



DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
NON-METALLICS SECTION

REPORT ON
COROMANDEL HEIGHTS, QUARTZITE DEPOSIT
Sections 370, 371, Hd. Noarlunga
(D.M. Bower & Co.)

by

J.G. Olliver
Geologist

and

W.V. Preiss
Student Geologist

Rept. Bk. 59/70
G.S. 2969
D.M. 1198/63

21st September, 1964

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<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
64-743	Coromandel Heights Quartzite Deposit Pt. Sect. 370, Hd. Noarlunga.	1" = 50 feet
64-762	Coromandel Heights Quartzite Deposit. Sections 370, 371, Hd. Noarlunga (D.M. Bower).	1" = 4 chains

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COROMANDEL HEIGHTS QUARTZITE DEPOSIT

Sections 370, 371 Hd. Noarlunga

(D.M. Bower & Co.)

ABSTRACT

Probable reserves of stone from the Stonyfell Quartzite Formation at the Coromandel Heights deposit are estimated at 50 million cubic yards. The proposed quarry site should realize reserves in excess of 600,000 cubic yards. Drilling or costeaning is recommended to determine the quality of the stone. Figured shale, where breakage surfaces are planar is suitable for ornamental walling.

INTRODUCTION

Following a request from Mr. D.M. Bower, the quartzite deposit on sections 370, 371, Hundred Noarlunga, County Adelaide at Coromandel Heights, 10 miles south of Adelaide was inspected by J.G. Olliver in November, 1963.

The deposit was mapped by W.V. Preiss in February, 1964 using an enlarged aerial photo Survey 326 No. 9349 (Echunga). Topographic data was obtained from Lands Department plans at a scale of 4 chains to 1 inch.

The plan of the proposed quarry site (plan No. 64-743) is based on a stadia theodolite survey by W.V. Preiss and M. Ceric (Surveying Assistant) from 26th to 28th February, 1964.

Previous Reports

- | | |
|---------------------|---|
| Forbes, B.G. (1960) | Slate Deposit, Section 343, Hd. Noarlunga. Mining Review 109, p. 36-38. |
| Heath, G.R. (1963) | Stonyfell Quartzite: Descriptive Stratigraphy and Petrography of the type section. Trans. Roy. Soc. S.A. vol. 87, p. 159-165. |
| Johnson, W. (1960) | Groundwater Prospects, Sections 370, 371, Hd. Noarlunga. Rept. Bk. 50/92 (unpub.) |

A flat uplifted Tertiary erosion surface has been dissected by the Sturt River and its tributary creeks exposing Proterozoic bedrock. The stratigraphic sequence consists of Torrensian phyllites, slates and shales with lenticular interbedded quartzites overlain by the Stonyfell Quartzite Formation which forms the ridge rising 600 feet above creek level. Tertiary mottled yellow, brown and red sandy clays and gravels, lateritic in part, cover the ridge to a probable maximum depth of 30 feet.

The Phyllites, Slates and Shales.

The argillaceous sediments consist of blue, grey and green beds ranging from strongly cleaved slates and phyllites to non-fissile bedded shales and siltstones. Occasional limestone and dolomite layers were noted.

Bedding is generally obliterated where cleavage, which strikes 165° to 205° and dips 20° to 40° to the east, is well developed. Both cleavage and bedding planes are uneven with some areas exhibiting intense crenulation and micro-folding.

Jointing is also well developed with the most prominent sets at right angles to the bedding. Quartz veins, up to three inches thick have intruded irregularly and along joint planes.

Figured shale is exposed in quarries A and B and is being worked in adjacent sections to the south and west as an ornamental walling stone (Forbes, 1960). The colour is white to pale brown with red, grey and yellow mottling and dark brown markings. The rock is a soft, weathered, thinly laminated sandy shale to siltstone with generally planar bedding and well-developed rectangular jointing.

The Interbedded Quartzites

These white, buff, brown and grey quartzites and sandstones are generally flaggy in outcrop; bedding planes being from $\frac{1}{2}$ inch to 4 inches apart. These quartzites become schistose and finer grained along strike and cannot be traced through the

property. However, they may be more persistent than indicated on the accompanying plan No. 64-762. The most prominent quartzite is 50 feet thick but lenses four feet long and two feet wide have been observed. Rectangular jointing is well developed, the joint planes being often marked by white quartz.

The Stonyfell Quartzite Formation

The Stonyfell Quartzite Formation is the major source of crushed aggregate for the Adelaide metropolitan area. At Ceromandel Heights probably the basal 400 feet of the Formation is exposed. The completion section of 830 feet is exposed in the type area at Stonyfell Quarry (Heath, 1963). Rock types vary from massive quartzites to sugary or schistose feldspathic sandstones.

In the type section, stone most suitable for the production of crushed aggregate is obtained from two quartzite members 40 feet and 60 feet thick respectively at the base of the Formation separated by 50 feet of inferior material.

At the dam, the felspar has decomposed forming a friable white clayey sandstone. Similar material has been exposed in the bulldozer costean.

Jointing is well-developed; the most prominent planes are at right angles to the bedding.

The base of the Formation, as indicated on the accompanying plan No. 64-762 is approximate only, because of poor outcrop and heavy scree.

Structure

Throughout the property, the strata dip at low angles to the south and west.

In the north-west corner a fault, marked by the development of white quartz, has formed a prominent cliff face. The fault zone strikes 205° and dips 45° to the east. Quartz has developed in a parallel zone 400 feet to the north-west and may represent another fault line. Copper mineralisation has been de-

tested in these zones in the Coromandel Valley district.

RESERVES

Reserves of stone above the outcrop limits of the Stonyfell Quartzite are 25 million cubic yards as outlined on the cross-sections plan No. 64-762.

Total reserves of stone within the property are estimated at 50 million cubic yards, assuming the base of the Stonyfell Formation as indicated on the cross-sections.

At the proposed quarry site (the area covered by plan No. 64-743) 600,000 cubic yards of stone are available above the 1,350 feet level.

CONCLUSIONS

A thin veneer of Tertiary sediments covers the Stonyfell Quartzite Formation and older phyllites, slates, shales and quartzites.

Reserves of readily available stone at the proposed quarry site are 600,000 cubic yards.

Probable reserves of stone within the property are estimated at 50 million cubic yards.

The layers of good and poor quality stone could not be outlined due to poor outcrop and heavy scree.

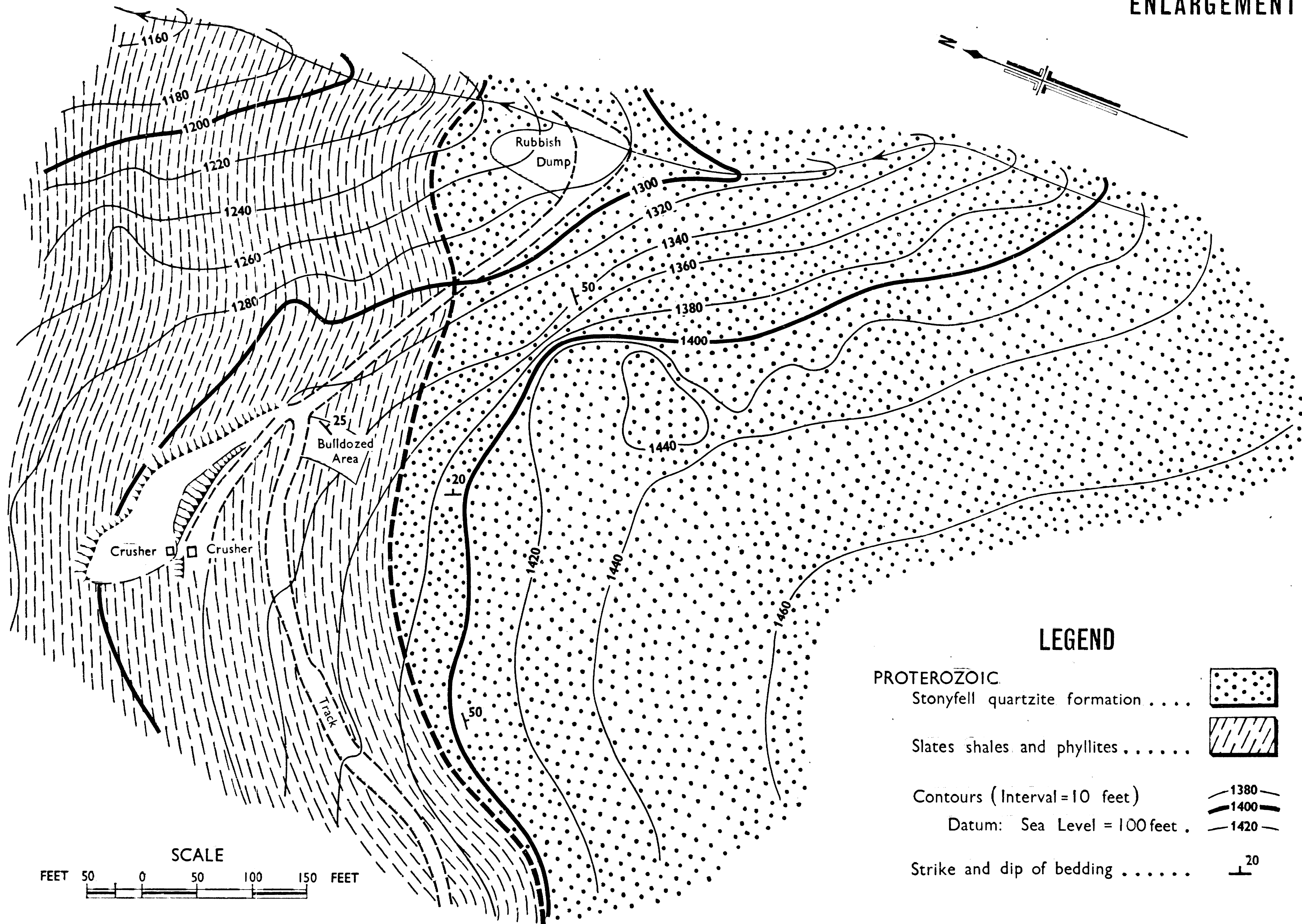
Drilling or bulldozing is recommended to determine the quality of stone at the proposed quarry site.

The figured shale horizon is suitable for use as a walling stone.

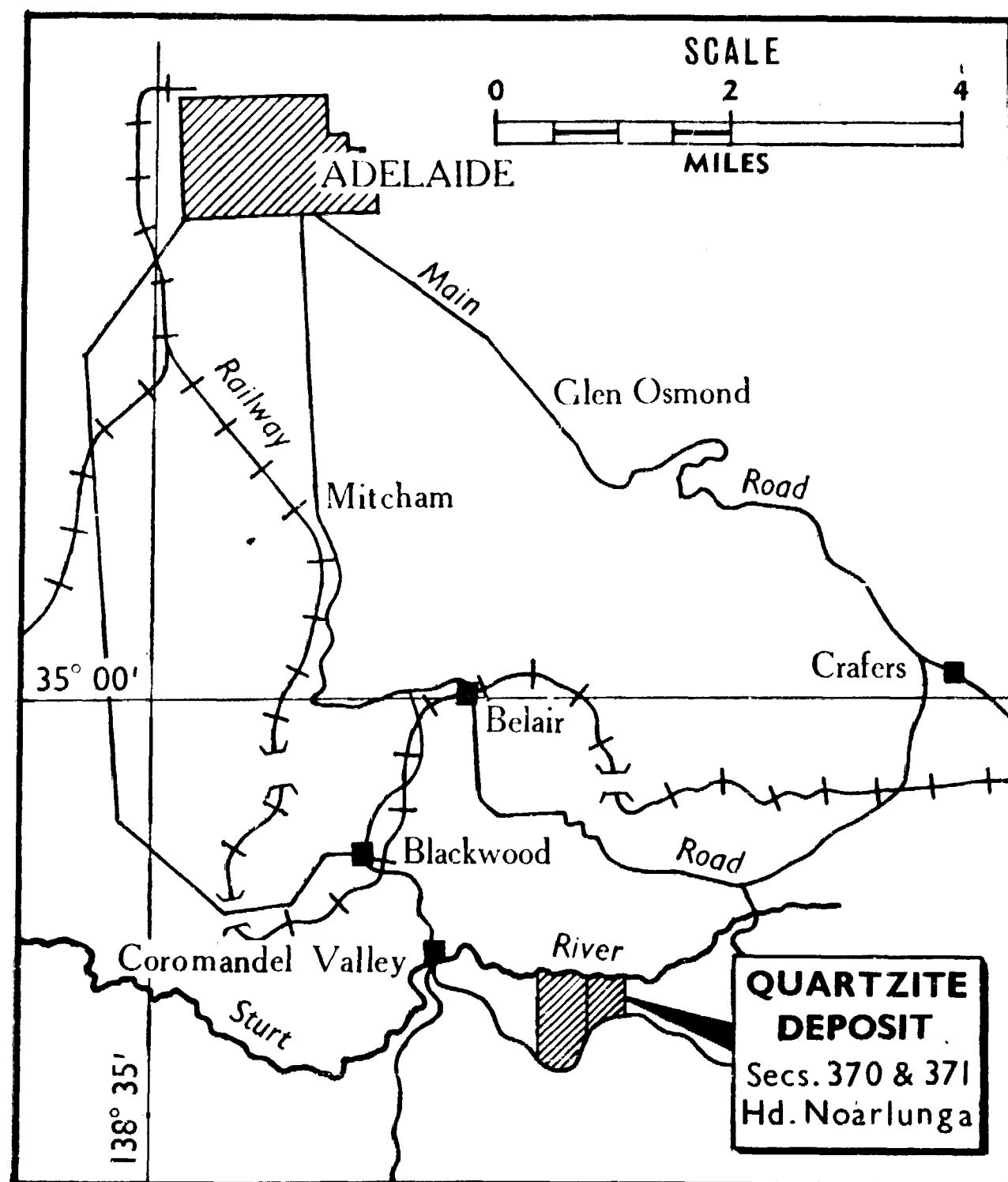
Building stone cannot be obtained from the phyllites and slates due to the crenulated bedding planes and the presence of slaty cleavage.

JGO:ANK
21.9.1964

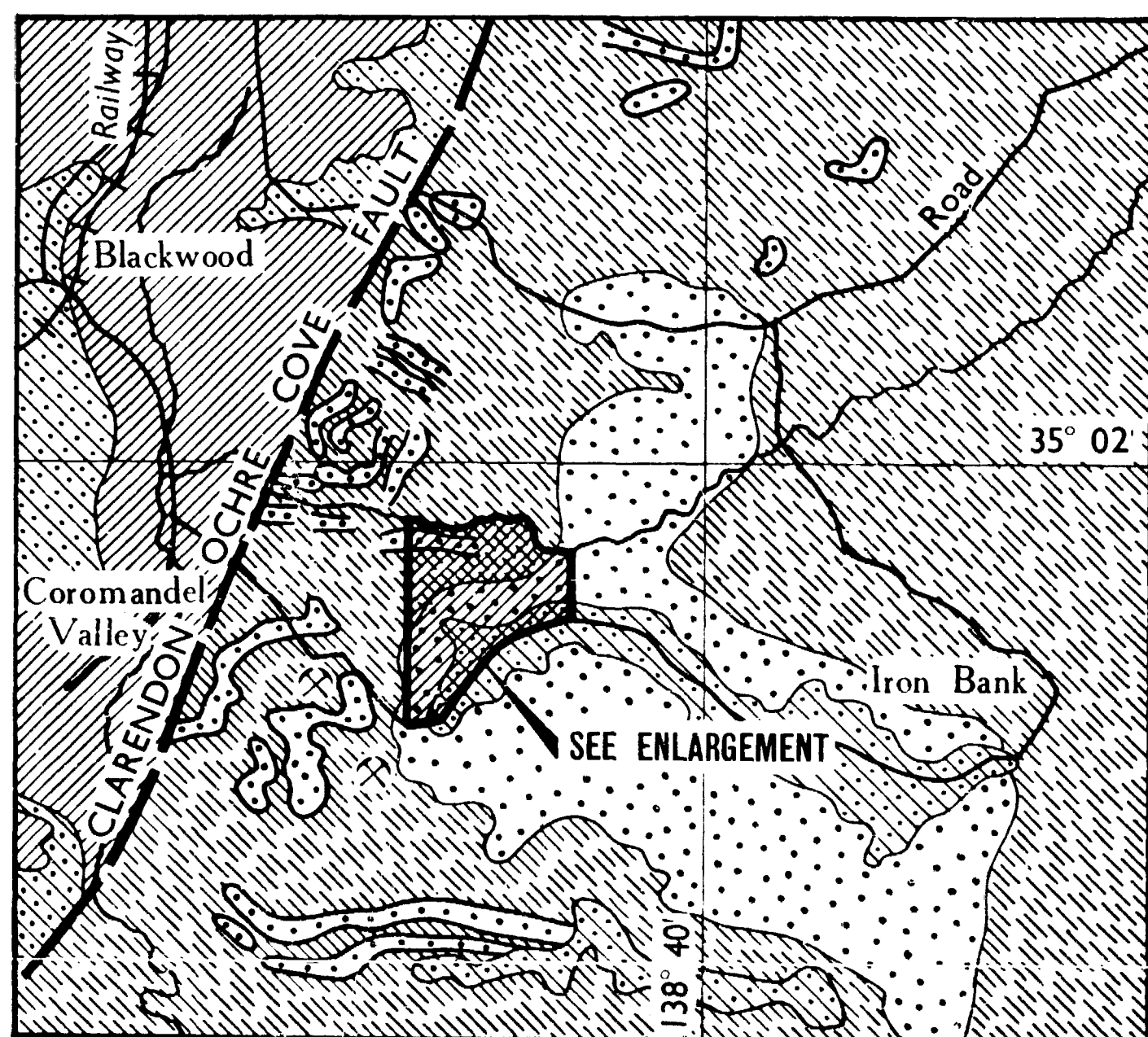

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LOCALITY MAP



REGIONAL GEOLOGICAL MAP



TERTIARY



Freshwater sands and gravels

PROTEROZOIC



Sturtian slates

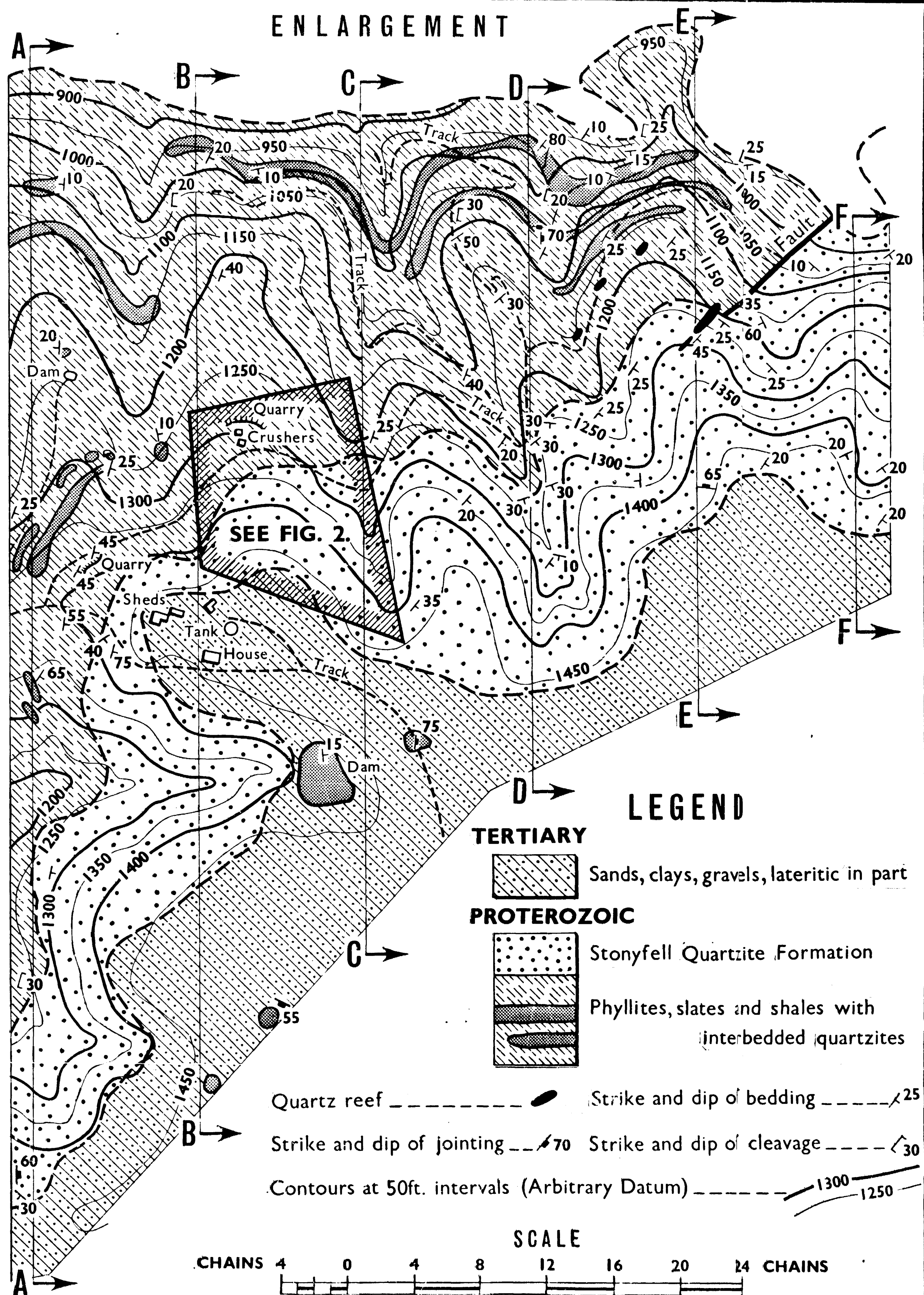


Phyllites with interbedded quartzites and the Stonyfell Quartzite Formation

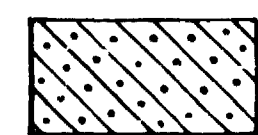
Shale quarries

LEGEND

ENLARGEMENT

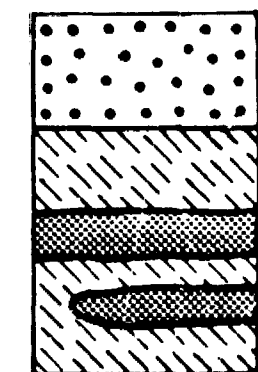


TERTIARY

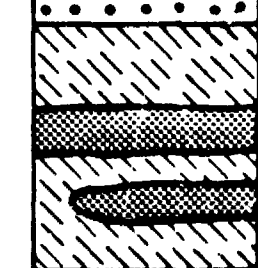


Sands, clays, gravels, lateritic in part

PROTEROZOIC



Stonyfell Quartzite Formation



Phyllites, slates and shales with interbedded quartzites

Quartz reef ———— Strike and dip of bedding ———— 25

Strike and dip of jointing ———— 70 Strike and dip of cleavage ———— 30

Contours at 50ft. intervals (Arbitrary Datum) ———— 1300 1250

SCALE



