GEOLOGIC MAP OF THE FRIES FAULT ZONE SOUTH OF RINER, VIRGINIA

compiled by Richard S. Whitmarsh, 1990

includes contacts adapted from Truman (1976), Kaygi (1979), and Bartholomew pers. comm. (1992); see text for references

sites 1 through 5 (circled) are referred to in text under LITHOLOGIC DESCRIPTIONS

outline of Appendix 1B

outline of Appendix 1A

kilometers 0 0.25 0.5 1.0

miles 0 0.25 0.5 1.0

N

MN = 5°W

VA

1 - Radford South 7.5 minute quadrangle
2 - Riner
3 - Pilot
4 - Indian Valley
5 - Alum Ridge

EXPLANATION

Chilhowee Group; metasediments including quartz arenites, feldspathic sandstones, siltstones, and rare calcareous breccias. Well-foliated near contacts with Pilot Gneiss and Little River Gneiss.

Ashe Formation; predominantly biotite-quartz-feldspar schists with few exposures of muscovite phyllite.

Pilot Gneiss; exposures near Copper Valley include chlorite-epidote-actinolite schists and layered gneisses with lesser amounts of leucocratic gneiss, mafic dikes/sills, graphitic schist, and rare garnetiferous tectonites. Mylonitic textures predominate and locally include porphyroclasts of feldspar and/or hornblende.

Little River Gneiss; feldspar-augen gneiss, exhibits varying degrees of mylonitization, locally ultramylonitic at base. Includes rare exposures of garnet-bearing porphyroblastic gneiss oriented at a high angle to the dominant fabric.
lc = leucogranite, in close association with metamorphosed dioritic dikes/sills (dark)

granoblastic gneiss of uncertain affinity.

strike and dip of upright and overturned strata

strike and dip of compositional layering

trend of subvertical foliation in porphyroblastic gneiss

trend and plunge of extension lineation, crenulation fold axes, and minor overturned synformal fold axes

thrust fault with offsetting transfer faults; teeth on upper plate

lithologic contact; all contacts are approximate, dashed where uncertain, queried where conjectural