CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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Volume 1 of 3

TOMBSTONE

Mining District

Cochise County

ARIZONA

Maps to Interum Geologic Report (1973)

Attachment Portfolio

COPY 3

OCTOBER 1973

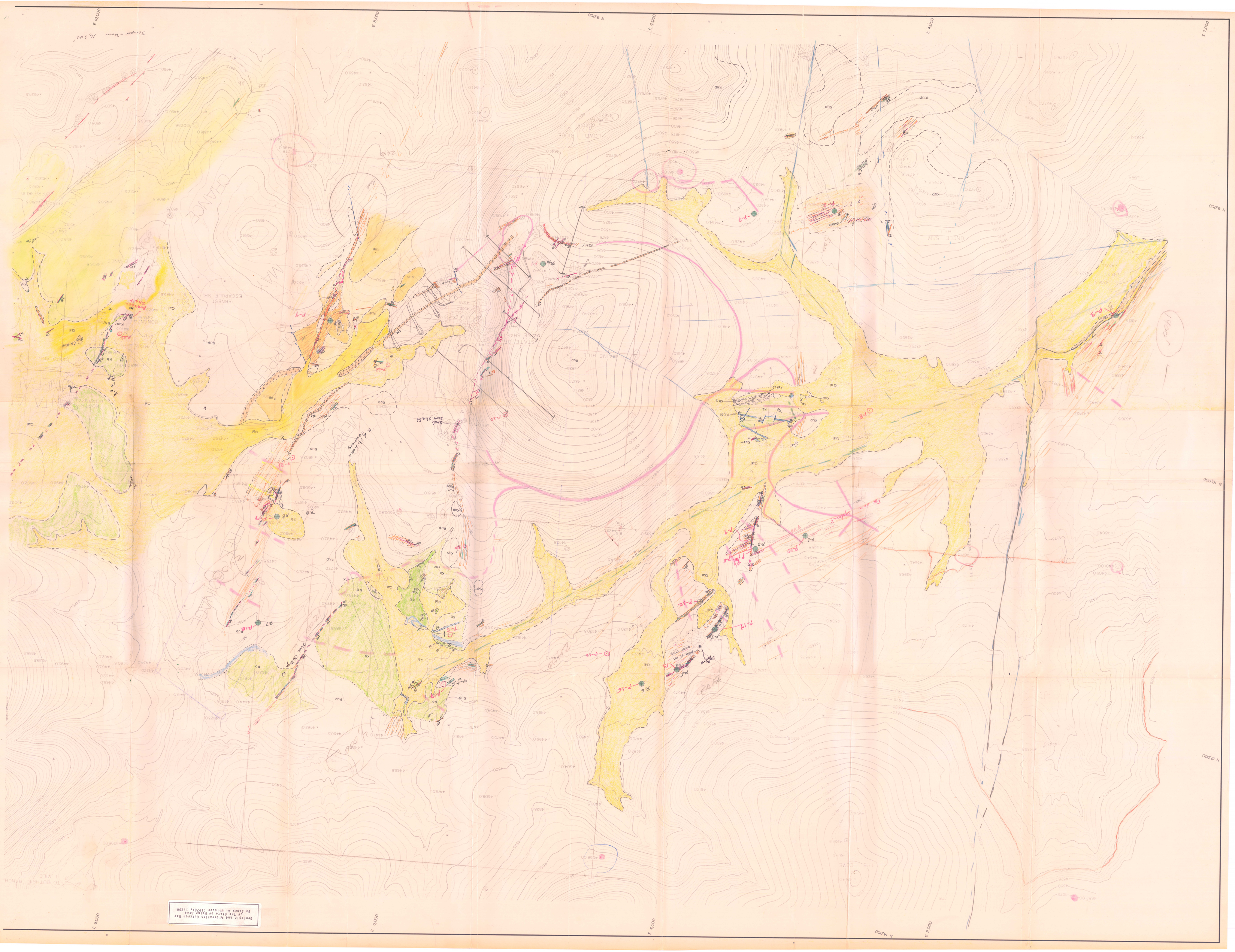
ATT. 1 & 2
GEOL. & SAMP.

ATT. 3 - 11
X SECTIONS

ATT. 12 - 14

ATT. 15-36, Bul.
143 X SECTIONS

N 14,000
E 2,000
E 4,000
E 6,000
E 8,000
N 12,000
N 10,000
N 8,000
THE DOME
TO GUTHRIE RANCH
THREE BROTHERS SHAFT
FOX RANCH
FOX WASH
MAINE HILL
STATE OF MAINE SHAFT
UNCLE SAM HILL
LOWELL RIDGE
ERNEST ESCAPULE SR.
BONANZA
SANTA ANA
NORTH BONANZA
FRANKLIN
STEEP CT.
Kb
Kup
Qal


Geologic and Alteration Outcrop Map
of The State of Maine Area
By James A. Briscoe (1973), 1:200
E 8,000
E 6,000
E 4,000
E 2,000
N 14,000
N 12,000
N 10,000
N 8,000
LOWELL RIDGE
MAINE HILL
STATE OF MAINE SHAFT
ERNEST ESCAPULE SR.
BONANZA
CHANCE
NEW YORK
Scraper Pour 16,200'

GEOLOGIC OUTCROP MAP OF THE STATE OF MAINE AREA

TOMBSTONE MINING DISTRICT
Cochise County, Arizona

ROCK TYPES

Qal — Quaternary alluvium and stream wash

Man-made mine dumps

In the Following Rock-Type Color Symbols, Heavy Coloration Indicates Outcrop and Light Color Indicates Float, i.e. boulders and fragments approximately in place and indicating bed rock type but not attached to bed rock. Veins, dikes and other small features cannot be reliably traced through this type of cover.

Rhyolite porphyry - Occurs as dikes and sills

Kgg — Schieffelin granodiorite - Intrusive mass lying to the north of the State of Maine area. Possible outcrops within the base map area have not been mapped.

Andesite porphyry - Occurs as dikes and possibly sills. Pre-mineral in age, though not always affected by hydrothermal alteration even in mineralized areas. Characteristically found in northeast trending dikes in the Tombstone Basin where it is associated with ore bodies. Very prolific in the Robbers Roost breccia pipe area.

Kud — Uncle Sam porphyry - Quartz latite occurs as a thick sill, possibly intruded along a pre-existing thrust fault, and comprising most of the bedrock to the south and west of Tombstone. Both dike-like and sill-like relations are seen in the State of Maine area, however sill-like relations appear to predominate, with Paleozoic and Mesozoic sediments thought to underlie the present surface at a probable depth of between 100 and 300 feet.

BISBEE GROUP SEDIMENTS

Kb — Shale, sandstone, quartzite and redbeds - Undifferentiated Morita and Cintura formations, approximately 3,500 feet thick.

KbbI — Limestone - Probably the "Ten Foot" and "Blue limestone", about 50 to 75 feet in total thickness.

Kn — Novaculite member of the Tombstone area Bisbee formation

Kbg — Glance conglomerate - Quartz pebble conglomerate, occurs only in the Fox Ranch area. Apparently absent in the remainder of the known Tombstone district.

PALEOZOIC SEDIMENTS

Pn — Naco limestone - Not identified on the surface in the State of Maine area, shown only on cross sections.

Other Paleozoic sediments undifferentiated.

SYMBOLS

Mine shaft, with and without dumps. - hachures show direction of inclination.

Prospect

Primary survey control point, first order survey

Claim monument or stake - Ground targeted and surveyed photogrammetrically to nearest 1/2 foot.

Fence line

Section corner (8, 9, 17, 16)

Roads - paved, improved dirt and bulldozer road or jeep trail.

Exact plot of dozer trench

Approximate location dozer trench

Cross section

Proposed rotary or diamond drill hole

Completed rotary, hammer or diamond drill holes (RDH-HDH-DDH)

Proposed air track drill hold

Vein or vein zone showing showing moderate to intense alteration and limonite. Predominate sericitic alteration and red to maroon limonite.

Vein or vein zone showing weak to moderate alteration and limonite. Predominate argillic alteration and orange and yellow limonite.

Manganese oxide mineralization

Silicification

Mineralized joint systems, color denotes alteration and mineralization as in vein systems.

Calc-silicate alteration in limey sediments

Anticline or syncline showing apparent direction of plunge

Fault mapped on the ground

Photo linears - Identified on black and white vertical air photos of the area. Probably represents fault or fracture zones.

scale

200 0 200 400

1" = 200'

Contour Interval is 5 feet

13°
N

Explanation of Geologic and Alteration Outcrop Map of The State of Maine Area
By James A. Briscoe (1973)

JAMES A. BRISCOE, CONSULTING GEOLOGIST

STATE: Ariz. COUNTY: cochise MINING DIST: Tombstone MTN. RANGE:	PROJECT - 105 TOMBSTONE MINING DISTRICT STATE OF MAINE AREA	DATE: Sept. 1973 GEOLOGY BY: J.A. Briscoe DRAFTED BY: J.A.B. SAMPLES ASSAYED BY: Hawley and Hawley

Cross-Section A-A' across USGS PP281, Plate 5, Geology Map of Central Cochise County, Arizona, 1:62,500

7 — 6 — 5 — 31 — 30 — 29 — 20 — 17 — 8 — 4 — T. 20 S. — T. 19 S. — 33

A

A'

ALTITUDE, IN FEET

5000
4000
3000
2000
1000
SEA LEVEL
-1000
-2000
-3000

LINDSEY RANCH

INTENSE CLAY-SERICITE ALTERATION AND LIMONITE AFTER DISSEMINATED SULFIDES

600± POSSIBLE Kb BOTTOM OF THIS HOLE

BRECCIA PIPE AREA

BISBEE CROPS OUT 2,000± BEFORE SECTION THIS AREA

BISBEE-UNCLE SAM CONTACT DIPS AWAY FROM HEADER TONALITE SAN PEDRO RIVER

CuOx

UNCLE SAM HILL

LOWELL CLAIM

FOX RANCH

AREA OF OUTCROPPING SILVER VEINS OF THE STATE OF MAINE SYSTEM

SCHIEFFELIN MONUMENT

SOUTHERN PACIFIC

U.S. 80

TKog

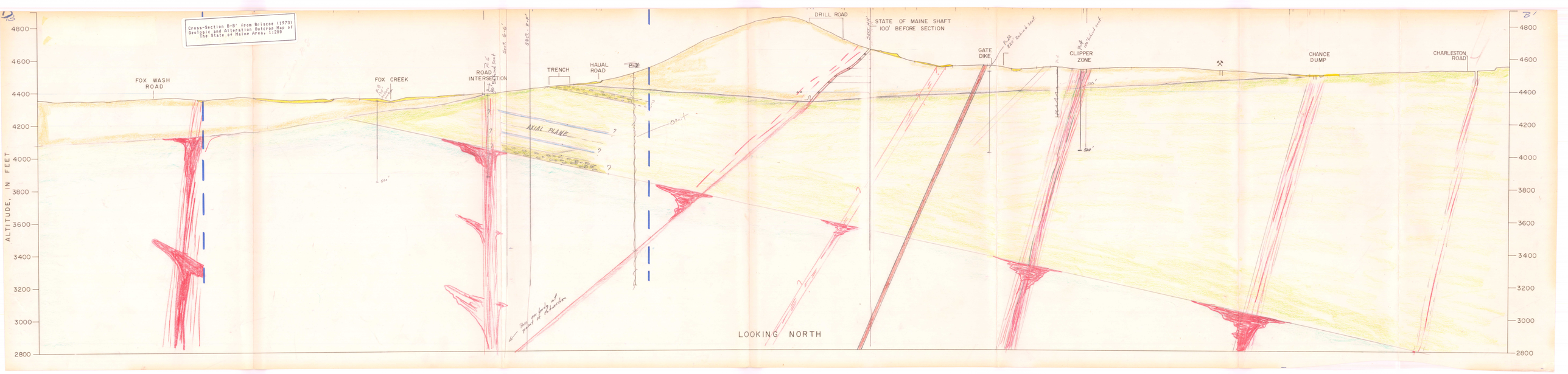
Kb

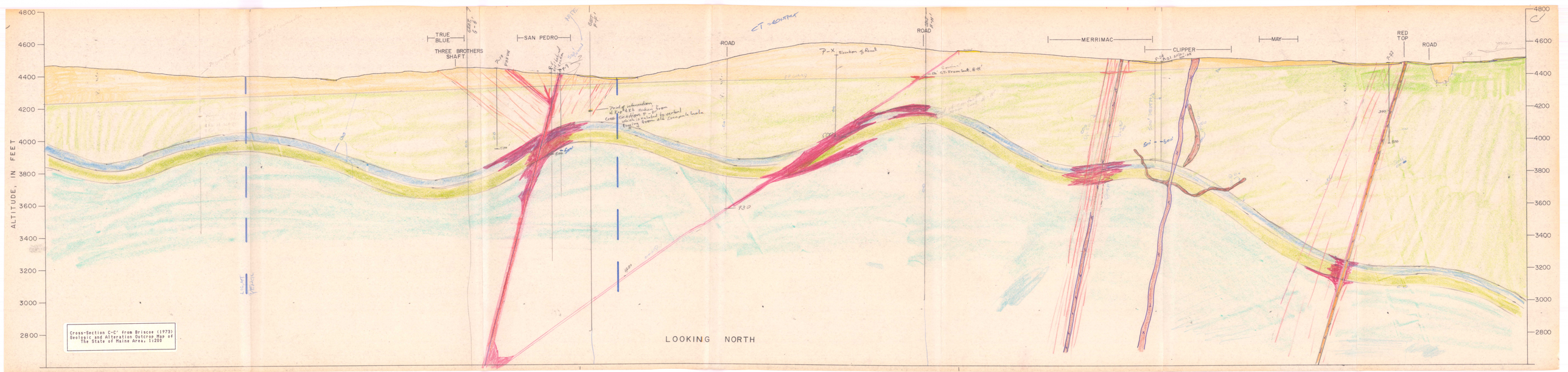
Pn

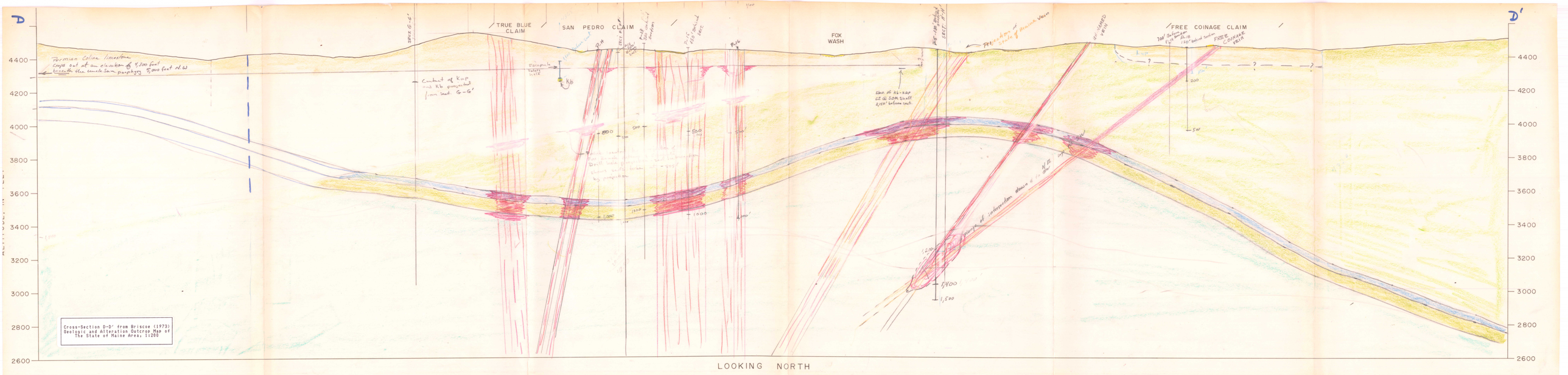
Ksg

Qal

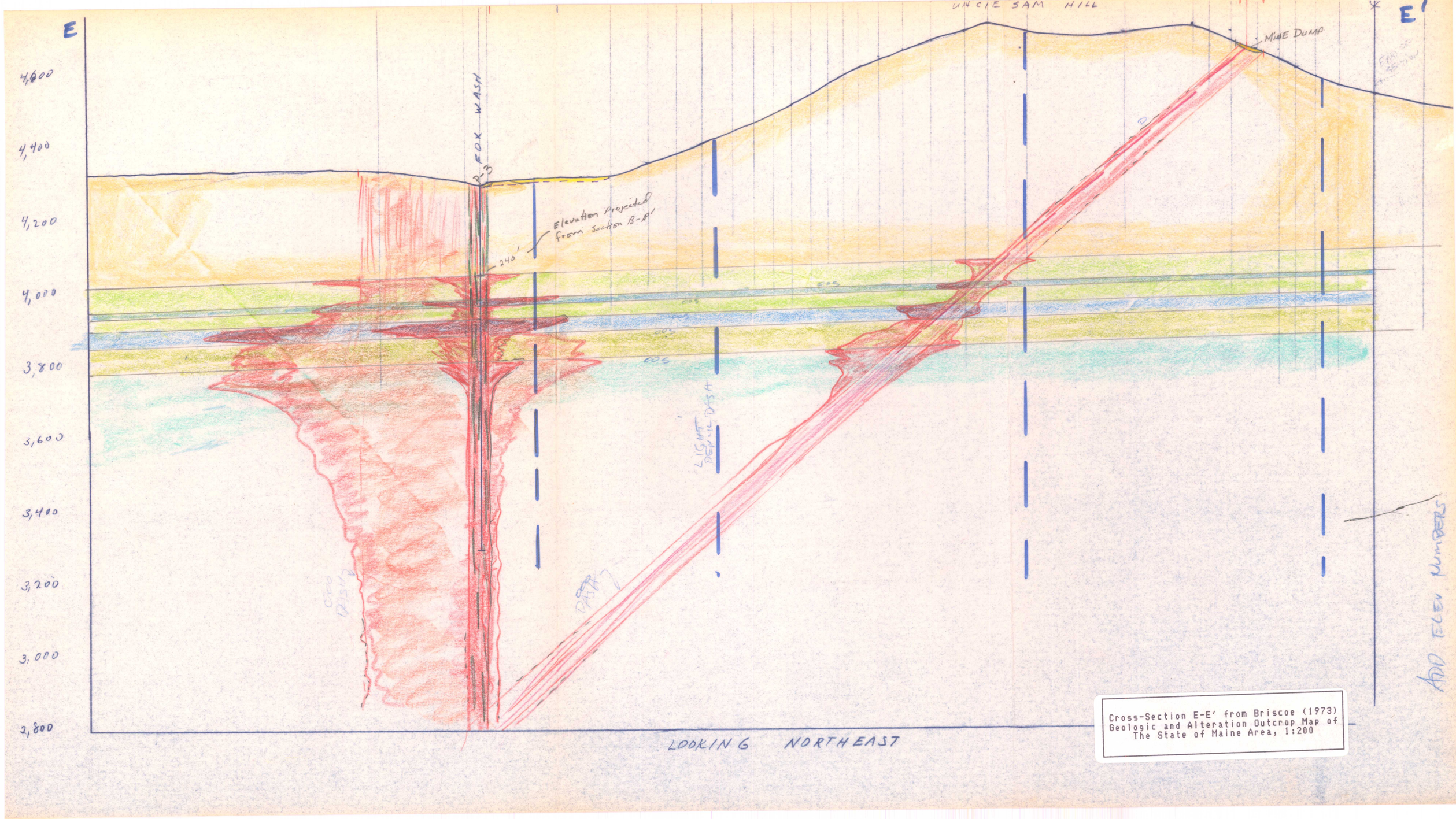
Grb

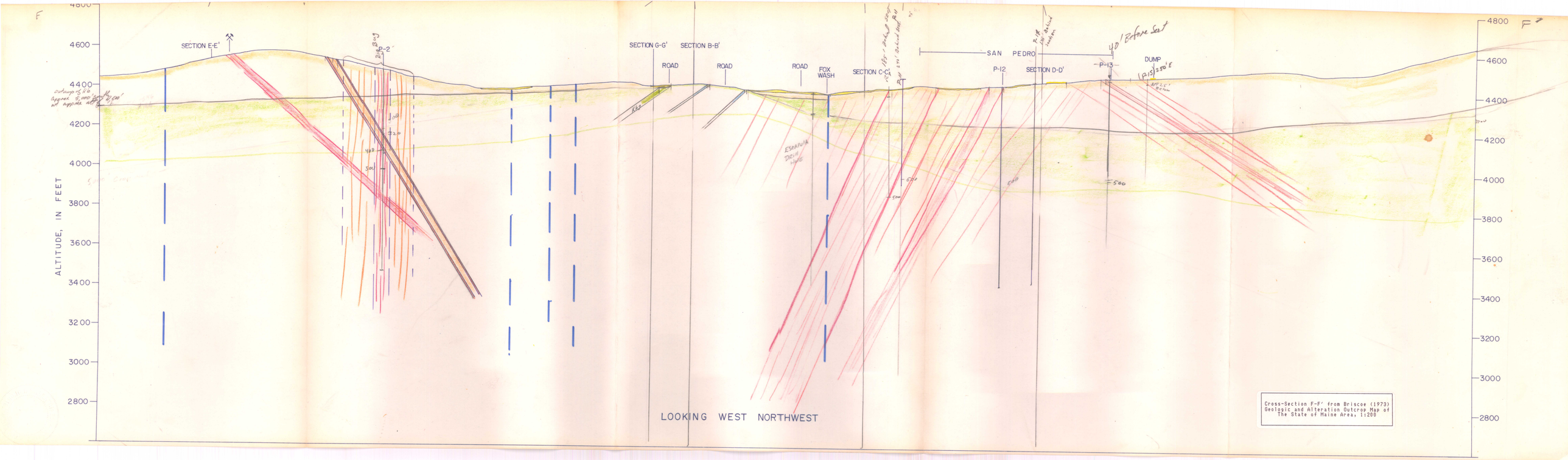

B
Cross-Section B-B' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area: 1:200
FOX WASH ROAD
FOX CREEK
ROAD INTERSECTION
TRENCH
HAUAL ROAD
DRILL ROAD
STATE OF MAINE SHAFT 100' BEFORE SECTION
GATE DIKE
CLIPPER ZONE
CHANCE DUMP
CHARLESTON ROAD
AXIAL PLANE
LOOKING NORTH
ALTITUDE, IN FEET
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
B'


ALTITUDE, IN FEET
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
TRUE BLUE
THREE BROTHERS SHAFT
SAN PEDRO
ROAD
ROAD
MERRIMAC
CLIPPER
MAY
RED TOP
ROAD
LOOKING NORTH
Cross-Section C-C' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200

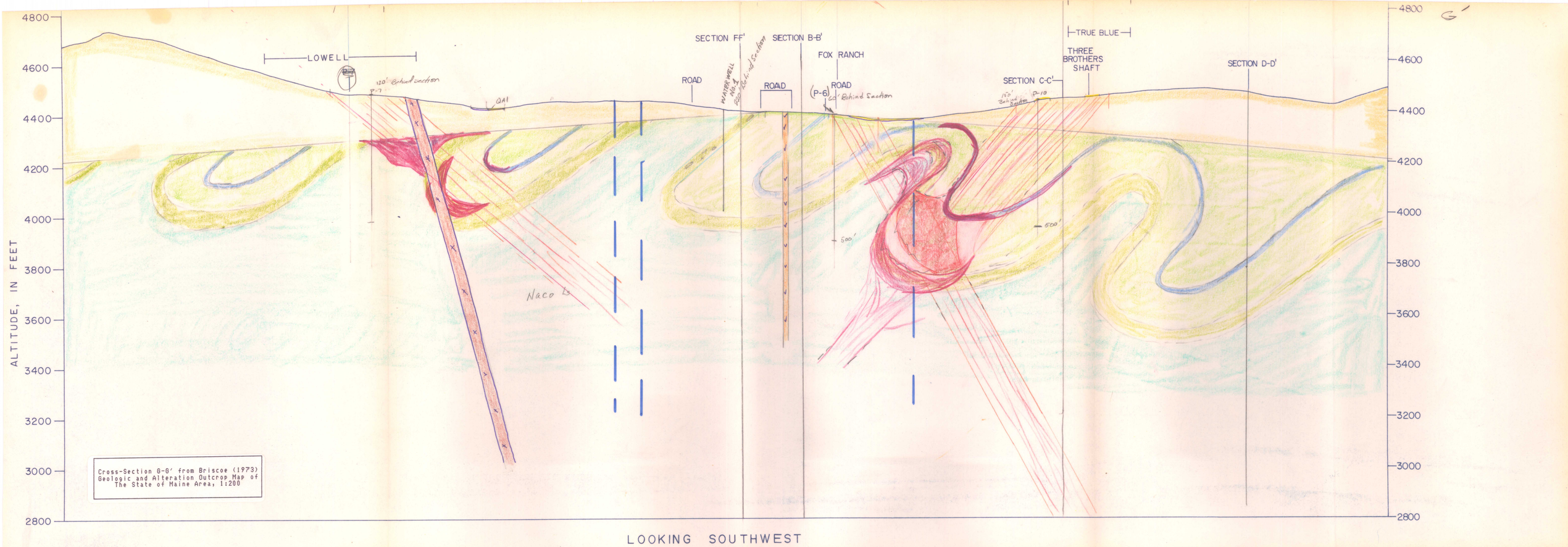


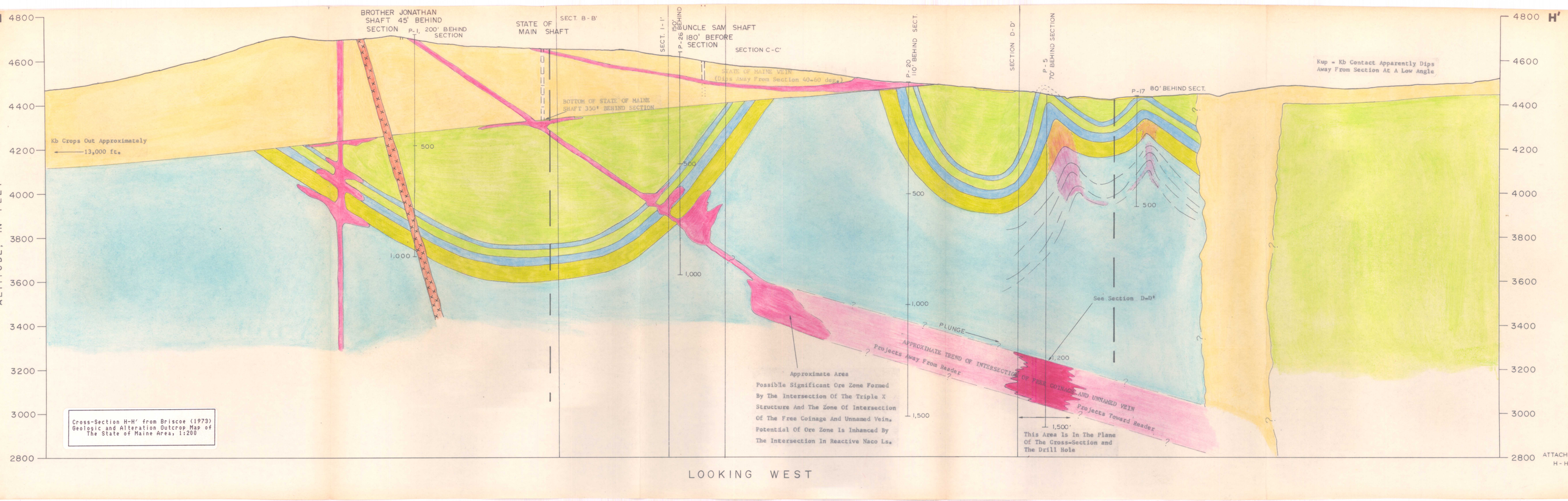
Cross-Section D-D' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200

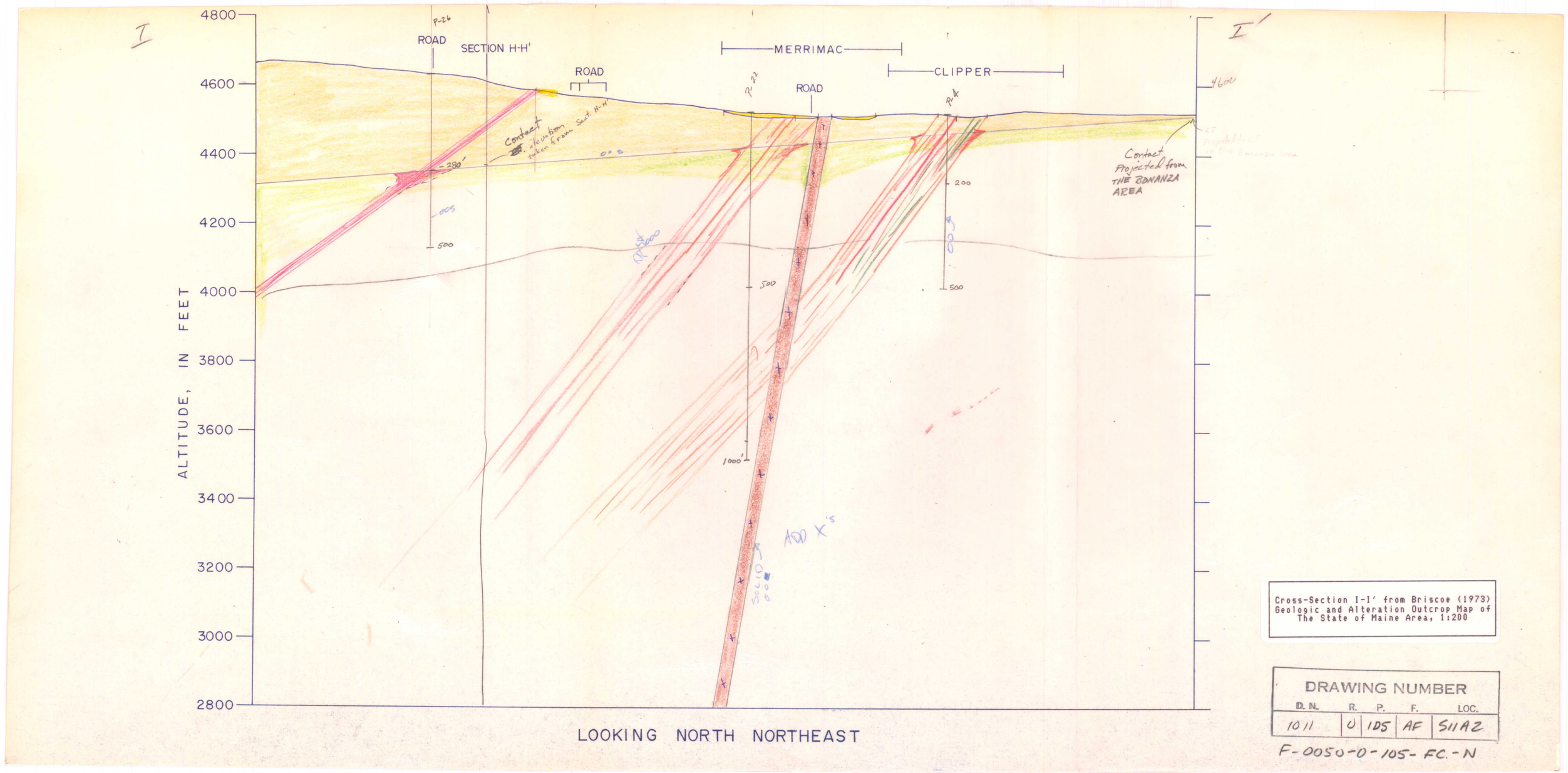

E
E'
UNCLE SAM HILL
MINE DUMP
FOX WASH
B-3
Elevation Projected from Section B-B'
240'
4,600
4,400
4,200
4,000
3,800
3,600
3,400
3,200
3,000
2,800
LIGHT DEPTH DATA
LOOKING NORTHEAST
ADD ELEV. NUMBERS
Cross-Section E-E' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200



Cross-Section F-F' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200


4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
ALTITUDE, IN FEET
LOWELL
120' Behind section
P-7
QAl
SECTION FF'
SECTION B-B'
ROAD
WATER WELL No. 1
220' Behind Section
ROAD
FOX RANCH
ROAD
(P-6)
60' Behind Section
500'
Naco L
TRUE BLUE
THREE BROTHERS SHAFT
SECTION C-C'
150' Behind Section
P-10
500'
SECTION D-D'
G'
Cross-Section G-G' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200
LOOKING SOUTHWEST


H
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
ALTITUDE, IN FEET
BROTHER JONATHAN SHAFT 45' BEHIND SECTION
P-1, 200' BEHIND SECTION
STATE OF MAIN SHAFT
SECT. B-B'
SECT. 1-1'
P-26 150' BEHIND
UNCLE SAM SHAFT 180' BEFORE SECTION
SECTION C-C'
P-20 110' BEHIND SECT.
SECTION D-D'
P-5 70' BEHIND SECTION
P-17 80' BEHIND SECT.
STATE OF MAINE VEIN (Dips Away From Section 40-60 deg.)
BOTTOM OF STATE OF MAINE SHAFT 350' BEHIND SECTION
Kup = Kb Contact Apparently Dips Away From Section At A Low Angle
Kb Crops Out Approximately 13,000 ft.
500
1,000
1,500
1,200'
PLUNGE
APPROXIMATE TREND OF INTERSECTION OF FREE COINAGE AND UNNAMED VEIN
Projects Away From Reader
Projects Toward Reader
See Section D-D'
Approximate Area Possible Significant Ore Zone Formed By The Intersection Of The Triple X Structure And The Zone Of Intersection Of The Free Coinage And Unnamed Vein. Potential Of Ore Zone Is Inhanced By The Intersection In Reactive Naco Ls.
This Area Is In The Plane Of The Cross-Section and The Drill Hole
Cross-Section H-H' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200
LOOKING WEST
H'
ATTACH H-H



Cross-Section I-I' from Briscoe (1973) Geologic and Alteration Outcrop Map of The State of Maine Area, 1:200

DRAWING NUMBER				
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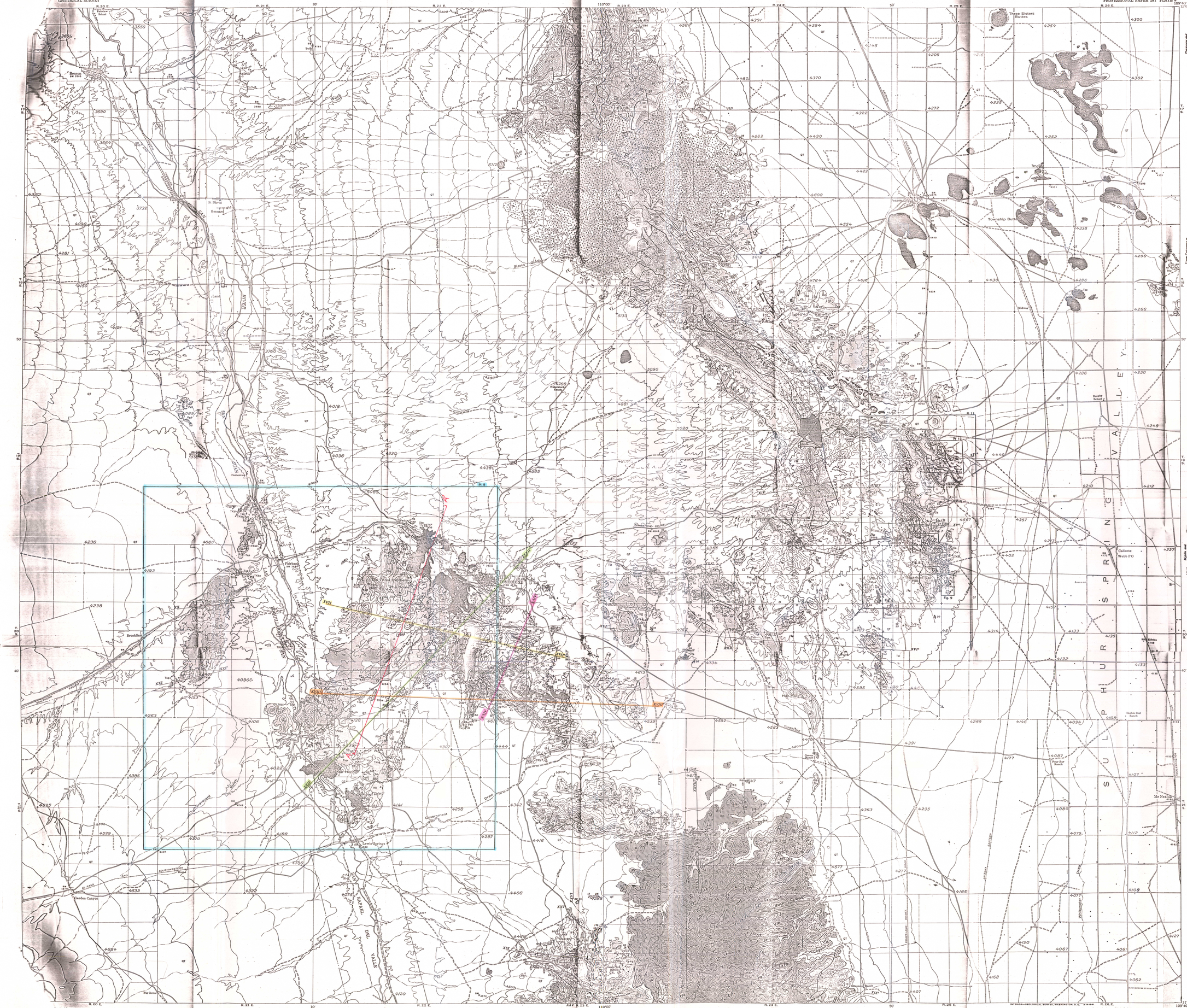


EXPLANATION

QT — Alluvium and Gila conglomerate

Qb — Basalt; intrusive and extrusive

UNCONFORMITY

Tu — S O volcanics
Tu, intrusive andesite; Tuu, upper tuffaceous member; Tum, middle andesite member; Tul, lower tuffaceous member

Tpv — Pearce volcanics
Tpv, rhyolite member; Tpa, andesite member

Intrusive rhyolite

Tv — Prevolcanic sedimentary rocks

Schiefflin granodiorite

Stronghold granite and related dikes

Tap — Andesite porphyry

Tup — Uncle Sam porphyry
Tub, intrusive breccia

UNCONFORMITY (OVERTHRUSTS)

Fault breccia

Bronco volcanics
TKbl, quartz latite member; TKba, andesitic member

Sugarloaf quartz latite
TKsa, andesitic member; TKsl, quartz latite member

TKg — Granite and gneiss near Jordan and Fourth Canyons

TKa — Granite in Ash Creek Ridge

UNCONFORMITY

Kc — Cintura formation

Km — Mural limestone
Klm, reef limestone member

Kb — Bisbee formation

Km — Morita formation

Kg — Glance conglomerate

Cretaceous(?) volcanic rocks
Ka, andesite; Kl, quartz latite

UNCONFORMITY

Jpf — Juniper Flat granite

Jgn — Gleason quartz monzonite
Jfa, associated alaskite

Jcp — Copper Belle monzonite porphyry

Jcp — Cochise Peak quartz monzonite

Pmm — monzonite granite

Ped — Epitaph dolomite

Pc — Colina limestone

PCe — Earp formation

Pm — Paleozoic rocks, undifferentiated

Ch — Horquilla limestone

DISCONFORMITY

Ce — Escabrosa limestone

DISCONFORMITY

Mt — Martin limestone

DISCONFORMITY

Ab — Abrigo limestone

Bq — Bolsa quartzite

UNCONFORMITY

pCa — Alkite granite

pCd — Quartz diorite

pCg — Gneissic granite

pCs — Sacaton granite

pCm — monzonite

pCp — Pinal schist

Contact
Dashed where approximately located

Fault
Dashed where approximately located. U, upthrown side; D, downthrown side

Thrust fault
T, upper plate

Concealed fault

Strike and dip of beds

Strike and dip of overturned beds

Strike of vertical beds

Horizontal beds

Strike and dip of foliation

Strike of vertical foliation

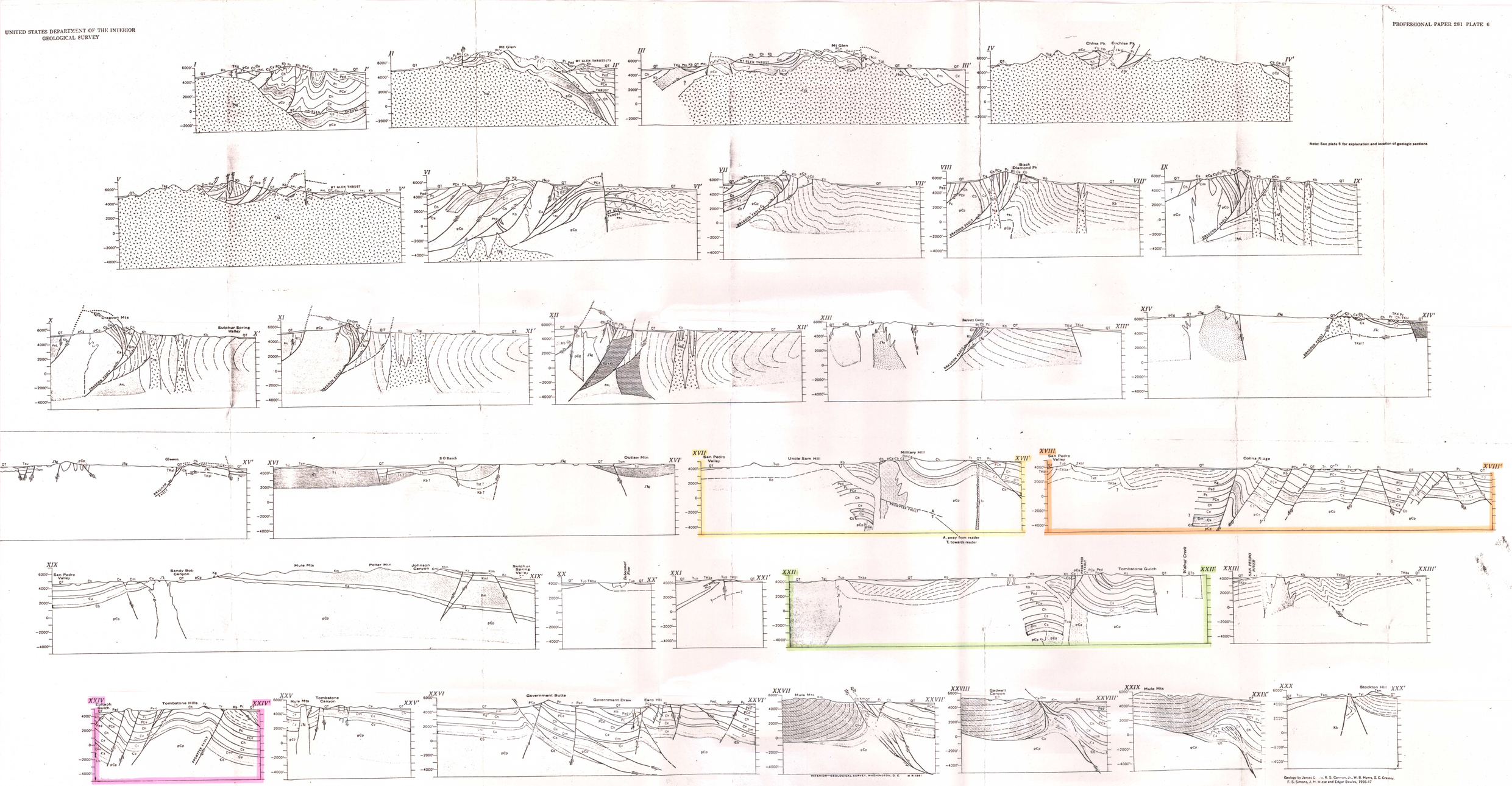
Plunge of lineation

TRUE NORTH
MAGNETIC NORTH
13°
APPROXIMATE MEAN DECLINATION 1913

Geologic Map of Parts of the Benson and Pearce Quadrangles, Arizona
USGS PP281, Gulluly (1956), 1:62,500

Geology by James Gilluly, R. S. Cannon, Jr., W. S. Myers, S. C. Creasey, F. S. Simons, J. H. Wiese and Edgar Bowles, 1936-47

GEOLOGIC MAP OF PARTS OF THE BENSON AND PEARCE QUADRANGLES, ARIZONA



Note: See plate 5 for explanation and location of geologic sections

Geology by James G[illegible], R. S. Cannon, Jr., W. B. Myers, S. C. Creasey, F. S. Simons, J. H. Wiese and Edgar Bowles, 1936-47

GEOLOGIC SECTIONS IN PARTS OF THE BENSON AND PEARCE QUADRANGLES, ARIZONA

Scale 1:62,500

1 0 5 Miles

Geologic Sections in Parts of Benson and Pearce Quadrangles, Arizona
USGS PP281, Plate 6, (1956), 1:62,500

DRAWING NUMBER				
D. N.	R.	P.	F.	LOC.
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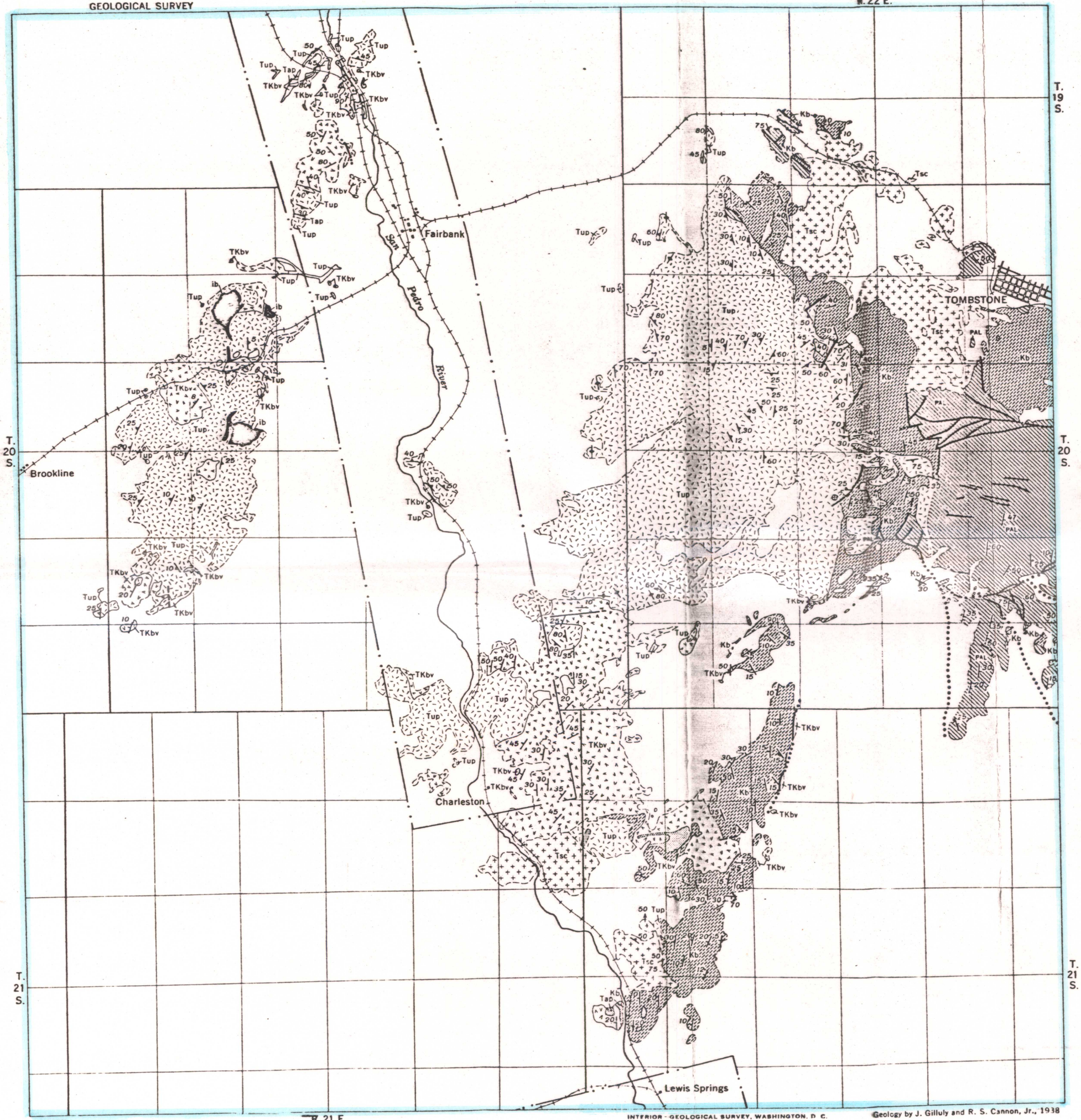
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PROFESSIONAL PAPER 281 PLATE 9



EXPLANATION

QT	Alluvium	TERTIARY AND QUATERNARY
Tsc	Schieffelin granodiorite	TERTIARY
Tap	Andesite porphyry	
Tup ib	Uncle Sam porphyry ib, intrusive breccia	
TKbv	Bronco volcanics	CRETACEOUS OR TERTIARY
Kb	Bisbee formation	CRETACEOUS
PAL	Paleozoic and pre-Paleozoic rocks undifferentiated	PRE-PALEOZOIC AND PALEOZOIC

Contact
Dashed where approximately located

Fault
Dashed where approximately located

Concealed fault

50 Strike and dip of beds

90 Strike of vertical beds

Horizontal beds

30 Strike and dip of foliation or flow banding

Strike of vertical foliation or flow banding

60 80 Strike and dip of foliation and plunge of lineation

50 Bearing and plunge of lineation

M R-1561

INTERIOR - GEOLOGICAL SURVEY, WASHINGTON, D. C.

Geology by J. Gilluly and R. S. Cannon, Jr., 1938

GEOLOGIC MAP SHOWING STRUCTURAL RELATIONS OF THE UNCLE SAM PORPHYRY, COCHISE COUNTY, ARIZONA

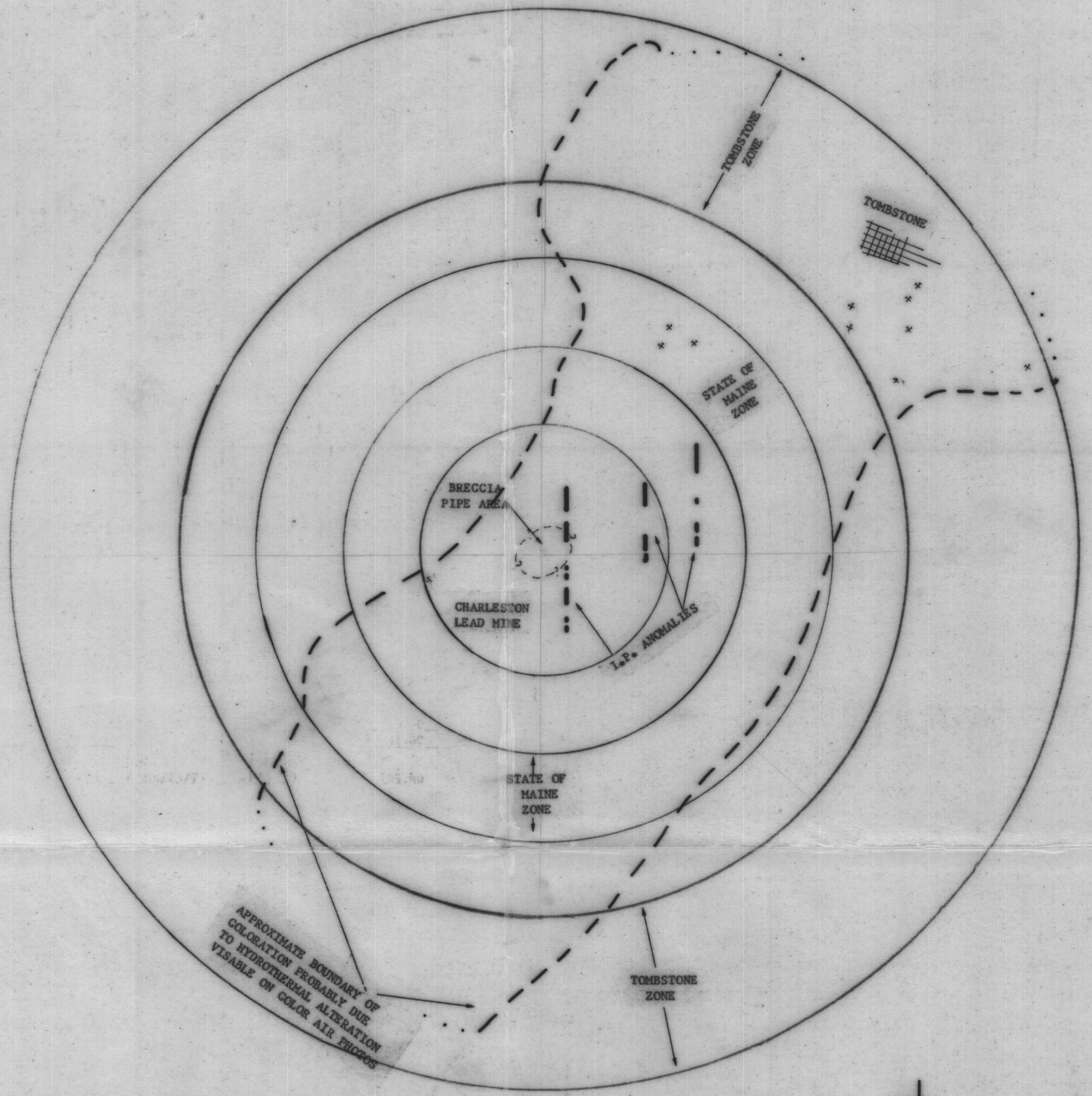
1 0 2 Miles

DRAWING NUMBER

D. N.	R. P.	F.	LOC.
0004	00	F.C.	G

Geologic Map Showing Structural Relations of the Uncle Sam Porphry USGS PP281, Plate 9, (1956), 1:62,500

Overlay for Gilluly Geologic Map,
showing hypothetical alteration zones,
By James A. Briscoe (1973), 1:62,500



ATTACHMENT 14-A

Overlay for Gilluly Geologic Map, showing hypothetical alteration zoning pattern, Tombstone Mining District