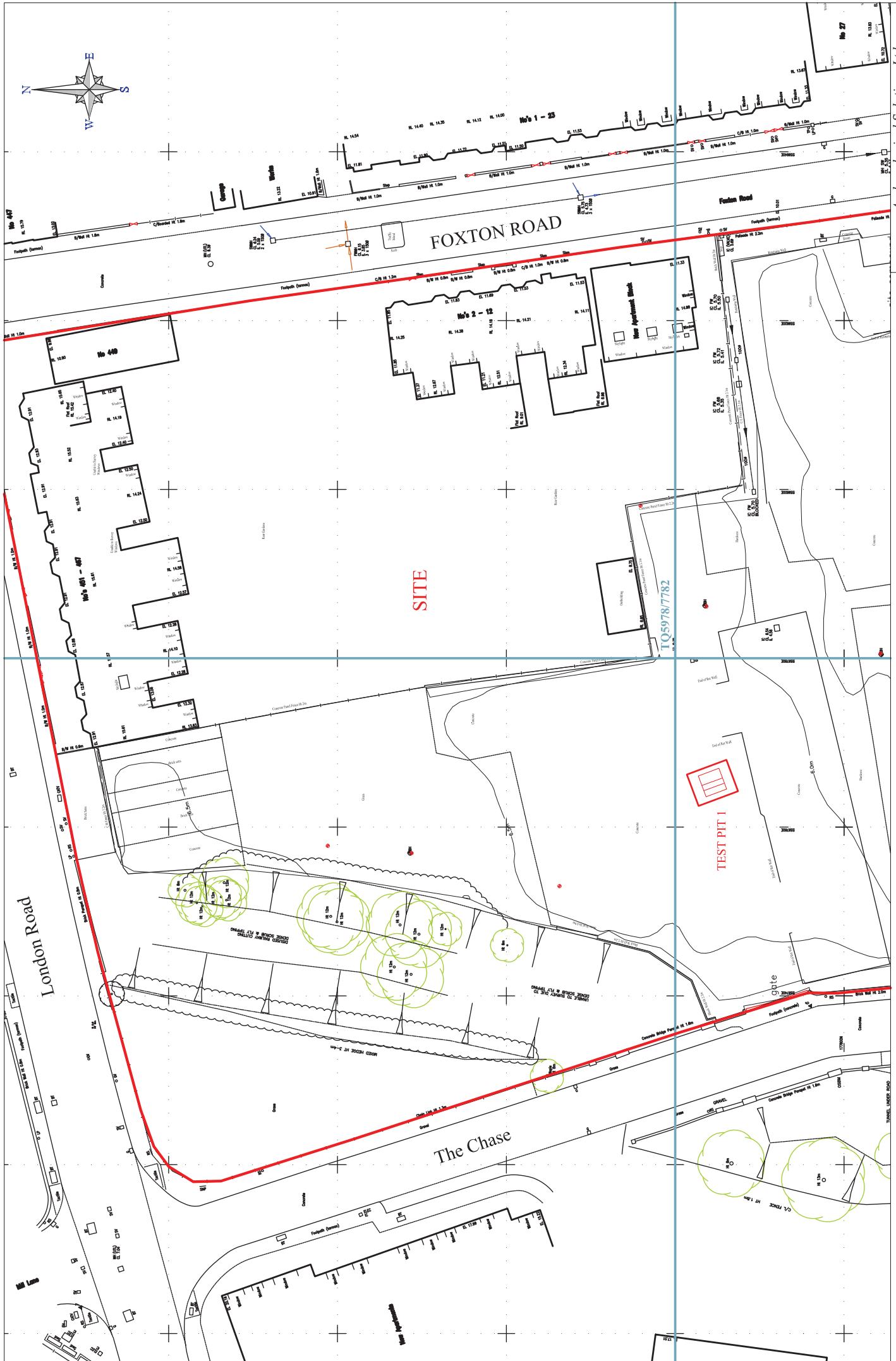


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Fig. 1 Site location plan
 Scale 1:25,000 at A4



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Fig. 2 Detailed site location plan
 Scale 1:1000 at A4



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Fig. 3 Test pit location plan
 Scale 1:400 at A3



