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Preliminary report on proposed bridge site, Cataract Gorge, Launceston

by M. J. Longman

The Publics Works Department has requested an examination of the geological problems connected with siting a bridge across Cataract Gorge, Launceston about 100 feet downstream of the existing bridge. A geological examination of the area has been made and a magnetometer survey was also attempted.

Geology

The basement rock in this area is Jurassic dolerite which is covered along the banks of the Tamar River by alluvium and Tertiary sediments. The south-eastern abutment of the proposed bridge is situated on fresh, well jointed dolerite which contains a few narrow weathered zones along joint planes. The north-western abutment is more complex as it is situated close to a major, near vertical fault having a vertical displacement of about 700'. The fault trends 330° but the precise position of the fault scarp cannot be determined from surface exposures as the downthrown block and the fault itself is obscured by later sediments. There is some evidence to suggest a fault along Cataract Gorge also which may further complicate the position.

The distribution of dolerite outcrop in the vicinity of the proposed bridge is indicated on the accompanying geological plan.

Drilling at Royal Park indicated that the dolerite on the downthrown block was covered by more than 150 feet of clays and sand. As this block is tilted to the south-west the indications are that the north western abutment is situated on or close to a buried dolerite escarpment which may have a 200 foot face. Since dolerite possesses magnetic properties a magnetometer survey was made in order to determine the location of the fault but the results were inconclusive due to interference from local bodies. In view of this an approach has been made to the Bureau of Mineral Resources to carry out a seismic refraction survey of the area. It is expected that a decision as to whether the Bureau is able to do this will be made by the end of November. If this work is to proceed it will probably be done early next year. The Bureau makes no charges for technical services but would probably expect the Public Works Department to supply a small quantity of explosives and perhaps one or two unskilled labourers for a week or so.

Dominant joints in the dolerite are near vertical (80°–90°) and strike between 31°–41°, 114°–123° and 142°–146°. Minor vertical joints strike 60°–63°, 76°–84° and 152°–160°. The inclined joints are less numerous, forming 10% of the measured joints, mainly striking between 120°–140° and 160°–170° and dipping 8°–55°E and 16°–47°E respectively. Minor inclined joints strike 020°–040°, 050°–070°, 120°–140° and dip 16°–32°E, 40–74°S and 26–42°W respectively.

Thus the northern abutment is close to the fault scarp and there are some flat lying joints dipping toward this scarp. It is therefore important to establish precisely the slope of the dolerite surface beneath the cover of superficial material.

Eventually it will be necessary to carry out some diamond drilling in the area but it is considered that some drilling could be saved and a more complete picture of the sub surface conditions would be obtained if the drilling was preceded by a seismic survey.

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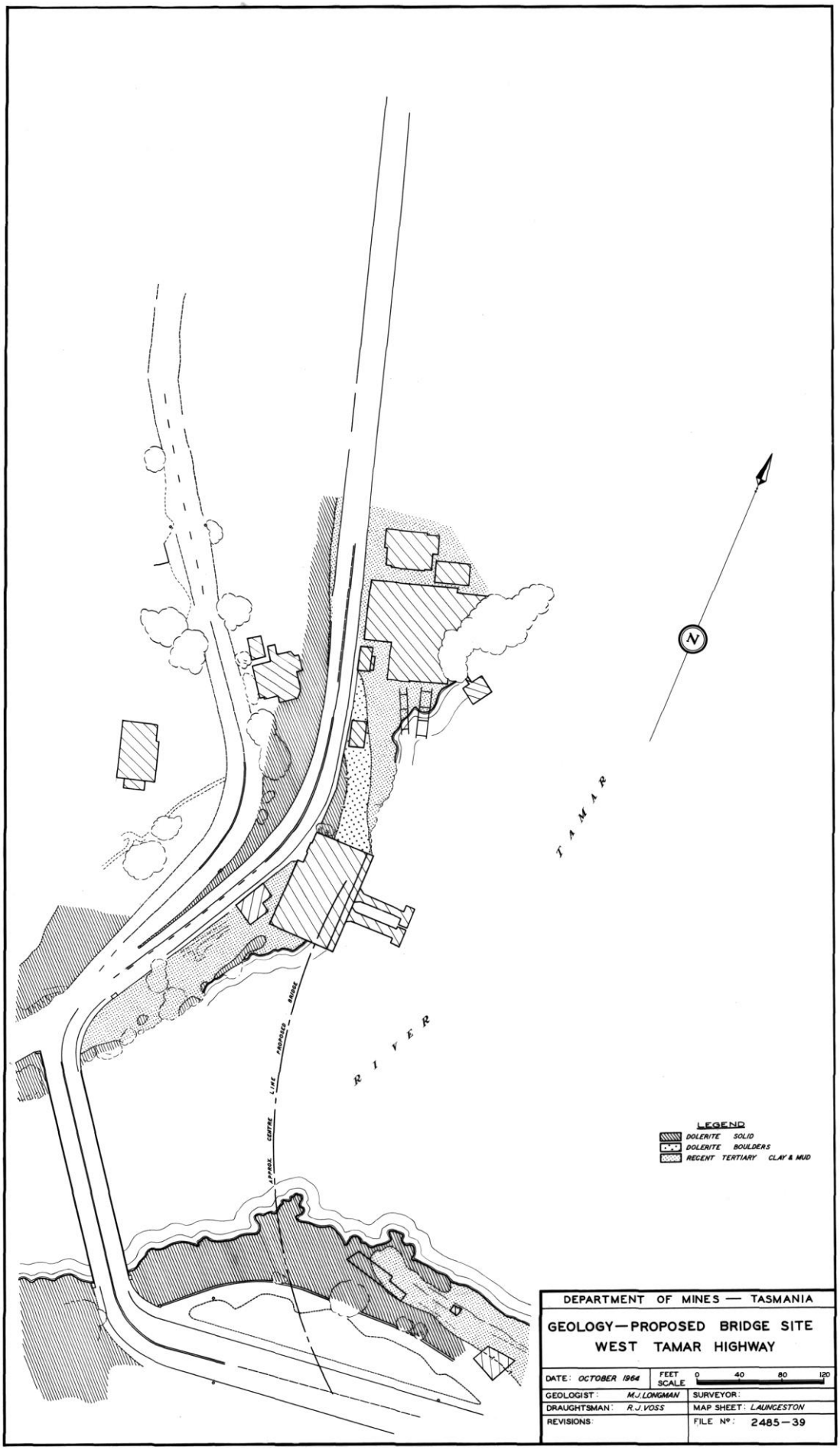

DEPARTMENT OF MINES — TASMANIA

GEOLOGY—PROPOSED BRIDGE SITE WEST TAMAR HIGHWAY

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