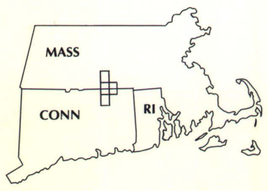
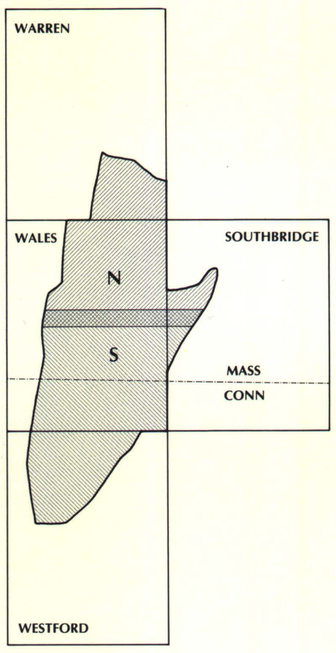
PLATE 1N. GEOLOGIC MAP, BRIMFIELD-STURBRIDGE AREA (NORTH SHEET)

Location:



7½'quadrangles:



EXPLANATION OF SYMBOLS

BEDROCK EXPOSURE

- outcrop
- pipeline trench exposure
- supplemental outcrop (for sources see Plate 1S)

MAP LINES

tightly constrained — well constrained — approximate

- geologic contact
- overturned thrust fault; teeth on original upper plate
- mylonite zone with reverse motion; teeth on hanging wall
- high angle fault; motion uncertain
- A — A' location of structure section (see Plate 3)

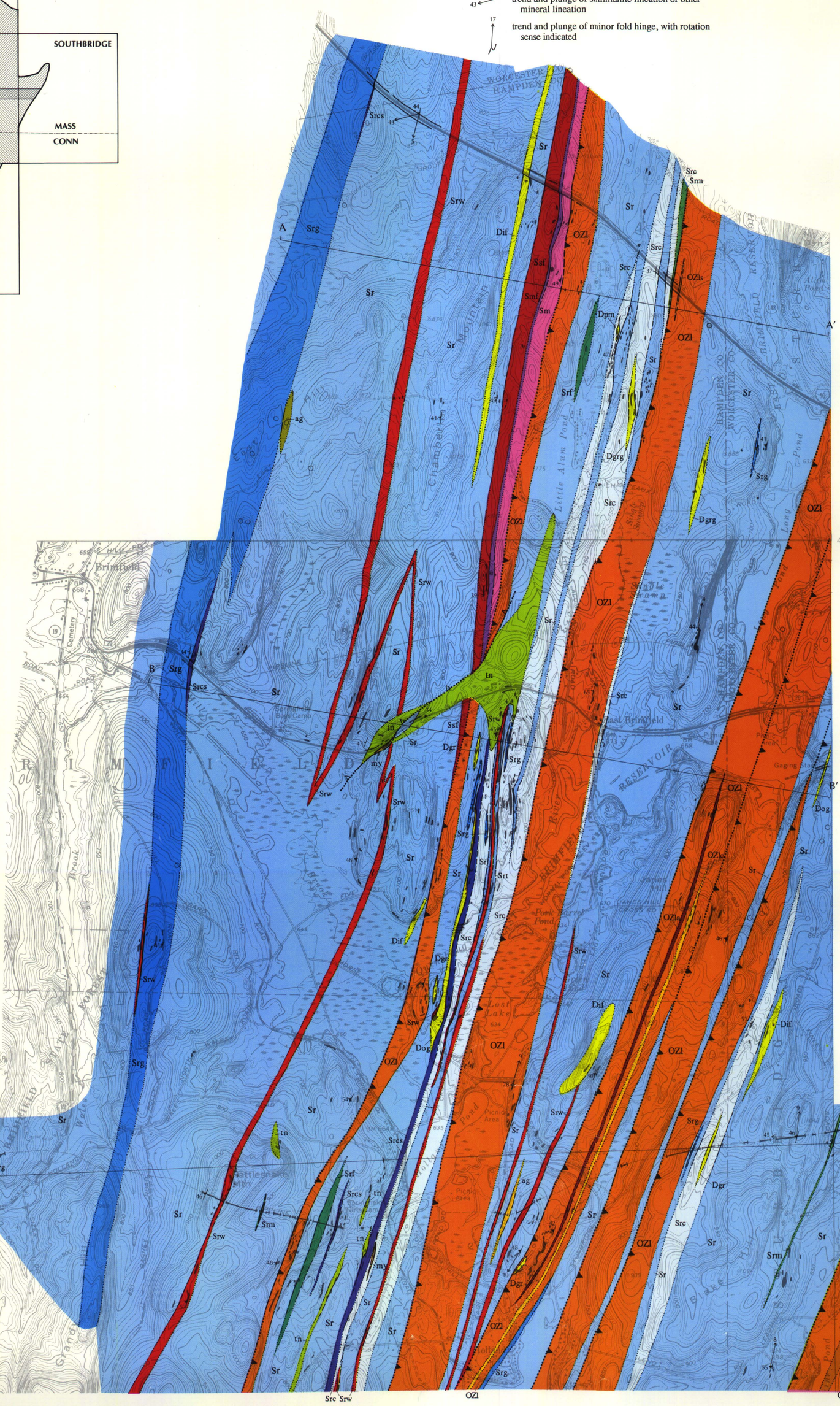
STRUCTURAL SYMBOLS

PLANAR FEATURES

- 50 strike and dip of bedding or compositional layering
- 44 strike and dip of metamorphic foliation
- 56 strike and dip of mylonitic foliation
- 78 strike and dip of crenulation cleavage

LINEAR FEATURES

- 43 trend and plunge of sillimanite lineation or other mineral lineation
- 17 trend and plunge of minor fold hinge, with rotation sense indicated



EXPLANATION OF MAP UNITS

STRATIFIED ROCKS

SILURIAN(?) (eastern facies)

Paxton Formation

- Sp — interlayered purple biotite granulite and green calc-silicate granulite
- Spss — sulfidic sillimanite-biotite-garnet schist
- Spg — gray, quartz-sillimanite-garnet-cordierite schist with massive granulite beds

SILURIAN

Madrid Formation

- Sm — layered gray quartz-feldspar-biotite granulite and green calc-silicate granulite
- Smf — feldspathic biotite schist

Smalls Falls Formation

- Ssf — sulfide-rich, sillimanite - Mg-biotite - graphite schist with quartzite beds

Rangeley Formation

- Sr — undifferentiated; predominantly red- or rusty-weathering sillimanite-garnet schist with interlayered gray or greenish gray granulites
- Srs — green-striped granulite
- Srq — sillimanite-garnet quartzite
- Srm — bedded diopside marble
- Srl — thinly interbedded gray sillimanite-garnet schist and quartzite
- Src — slabby, layered granulites with prominent green-speckled diopside calc-silicate layers
- Srw — white, sulfidic sillimanite-biotite-cordierite schist
- Srcs — dark-gray, sulfidic calc-silicate granulite
- Srt — thinly bedded quartz-rich sillimanite-garnet-biotite schist
- Sri — rusty-weathering magnetite-garnet-grunerite gneiss
- Srd — garnet-doorknob granulite
- Srg — gray-weathering quartz-biotite-sillimanite-garnet schist
- Srf — feldspathic sillimanite-biotite-garnet gneiss and schistose granulite
- Sra — layered amphibolite pod

ORDOVICIAN(?) TO PROTEROZOIC(?)

Leadmine Pond Gneiss

- OZl — undifferentiated; predominantly gray, feldspathic gneisses
- OZlo — corundum - garnet - K-feldspar gneiss
- OZlc — calc-silicate granulite
- OZlm — predominantly mafic gneiss, including pyroxene granulite and amphibolite
- OZlr — rusty-weathering sillimanite - K-feldspar - graphite schist
- OZla — amphibolite
- OZlq — garnet quartzite; locally includes rusty schist
- OZls — sillimanite-garnet-biotite schist, commonly with quartz-rich granulite layers
- OZll — interlayered felsic gneiss and amphibolite
- OZlf — felsic gneiss

INTRUSIVE ROCKS

JURASSIC

- Jd — diabase dike

DEVONIAN(?)

- Dp — pegmatite
- Dpm — muscovite pegmatite
- Dgr — granite
- Dgrg — granite gneiss
- Dif — felsic gneiss, undifferentiated
- Dog — orthopyroxene-bearing gneiss

DEVONIAN OR OLDER

- tn — tonalite gneiss
- ag — amphibolite or gabbro
- um — hornblende-orthopyroxene-spinel ultramafic rock

TECTONIC ROCKS

- my — mylonite
- cs — chlorite-sericite schist

SCALE 1:24 000

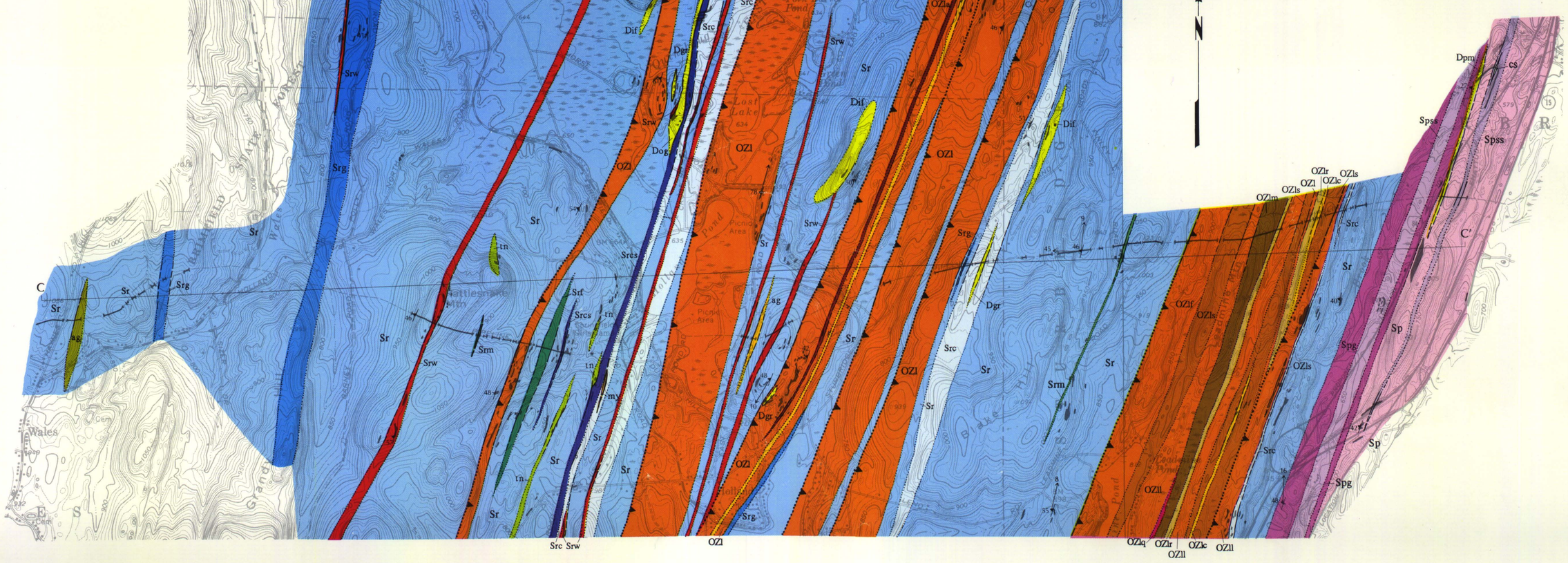
1 ½ 0 1 MILE

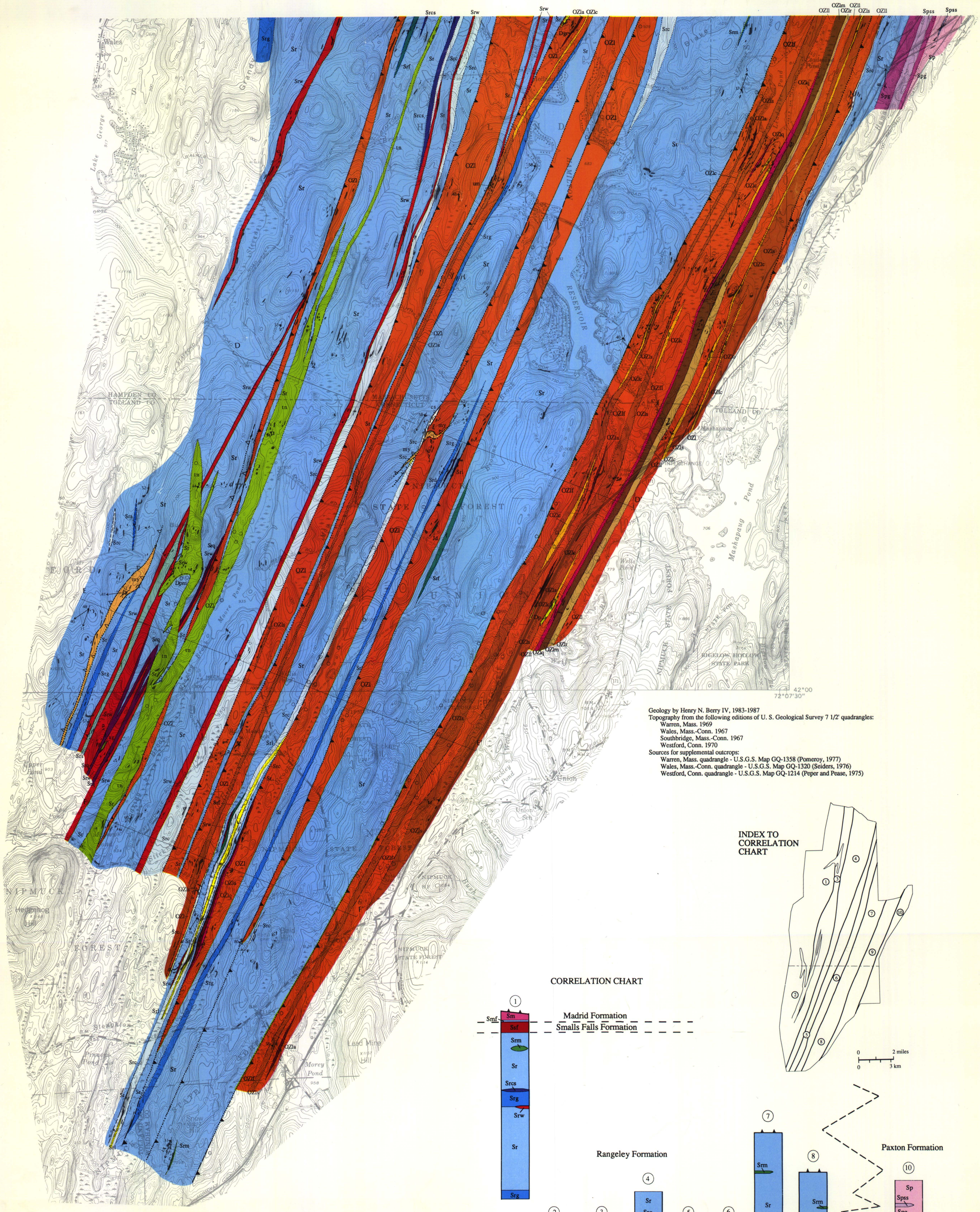
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETRE

CONTOUR INTERVAL 10 FEET

Color preparation by Roy Doyon, Harold Robinson and Peter Robinson





Geology by Henry N. Berry IV, 1983-1987
Topography from the following editions of U. S. Geological Survey 7 1/2' quadrangles:
Warren, Mass. 1969
Wales, Mass.-Conn. 1967
Southbridge, Mass.-Conn. 1967
Westford, Conn. 1970
Sources for supplemental outcrops:
Warren, Mass. quadrangle - U.S.G.S. Map GQ-1358 (Pomeroy, 1977)
Wales, Mass.-Conn. quadrangle - U.S.G.S. Map GQ-1320 (Seiders, 1976)
Westford, Conn. quadrangle - U.S.G.S. Map GQ-1214 (Peper and Pease, 1975)

INDEX TO CORRELATION CHART

CORRELATION CHART

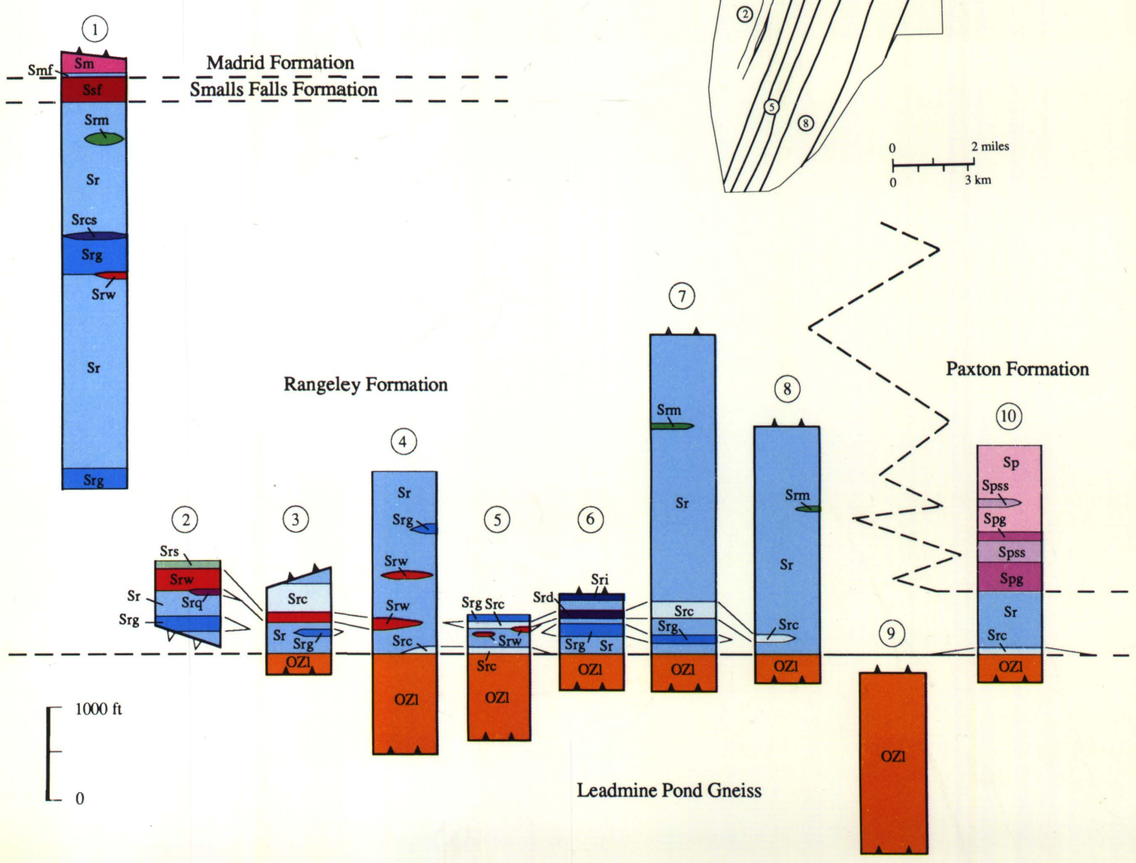


PLATE 1S. GEOLOGIC MAP, BRIMFIELD-STURBRIDGE AREA (SOUTH SHEET)