SI 423.

Report No 98/502

Wigan Metropolitan Borough Council
Borough Land and Property Department
Municipal Buildings
Hewlett Street
Wigan
WN1 1NQ

Order No 974233044

Report on Mine Shaft Location

at Site of

Proposed Development

at

Abraham Guest School. Orrell.

February 1998

Sub Soil Surveys Ltd.
Manchester

CONTENTS

1 INTRODUCTION AND OBJECT

1.1 This investigation has been carried out to the instructions of the Borough Land and Property Department at Wigan Metropolitan Borough Council at the site of a proposed sports hall.

1.2 The site of the proposed sports hall is at Abraham Guest High School, Orrell Road, Wigan. The site is located between the existing sports hall to the south and the all - weather tennis courts to the north. The approximate National Grid Reference for the centre of the site is SD 543 047. Detailed site plans are presented as fig. $1^{a-d.}$

1.3 The object of the investigation was to locate a known mineshaft which is thought to have been capped with reinforced concrete.

2 INVESTIGATION AND FINDINGS

2.1 The investigation was carried out using the following procedure :

2.1.1 The site was surveyed using a "Single reading G846 proton magnetometer" at 1m centres along the traverse lines as indicated in fig. 1c. Twenty one readings of the ambient magnetic field were taken along each traverse line.

2.1.2 The results of the magnetometer survey were visualised using the computer program 'Surfer' which allows the creation of a 3-D surface from the results, together with a contoured plot of the surface (see fig.1^{a}) and a 'view' of the surface (see fig.1^{b}). A strong anomaly can be seen close to the anticipated position of the shaft on both of these plots, and appears to be the result of the influence of the reinforcement in the cap on the earth's magnetic field.

2.1.3 Mackintosh Probes were then carried out at the locations shown on fig.1^{c} to check for any buried feature which may indicate the actual position of the cap, these trial positions being established from the Magnetometer work. The Mackintosh Probes encountered a solid obstruction at depths approximately 1.2 - 1.3m below ground level (bgl) over the 'cap' with the <u>minimum</u> depth achieved off the 'cap' being 1.5m bgl.. From the results of the Mackintosh Probes we were able to infer the edge of the

square concrete cap as indicated in fig.1[c], a cap size of approximately 6m x 6m on plan. The cap location agrees well with the magnetic anomaly position.

2.2 To further prove that the concrete cap had been located, a single hand dug trial pit (TP1) was excavated in the suspected region of the Northwest corner of the cap, as shown in fig.1d. The corner of the concrete cap was exposed at 1.2m bgl and the edge face proved by probing with a steel bar to 1.4 - 1.7m bgl. The dimensions to the Northwest corner of the concrete cap are indicated in fig.1d.

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S A Lee
Geologist

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Eur Ing R H Shires

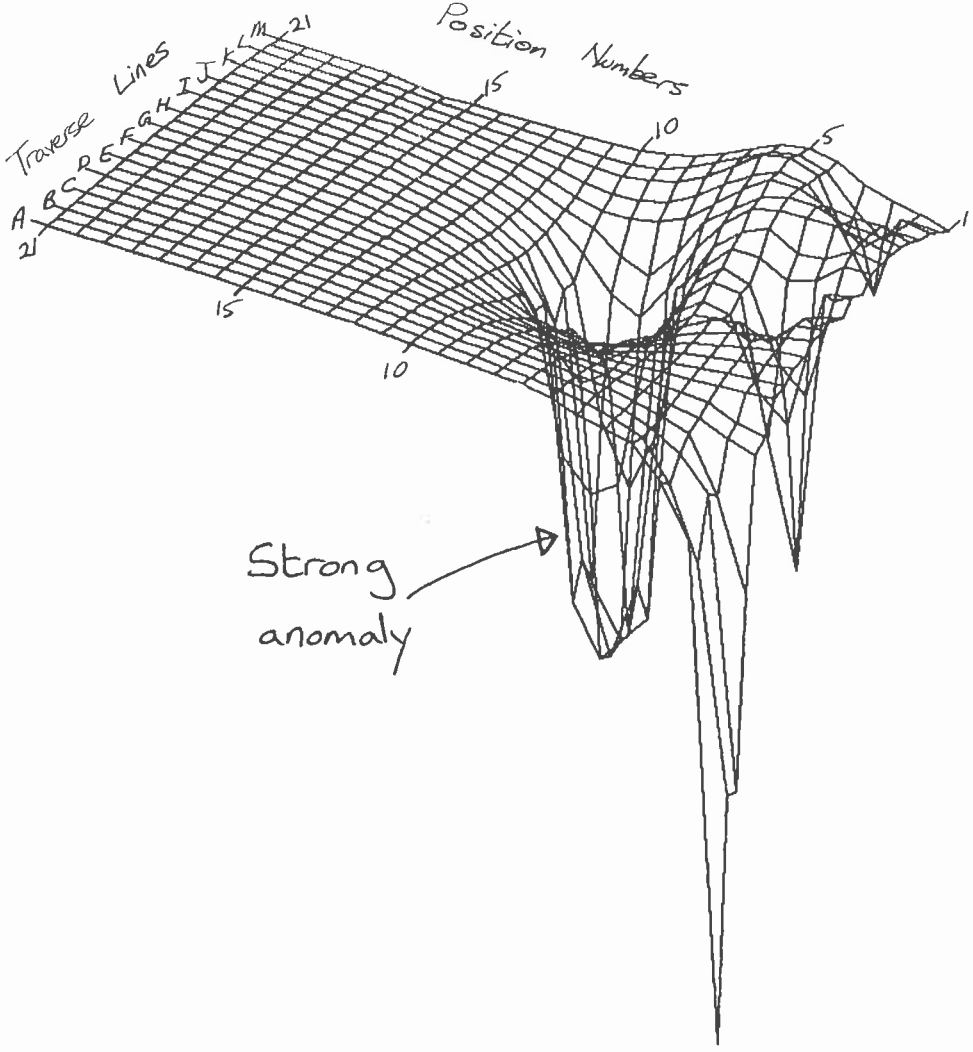

Fig 1b: 3-D plot of magnetometer results.

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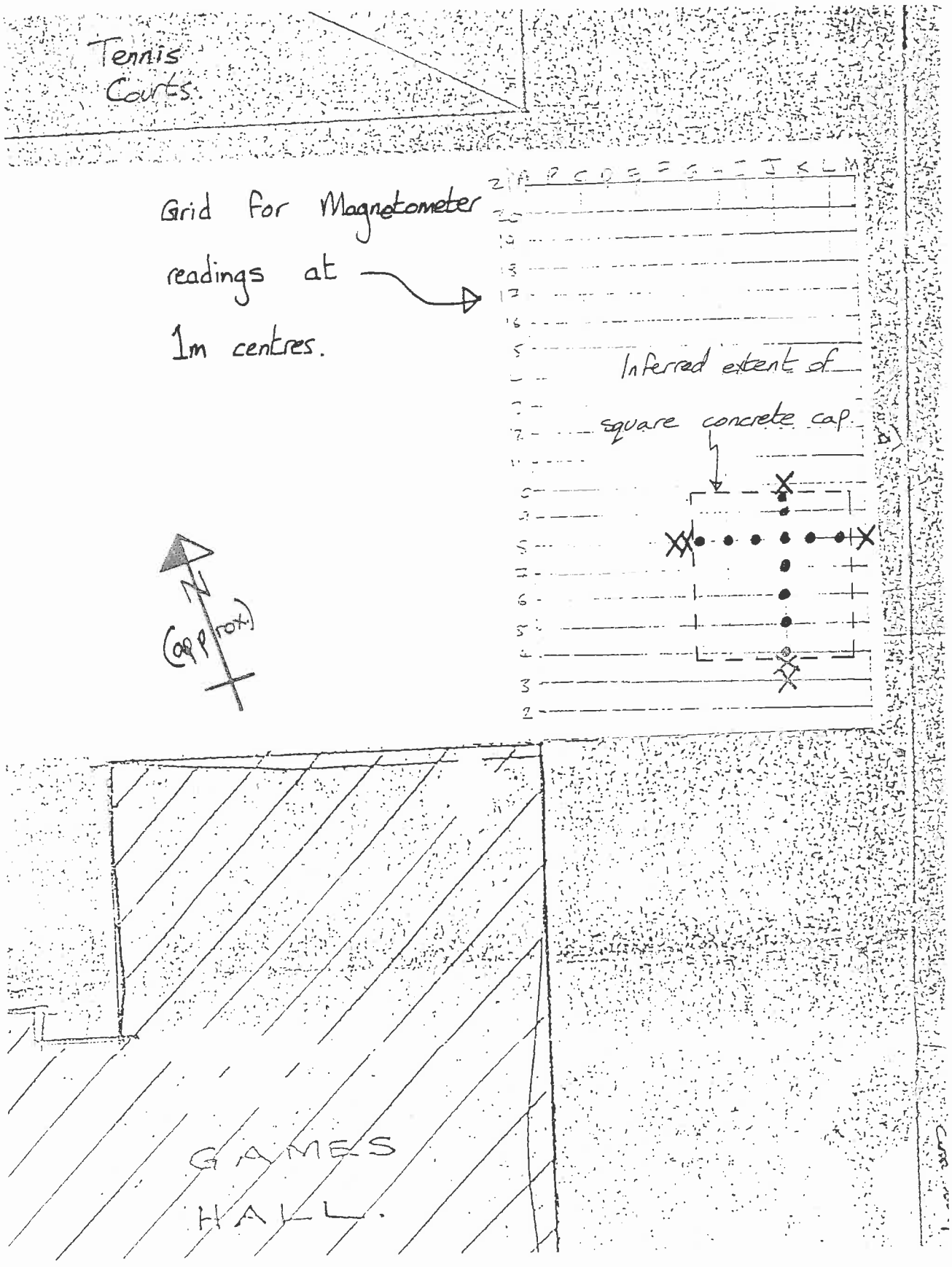

Key:

(Mackintosh Probes)

- ● Solid at approx 1·2m bgl - 1·3m bgl.
- X Depth achieved ≥ 1·5m bgl.

Fig 1c: Site plan indicating grid for magnetometer readings and Mac. probes

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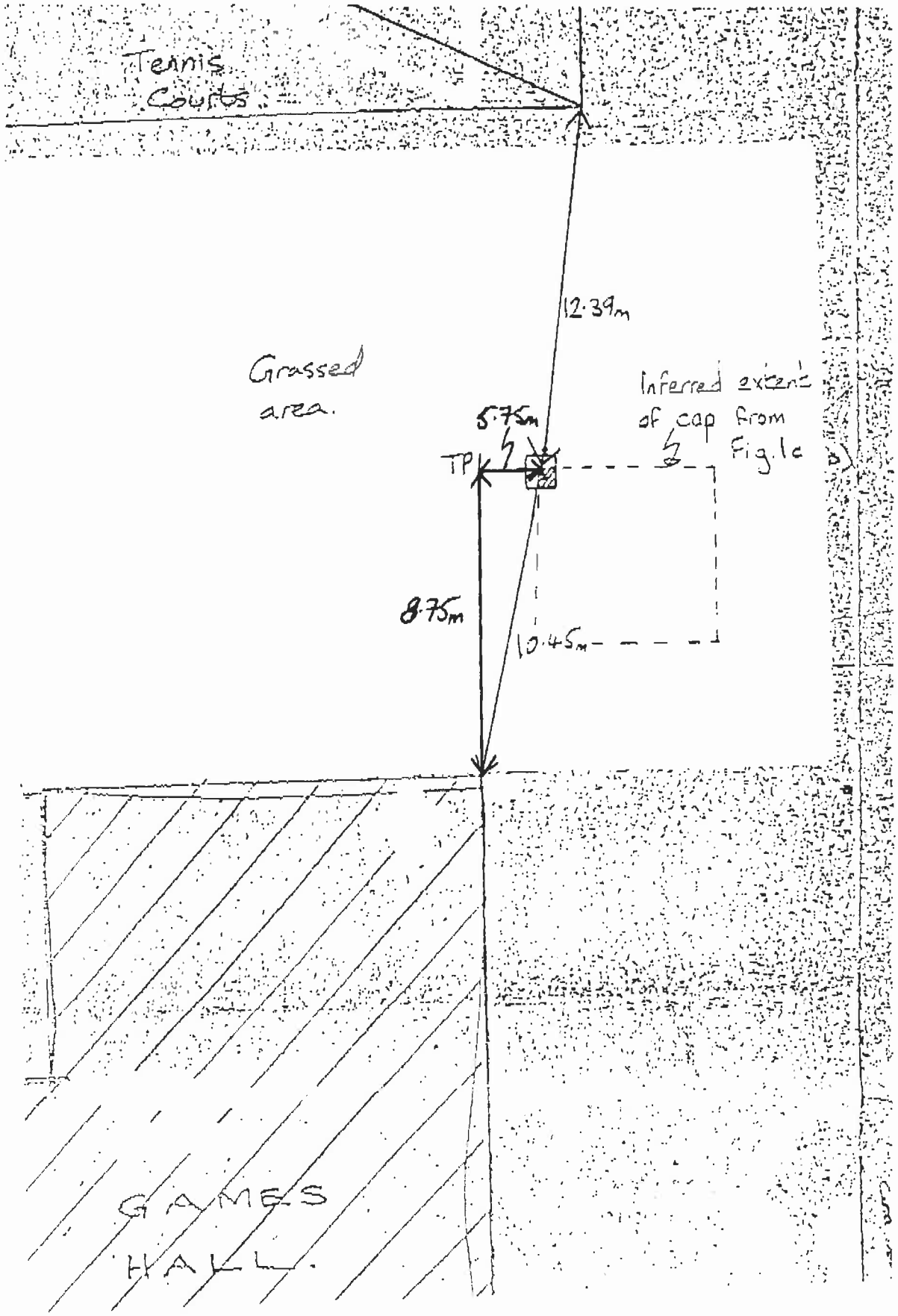

Fig 1 d: Site plan indicating location of trial pit + concrete slab.

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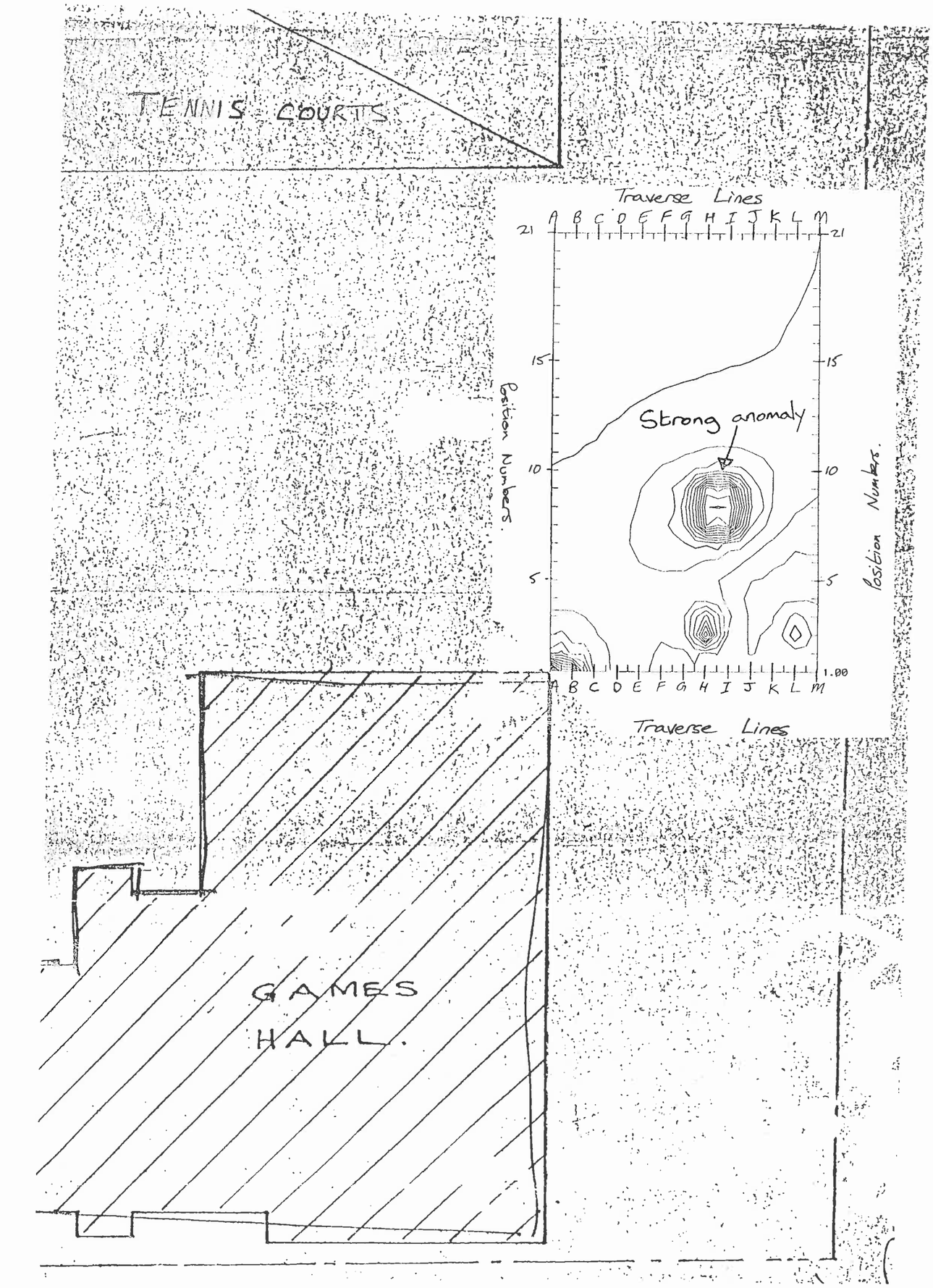

(approx)

Title Fig 1a: Site plan indicating contoured results of magnetometer readings relative to the sports hall.

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