ABACUS DESIGN
ARCHITECTS PROJECT MANAGERS ENGINEERS

SUITABILITY REPORT
FOR
DAM CONSTRUCTION
HAMMOND DAM

LOCATED AT
LIONS BACK, SEDDON

SYNOPSIS

1.1 INTRODUCTION

Mr. A Hammond proposes to construct a water storage dam on his property located south of Seddon adjacent to the Blind River. The dam will be used to store water harvested from the Blind River during winter to irrigate farmland surrounding the dam site. The farmland is currently cropped but will be converted to vineyard following completion of the dam.

1.2 SITE SELECTION

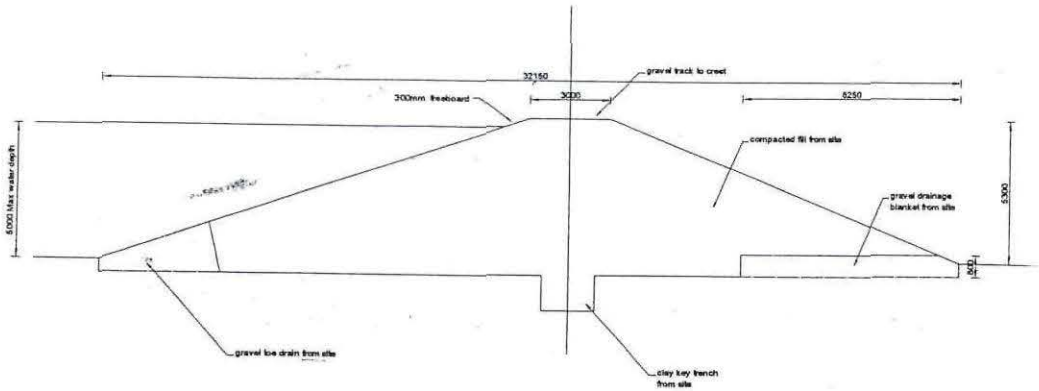
Following a general inspection of the property, possible sites were selected for further investigation. The first site was located adjacent to the Blind River water course however this was abandoned due to unsuitable founding material. The second site was located adjacent to the south bank of the stream on a higher terrace. The site is bounded to the south by a large terrace some 15m height which has a small steep sided valley formation to the south west which can be utilized as an efficient rear/side wall for the dam. The site is located centrally within the property and is close to the proposed intake site in Blind River. The underlying material was investigated and found to consist of fine slity clays, well compacted with occasional fine gravel lenses. The composition of the terrace bank was investigated and determined to be suitable for use as a rear/side wall.

1.3 DAM CONSTRUCTION

A curved wall is proposed to be constructed from the east side of the terrace bank - west of the existing dwelling- running north, then west, then south to create a wall which will contain approximately 150,000m^3 of water. The material for the dam wall will be sourced on the site with the majority coming from the terrace bank while drainage gravels and clay key material will be sourced from the surrounding farmland. The dam will be approximately 5.5m high and will have wet slopes of 1:3 and dry slope of 1:2.25. A freeboard of 300mm is proposed as there is no requirement for flood storage and wave action will be negligible as fetch distances are small. There is no catchment for the site other than its own surface area thus the small spillway proposed for the western side will be little more than an open drain which will spill into an existing gully and discharge into the adjacent creek. A scour outlet will be situated at the deepest point in the dam with discharge directed to the existing gully to the east of the site. The same structure will be used for extracting water. A filling structure will be located on the west side of the dam.

1.4 RISK ASSESMENT

The dam is relatively small in height and is not situated in a watercourse thus risk from overtopping and subsequent wall failure is not significant, provided best practice methods are used in the construction of the dam and spillway. The dam is sited close to the existing dwelling on the property; however there is a large gully between the site and the house which should divert water away from the dwelling and into the creek. State Highway 1 passes some 500m to the east of the site; however the terraced topography adjacent to the dam will divert any flow into the creek and not onto the highway.



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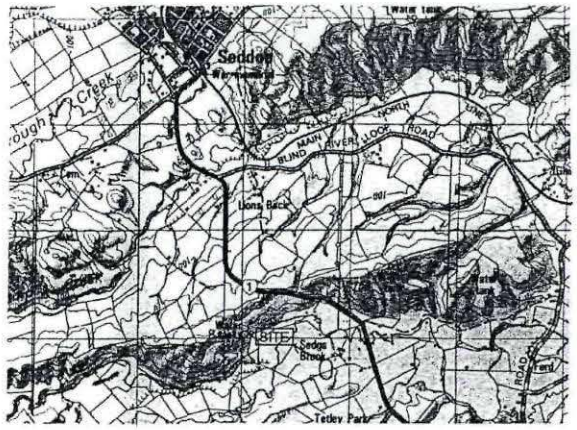

LOCATION PLAN
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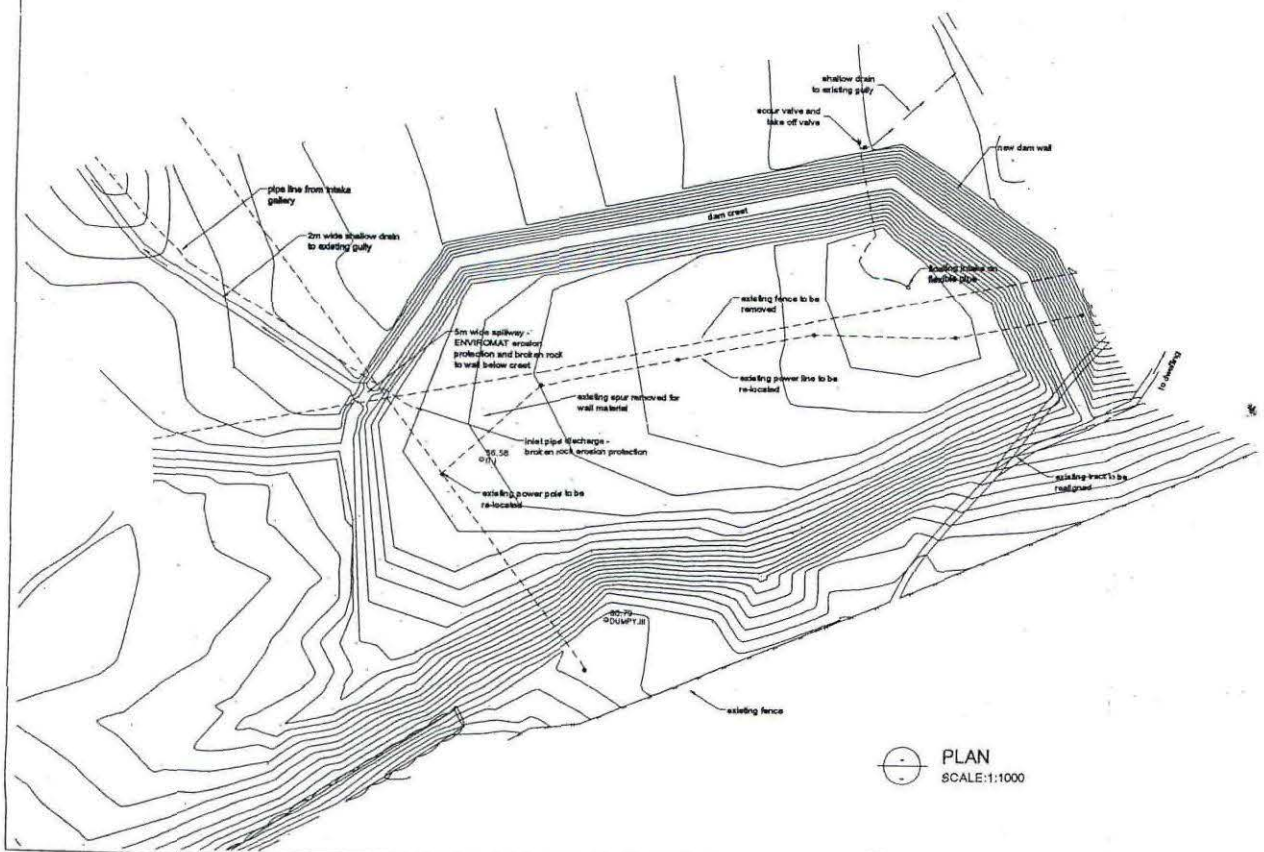

PLAN
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01 23/11/03 ISSUE FOR WATER CONSENT	ABACUS DESIGN
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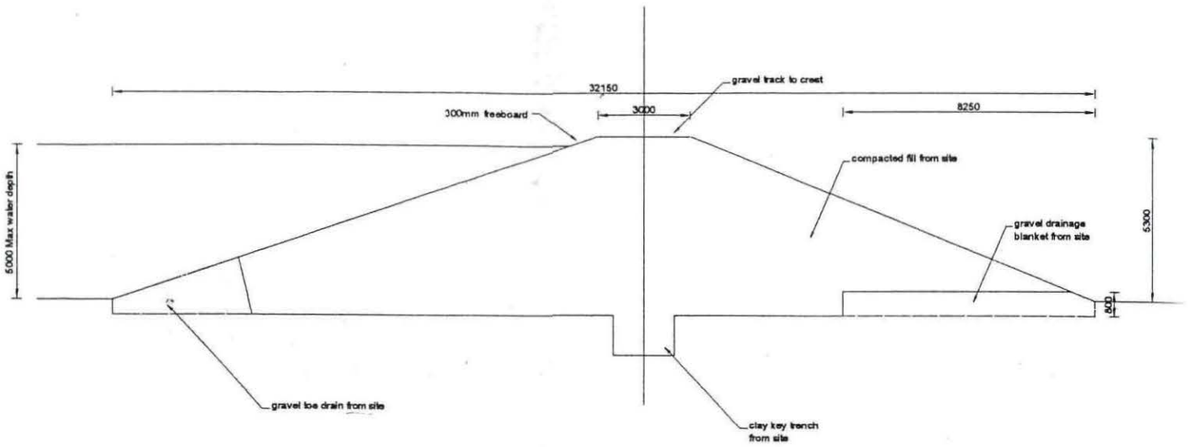
	DRAWING: CONCEPT DRAWING PLAN AND SECTION
	DATE: NOV 2002 SCALE: AS SHOWN (A1)
ISSUE: WATER CONSENT	JOB NO: HAD-SK01 AMENDMENT: 01
	CAD FILE REF: HAD-SK.PLN



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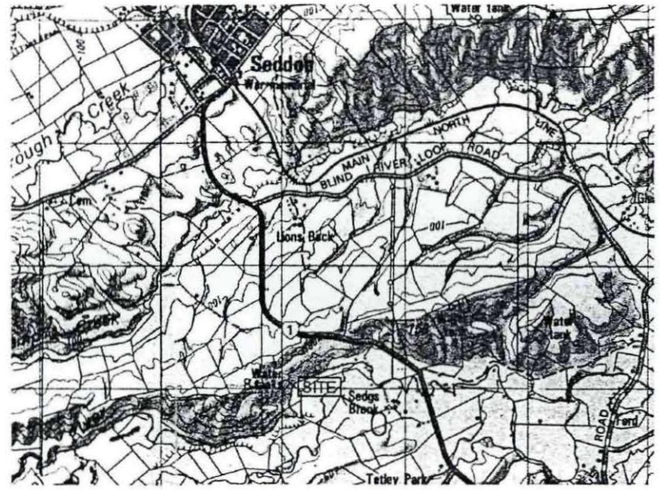

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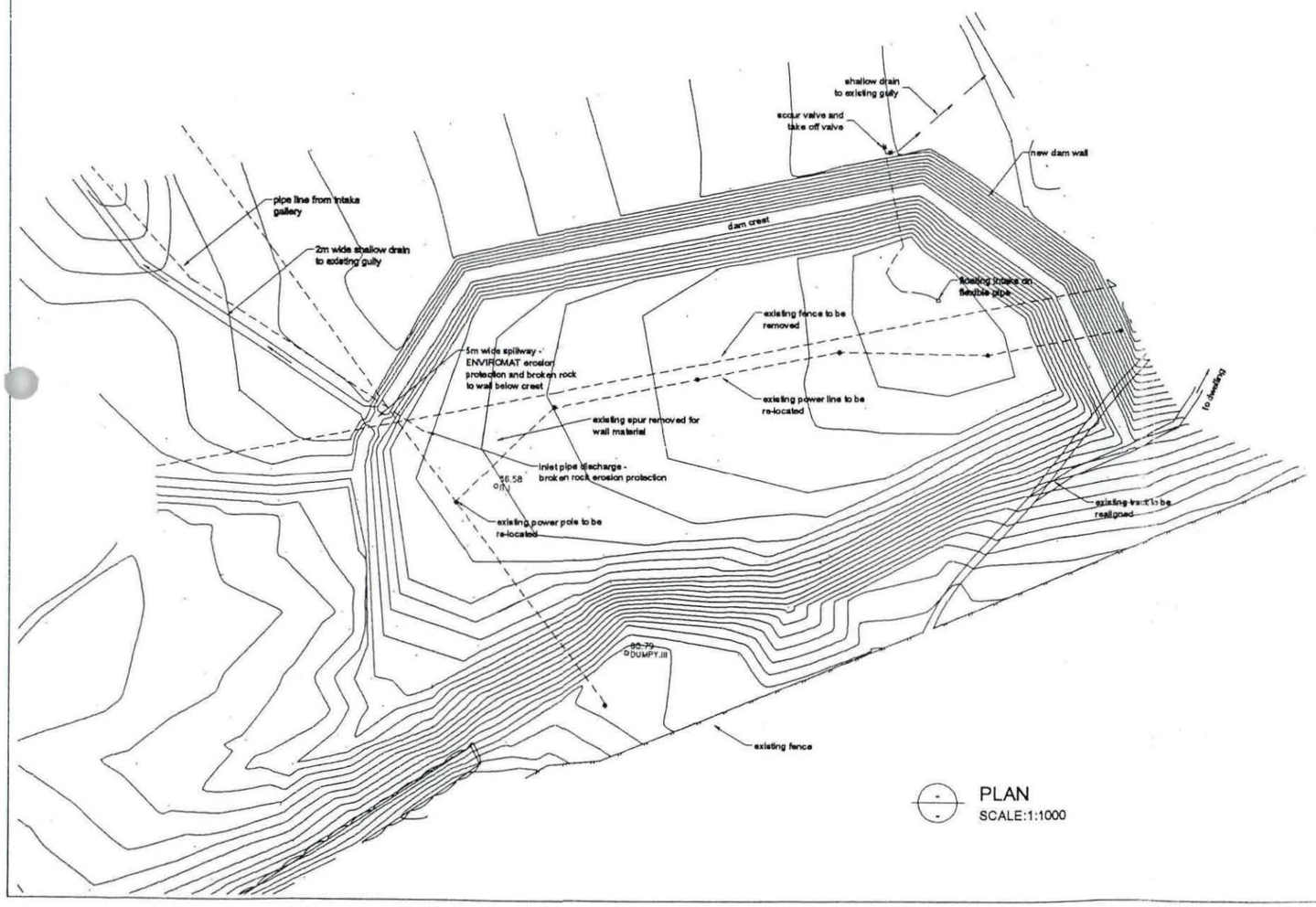

PLAN
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AMENDMENT	DATE	DETAILS
01	20/11/02	ISSUE FOR WATER CONSENT

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