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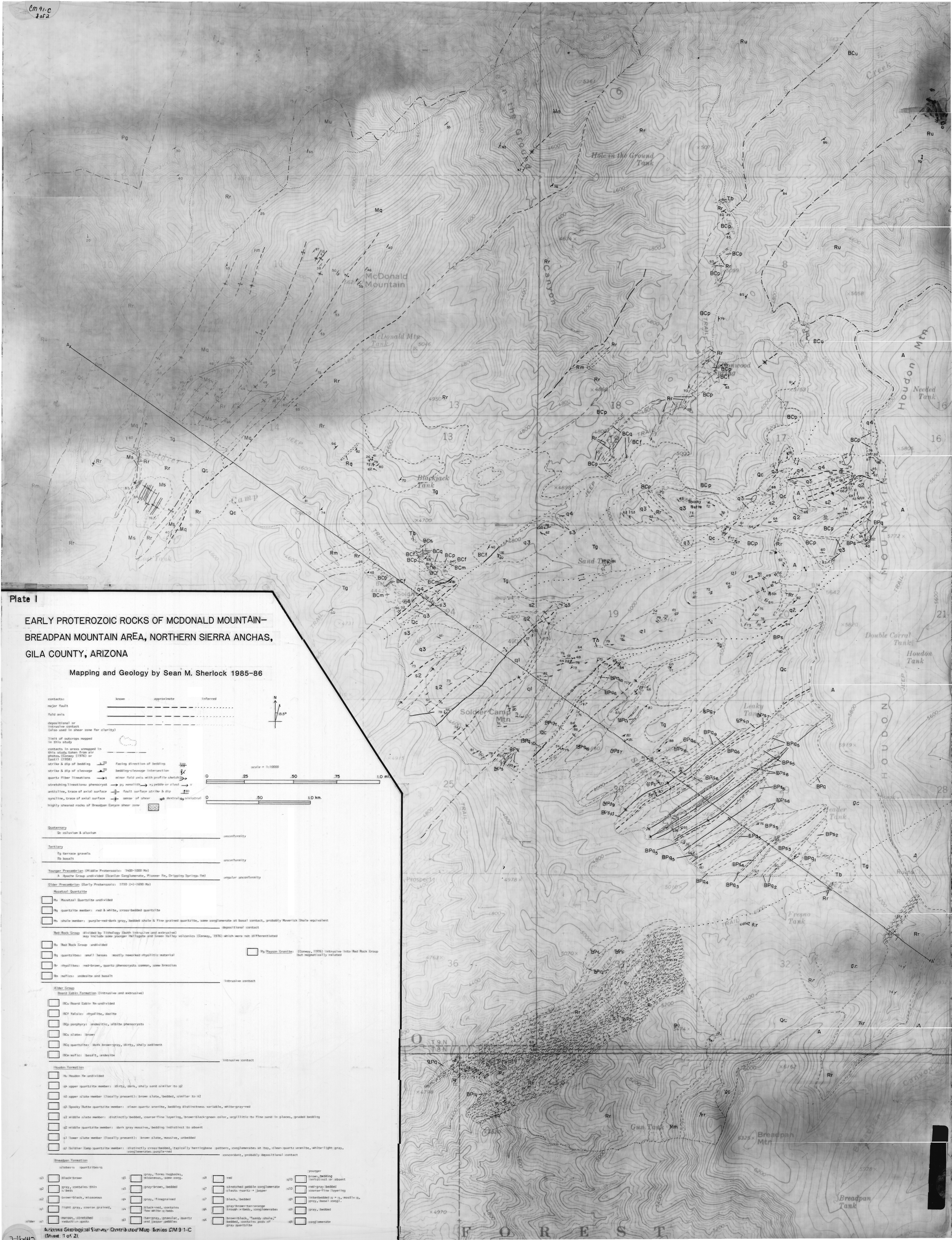

Plate I

EARLY PROTEROZOIC ROCKS OF MCDONALD MOUNTAIN–BREADPAN MOUNTAIN AREA, NORTHERN SIERRA ANCHAS, GILA COUNTY, ARIZONA

Mapping and Geology by Sean M. Sherlock 1985–86

contacts: known / approximate / inferred

major fault

fold axis

depositional or intrusive contact (also used in shear zone for clarity)

limit of outcrops mapped in this study

contacts in areas unmapped in this study, taken from air photos, (Conway (1976) or Gastil (1958)

strike & dip of bedding — facing direction of bedding

strike & dip of cleavage — bedding-cleavage intersection

quartz fiber lineations — minor fold axis with profile sketch

stretching lineations: phenocryst; xenolith; pebble or clast

anticline, trace of axial surface — fault surface strike & dip

syncline, trace of axial surface — sense of shear: dextral, sinistral

highly sheared rocks of Breadpan Canyon shear zone

N 13.5°

scale = 1:10000

0 .25 .50 .75 1.0 mi

0 .50 1.0 km.

Quaternary

Qc colluvium & alluvium

— unconformity —

Tertiary

Tg terrace gravels

Tb basalt

— unconformity —

Younger Precambrian (Middle Proterozoic: 1400-1000 Ma)

A Apache Group undivided (Scanlan Conglomerate, Pioneer fm, Dripping Springs fm)

— angular unconformity —

Older Precambrian (Early Proterozoic: 1710 (+)-1690 Ma)

Mazatzal Quartzite

Mu Mazatzal Quartzite undivided

Mq quartzite member: red & white, cross-bedded quartzite

Ms shale member: purple-red-dark gray, bedded shale & fine grained quartzite, some conglomerate at basal contact, probably Maverick Shale equivalent

— depositional contact —

Red Rock Group divided by lithology (both intrusive and extrusive) may include some younger Hellsgate and Green Valley volcanics (Conway, 1976) which were not differentiated

Ru Red Rock Group undivided

Rq quartzites: small lenses mostly reworked rhyolitic material

Rr rhyolites: red-brown, quartz phenocrysts common, some breccias

Rm mafics: andesite and basalt

Pg Payson Granite: (Conway, 1976) intrusive into Red Rock Group but magmatically related

— intrusive contact —

Alder Group

Board Cabin Formation (intrusive and extrusive)

BCu Board Cabin fm undivided

BCf felsic: rhyolite, dacite

BCp porphyry: andesitic, albite phenocrysts

BCs slate: brown

BCq quartzite: dark brown-gray, dirty, shaly sediment

BCm mafic: basalt, andesite

— intrusive contact —

Houdon Formation

Hu Houdon fm undivided

q4 upper quartzite member: dirty, dark, shaly sand similar to q2

s3 upper slate member (locally present): brown slate, bedded, similar to s2

q3 Spooky Butte quartzite member: clean quartz arenite, bedding distinctness variable, white-gray-red

s2 middle slate member: distinctly bedded, coarse-fine layering, brown-black-green color, argillitic to fine sand in places, graded bedding

q2 middle quartzite member: dark gray massive, bedding indistinct to absent

s1 lower slate member (locally present): brown slate, massive, unbedded

q1 Soldier Camp quartzite member: distinctly cross-bedded, typically herringbone pattern, conglomerates at top, clean quartz arenite, white-light gray, conglomerates purple-red

— concordant, probably depositional contact —

Breadpan Formation

slates: s quartzites: q

											younger
s3	black-brown	q5	gray, forms hogbacks, micaceous, some cong.	s8	red	q10	brown, bedding indistinct or absent				
q2	gray, contains thin s beds	s5	gray-brown, bedded	q7	stretched pebble conglomerate clasts quartz + jasper	s10	red-gray bedded coarse-fine layering				
s2	brown-black, micaceous	q4	gray, finegrained	s7	black, bedded	q9	interbedded q + s, mostly q, gray, basal congl.				
q1	light gray, coarse grained,	s4	black-red, contains few white q beds	q6	gray-brown-tan-orange trough x-beds, conglomerates	s9	gray, bedded				
	maroon, stretched reduction spots	q3	tan-gray, granular, quartz and jaspar pebbles	s6	brown-black, "sandy shale," bedded, contains pods of gray quartzite	q8	conglomerate				
older s1											

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