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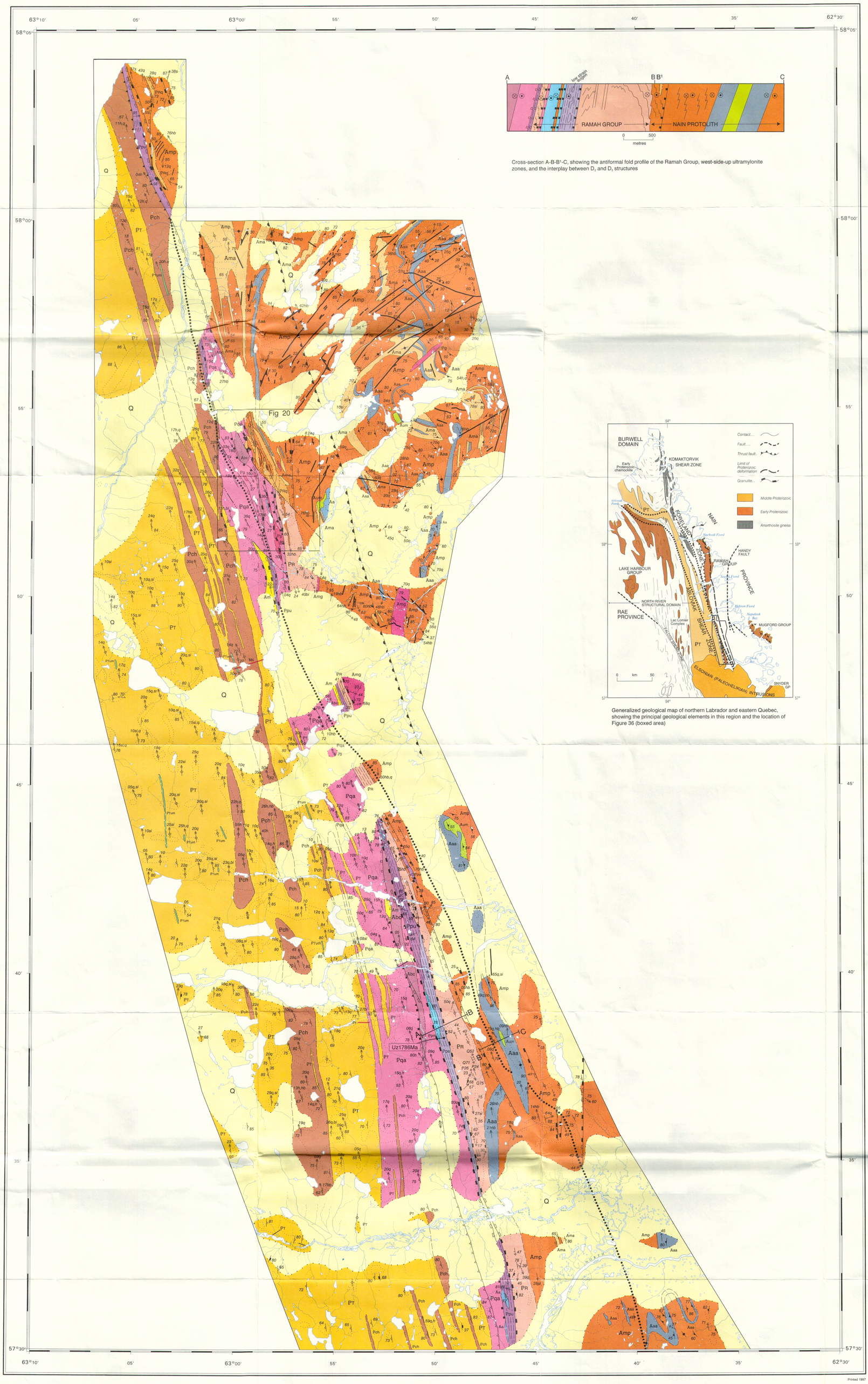
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA







Cross-section A-B-B¹-C, showing the antiformal fold profile of the Ramah Group, west-side-up ultramylonite zones, and the interplay between $D_3$ and $D_5$ structures




Generalized geological map of northern Labrador and eastern Quebec, showing the principal geological elements in this region and the location of Figure 36 (boxed area)

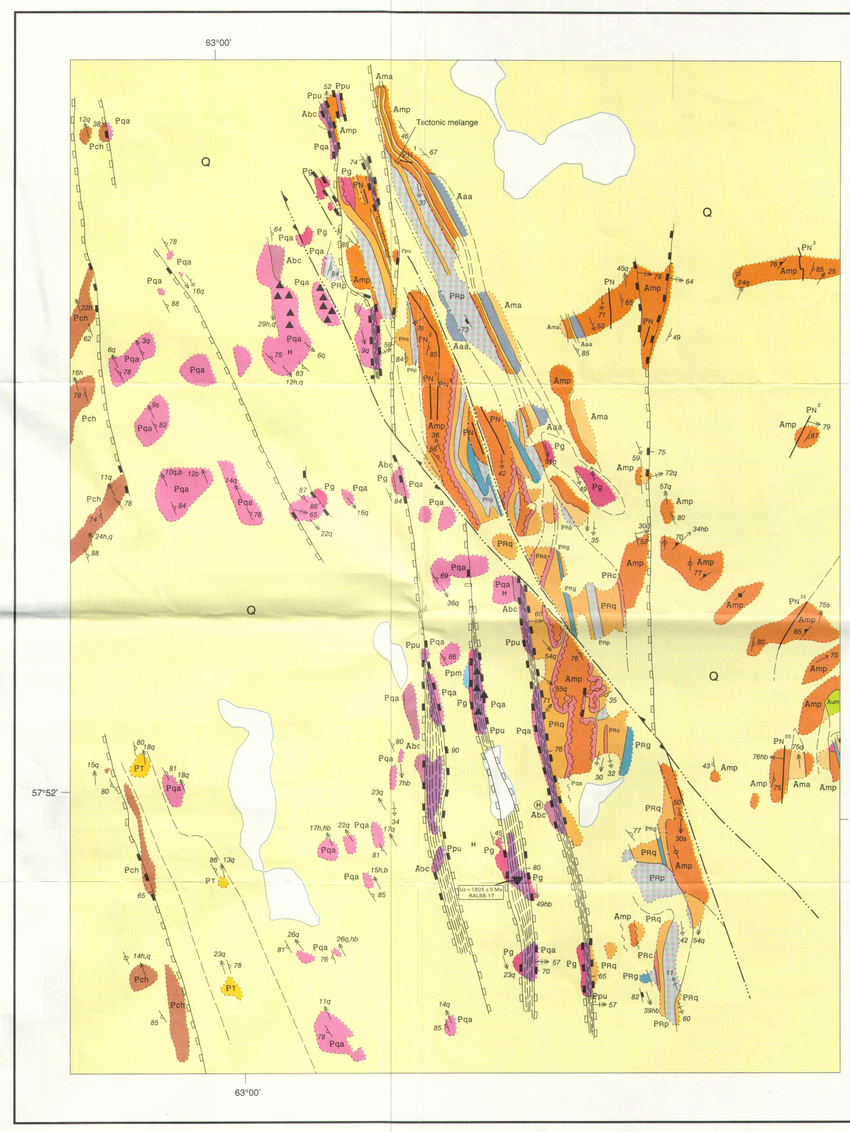



**Figure 20. Detailed geological map showing the deformation of the Ramah Group and surrounding gneisses across the transition from the Foreland tectonic zone into the Abloviak shear zone (see Fig. 36 for location). The Ramah Group is in contact with basement gneisses across three types of planar structures: relics of the unconformity; S, thrust faults that repeat the unconformity and interleave the group with basement gneisses (see text); and $D_5$ zones of ultramylonite and pseudotachylyte**

Scale 1:20 000 - Échelle 1/20 000

Metres 500 0 500 1000 1500 2000 Mètres

## LEGEND

**QUATERNARY**

- Q — *Glacial drift*

**NEOHELIKIAN**

- NN⁷ — *Nutak diabase dyke (1267 Ma) (superscript indicates width of dyke in metres)*

**EARLY PROTEROZOIC**

- Ppu — *Porphyroclastic mylonite to ultramylonite derived from Ramah Group supracrustal rocks (ca. 1790 Ma)*
- Pps — *Porphyroclastic mylonite to ultramylonite derived from Ramah Group supracrustal rocks (ca. 1790 Ma)*
- Ppm — *Tectonic mélange of Ramah Group supracrustal rocks in basement gneiss*
- Pg — *Fine- to medium-grained, pink granite and foliated granite (1805 ±5 Ma)*

**TASIUYAK GNEISS DOMAIN**

- Pch — *Homogeneous to layered, orthopyroxene-bearing tonalite, norite and granodiorite (ca. 1880 Ma)*
- PTum — *Granulite-facies mafic and ultramafic gneiss*
- PT — *Tasiuyak gneiss: garnet-biotite ± sillimanite paragneiss and migmatite*

**REWORKED ARCHEAN GNEISSES WITHOUT NAPAKTOK DYKES**

- Am — *Garnet-biotite paragneiss*
- Aa — *Mafic to ultramafic gneiss*
- Abc — *Large bodies and tectonic inclusions of metagabbroic anorthosite and derived gneiss*
- Pqa — *Tonalitic orthogneiss and migmatite*

**NAIN PROVINCE**

**RAMAH GROUP (PPr - PR)**

- PR — *Undivided*
- PRg — *Garnet amphibolite = metamorphosed gabbro sill*
- PRp — *Biotite-sillimanite ± garnet ± muscovite schist = metapelite*
- PRc — *Metaconglomerate*
- PRq — *Metaquartzite and quartz arenite*
- PRr — *Pink, clotty-textured quartzo-feldspathic gneiss = metamorphosed regolith*

- $PN^{20}$ — *Napaktok metadiabase dyke; with dip and shear sense where known, (superscript indicates thickness of dyke in metres)*

**ARCHEAN**

- Amg — *White, K-feldspar megacrystic granite and derived granite gneiss*
- Ama — *Garnet-sillimanite metapelite and associated metasedimentary schists*
- Aaa — *Mafic gneiss*
- Aum — *Ultramafic gneiss*
- Amp — *Tonalitic orthogneiss and migmatite*

- *Rock outcrop, area of rock outcrop* ×
- *Limit of extensive Quaternary cover*
- *Geological contact: defined, interpreted*
- *Easternmost occurrence of Early Proterozoic hypersthene and hypersthene rimmed by amphibole* H (H)
- *Pseudotachylyte occurrence* Ps
- *U-Pb zircon geochronology sample site and age* ▼

**EARLY PROTEROZOIC FABRIC ELEMENTS AND ISOGRADS**

- *Post-$D_3$ faults*
- *Transcurrent faults in Nain Province*
- *Sinistral transcurrent shear indicator on $D_5$ ultramylonite (cross-section)*
- *Early Proterozoic orthopyroxene-in isograd along $D_5$ mylonite zone, with ornament on high-grade side: filled ornament = defined, open ornament = extrapolated*
- *Early Proterozoic orthopyroxene-in isograd, with ornament on high-grade side: filled ornament = defined, open ornament = extrapolated*
- *$L_5$ mineral elongation lineation (hb = hornblende, q = quartz, chl = chlorite)* 60
- *$S_5$ plane and zone of porphyroclastic mylonite to ultramylonite: filled = defined, open ornament = extrapolated; tick shows direction and value of dip* 45
- *Eastern limit of $S_5$ schistosity in reworked Nain gneisses, used to define the eastern limit of the Foreland tectonic zone*
- *Eastern limit of the Abloviak shear zone, characterized by shallow north-plunging mineral elongation lineations ($L_5$) on subvertical $S_5$ schistosity planes*
- *$L_5$ mineral elongation lineation in gneisses (plunging, horizontal); in Ramah Group metapelite (P), in Ramah Group quartzite (Q) (bi = biotite, h = hypersthene, hb = hornblende, q = quartz, pl = plagioclase)* Q25 25
- *$F_5$ fold axis: symmetrical, S fold, Z fold in gneisses; in Ramah Group metapelite (P), in Ramah Group quartzite (Q)* 20 35 25 P25
- *$S_5$ fabric element (inclined, vertical, with shear sense where known): quartz blade foliation in reworked Nain gneisses of the Foreland tectonic zone; transposed gneissosity (Archean or $S_5$) in the Abloviak shear zone (inclined, vertical)* 80 45 25
- *$S_5$ fabric element: schistosity in the Ramah Group; gneissic in the Tasiuyak gneiss, defined by compositional layering (= $S_0$ / $S_5$)* 80
- *$D_5$ thrust plane ($S_5$)* 50
- *Bedding in Ramah Group ($S_0$)*
- *Unconformable contact (defined, interpreted)*

**ARCHEAN FABRIC ELEMENTS**

- *Mineral elongation lineation (h = hypersthene, hb = hornblende, q = quartz, si = sillimanite)* 30 40
- *Fold axis* 60 70
- *Gneissic layering (inclined, vertical, with shear sense where known)*

*Geology by L. Corriveau, I. Errranovics, F. Mengel and M.J. Van Kranendonk (1987-89);*

*Previous geology by F. C. Taylor (1977)*

*To accompany GSC Bulletin 497*

*Map compilation and interpretation by M.J. Van Kranendonk (1992)*

*Digital cartography by D. Viner, Geoscience Information Division*

LOCATION MAP - CARTE DE LOCALISATION

**Figure 36. Geology of the eastern margin of the Early Proterozoic Torngat Orogen, North River map area, Labrador. Location of Figure 20 indicated by box; cross-section A-B-B¹-C shown above**

Scale 1:75 000 - Échelle 1/75 000

Kilometres 1 0 1 2 3 4 5 6 Kilomètres

Transverse Mercator Projection CM 62°50′, Scale Factor 1.0
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Projection transverse de Mercator M.C. 62°50′, facteur d'échelle 1.0
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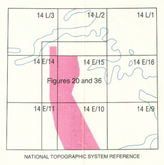


NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

LAB/1217

Figures 20 and 36

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