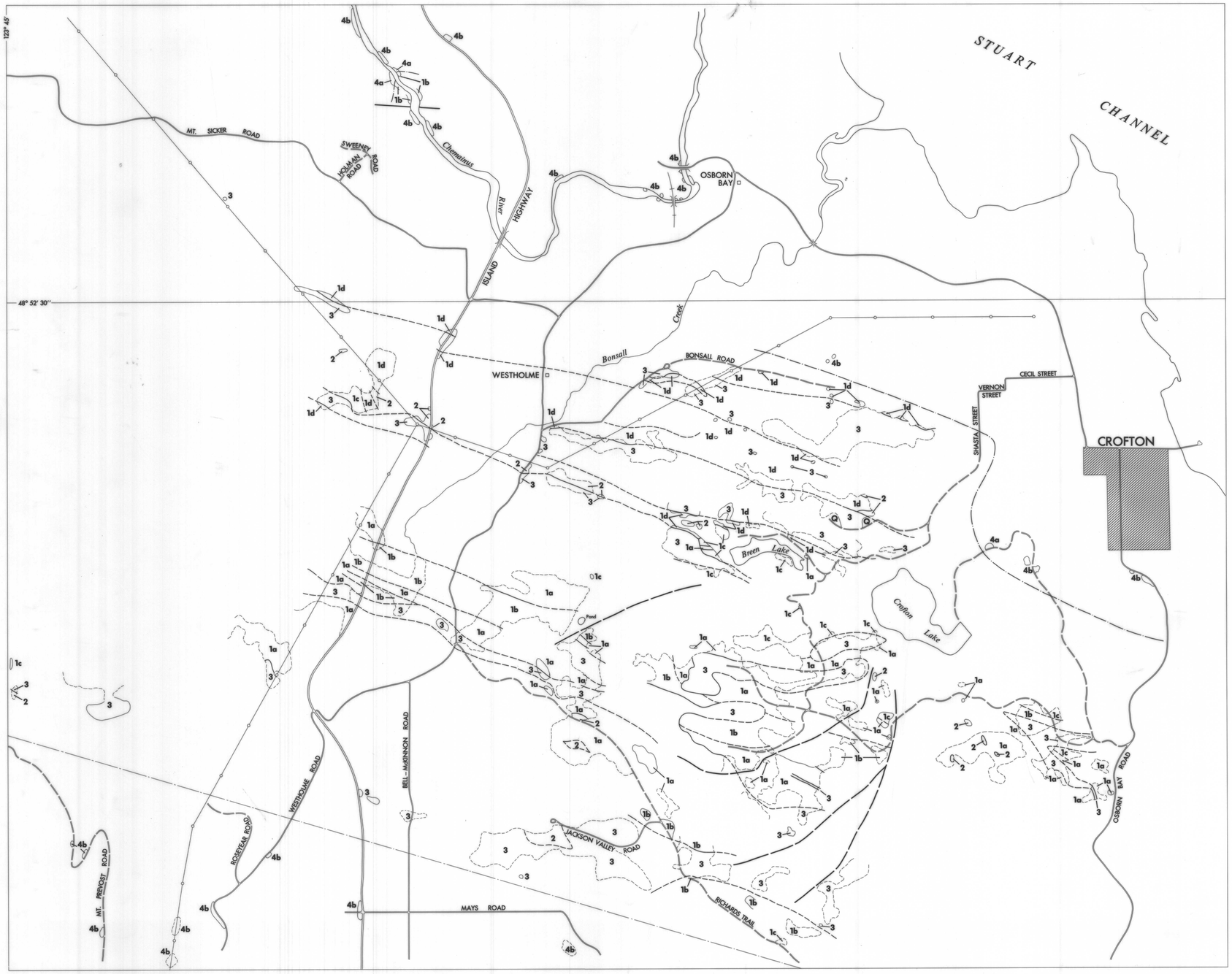

JULY 1980

PRELIMINARY MAP 40

GEOLOGY OF THE MT. RICHARDS AREA

VANCOUVER ISLAND, BRITISH COLUMBIA

GEOLOGY BY G. E. P. EASTWOOD 1978–1979

Kilometre 0 1 Kilometre

LEGEND

NANAIMO GROUP

- 4b — SANDSTONE, SILTSTONE, AND SHALE
- 4a — CONGLOMERATE AND GRIT

INTRUSIVE ROCKS

- 3 — HORNBLENDE SHONKINITE (WITH UP TO 10 PER CENT ILMENITE)
- 2 — QUARTZ FELDSPAR PORPHYRY

SICKER GROUP

- 1d — SILTY AND GRITTY ARGILLITE; QUARTZ–FELDSPAR–MICA SCHIST; GRITTY SILTITE (MAINLY VOLCANIC DERIVED MATERIAL); SOME NARROW BANDS OF TUFF
- 1c — TRACHYTE TUFFS AND FLOWS; MINOR VOLCANIC GREYWACKE
- 1b — TRACHYTE WITH PROMINENT MEDIUM TO COARSE HORNBLENDE
- 1a — FRAGMENTAL MAFIC TRACHYTE, MUCH EPIDOTE ALTERATION

SYMBOLS

- OUTCROP; OUTCROP AREA
- NANAIMO CONTACT, APPROXIMATE
- OTHER CONTACTS
- AIR PHOTOGRAPH LINEAR
- PAVED ROAD
- GRAVEL OR DIRT ROAD
- QUARRY ..... Q

NOTES ON GEOLOGY

The Sicker Group is host to the Lenora-Tyee gold-silver-copper-lead-zinc-cadmium orebodies on Big Sicker Mountain and to the orebodies of Western Mines Limited near Buttle Lake. The latter orebodies appear to be controlled stratigraphically as well as structurally, therefore detailed mapping was begun to determine the stratigraphic sequence near the type area. On Big Sicker Mountain the nature and relationships of the rocks are obscured by intense shearing, but in the Richards group intense shearing is largely confined to the most northerly ridge.

In the north part of the Richards group there is a north-south progression of rock types in the Sicker Group which appears, from comparison with the sequence in the Cowichan Lake area, to be in order of increasing age. Poor graded bedding in a few places is consistent with this interpretation. Along the crest and south face of Mount Richards ridge the Sicker rocks are more or less coarsely fragmental and include at least two bands characterized by medium to coarse hornblende grains in a fine-grained matrix. These grains may be phenocrysts but are more likely pyroclastic. It is uncertain whether the sequence is homoclinal or whether the hornblendic layer has been repeated by folding.

The Sicker rocks have been successively intruded by mainly small bodies of quartz-feldspar porphyry and medium to large bodies of shonkinite. The shonkinite resembles gabbro in texture and the abundance of dark minerals, but the feldspar is albite-oligoclase. The older rocks are overlapped on the north by poorly exposed clastic sedimentary rocks of the Nanaimo Group, and are probably in fault contact with them to the south. Post-Nanaimo faulting has produced a Sicker inlier along the Chemainus River.

Pyrite is common to abundant, particularly in the Sicker upper division, but contains only traces of gold and silver. Small amounts of chalcopyrite and malachite occur in several small shear zones and quartz veins.

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources