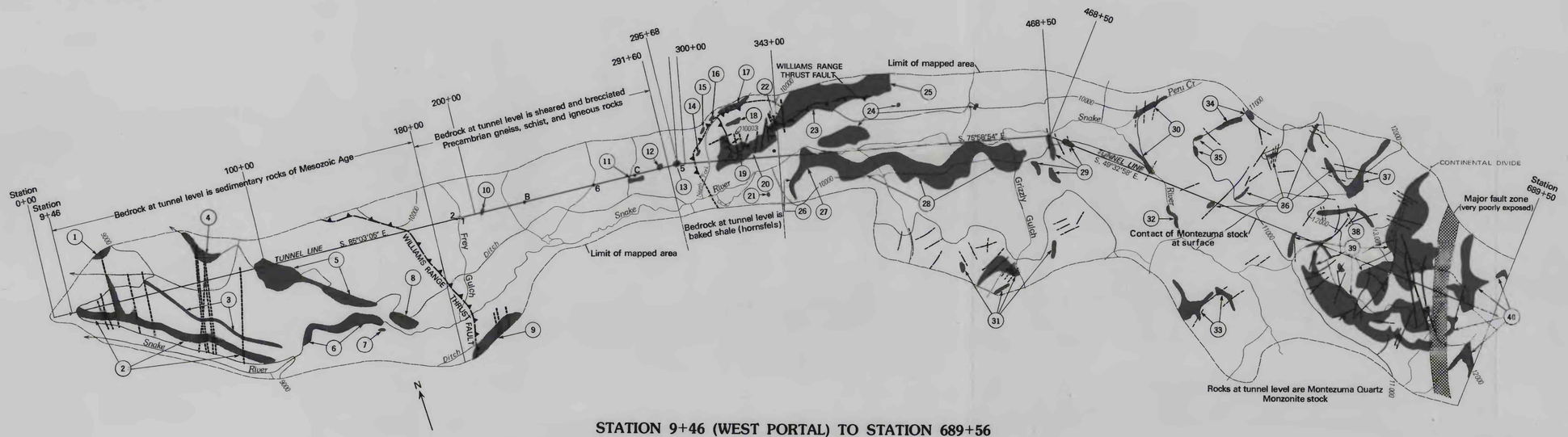
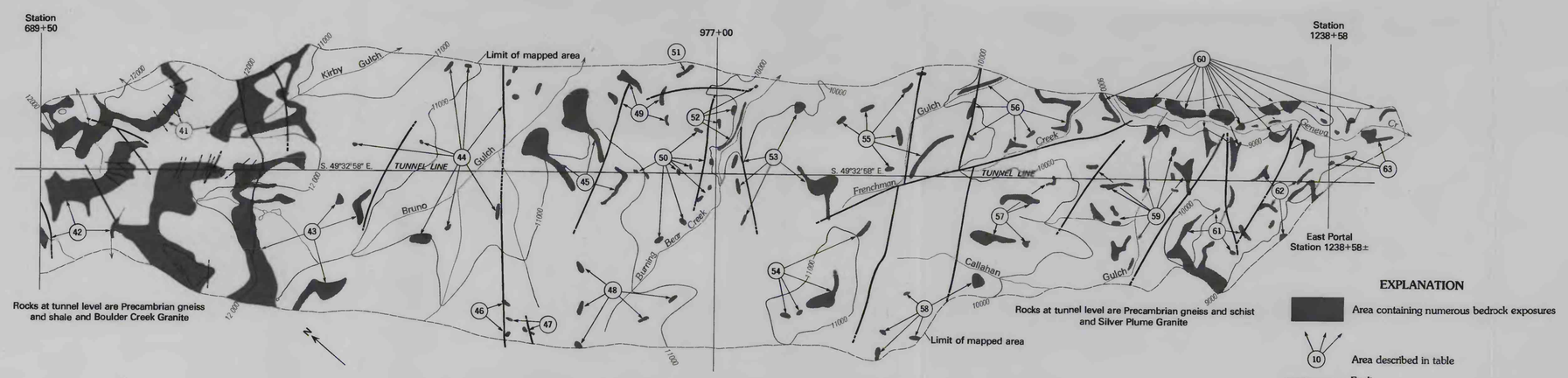


STATION 9+46 (WEST PORTAL) TO STATION 689+56



STATION 689+50 TO ABOUT 1276+00 (EAST OF EAST PORTAL)

0 5000 10000 FEET
CONTOUR INTERVAL 1000 FEET

EXPLANATION

- Area containing numerous bedrock exposures
- (10) Area described in table
- Fault
- Thrust fault—sawteeth on upper plate
- Vein
- Drill hole

LOCALITIES OF EXPOSURES

Area No.	Type of exposure	Estimated percent exposed
1	Low hogback, Fort Hays Limestone Member of Niobrara Formation	20
2	Hogback exposure, Dakota Group	70
3	Low hogback, Fort Hays Limestone Member of Niobrara Formation.	20
4	Pierre Shale	50
5	Shale and sandstone in Pierre Shale	60
6	Cutbank in Pierre Shale	90
7	Roadcut in Pierre Shale	50
8	Cutbank in shale and sandstone of Pierre Shale	70
9	Steep slope and ditch exposure of gneiss and shale	60
10	Hillside exposure of gneiss	40
11	Glacially scoured knob of gneiss	50
12	----- do	60
13	----- do	60
14	Roadcut in baked shale	70
15	Roadcut in gneiss	50
16	----- do	60
17	Baked shale in fenster in Williams Range thrust fault	30
18	Hillside exposure of gneiss	60
19	Cliff exposure of gneiss	60
20	Hillside exposure of baked shale	50
21	Hillside exposure of baked shale	50
22	Ridge exposure of gneiss	60
23	Cliff exposure, baked shale	30
24	Cliff exposure, Montezuma stock	20
25	Ridge exposure, biotite gneiss	60
26	Hillside exposure, baked shale	60
27	Knob exposure, Montezuma stock	75
28	Valley wall exposure, Montezuma stock	20
29	Valley wall exposures, Montezuma stock	60
30	Stream-cut exposures, Montezuma stock	60
31	Cliff exposures, Swandyke Hornblende Gneiss and Montezuma stock.	50
32	Stream-cut exposure, Montezuma stock	60
33	Cliff exposures, Swandyke Hornblende Gneiss and Montezuma stock.	30
34	Cliff exposures, Montezuma stock	50
35	Cliff exposures, aplite in Montezuma stock	40
36	Ridge exposures, Montezuma stock	30
37	Cirque exposures, sillimanitic biotite gneiss and schist	50
38	Ridge exposure, sillimanitic biotite gneiss and schist	30
39	Cliff exposures, sillimanitic biotite gneiss and schist and Silver Plume Granite.	40
40	Cliff and ridge exposures, biotite gneiss and schist and Silver Plume Granite.	40
41	Cliff exposures, biotite gneiss and schist and Silver Plume Granite	40
42	Cliff exposures, biotite gneiss and schist and Silver Plume Granite	40
43	Cliff exposures, biotite gneiss and schist	40
44	Ridge exposures, biotite gneiss and schist	25
45	Cliff and ridge exposures, Boulder Creek Granite	40
46	Ridge exposures, biotite gneiss and Silver Plume Granite	30
47	Ridge exposure, diorite dike	50
48	Ridge exposures, biotite gneiss	25
49	Ridge exposures, Boulder Creek Granite	25
50	Knob exposures, Boulder Creek Granite	25
51	Ridge exposure, quartz monzonite gneiss	25
52	Quartz monzonite gneiss and dikes of Boulder Creek Granite	25
53	Quartz monzonite gneiss	25
54	Quartz monzonite gneiss and dikes of Silver Plume Granite	25
55	Quartz monzonite gneiss and biotite gneiss and migmatite	25
56	Biotite gneiss and migmatite, calc-silicate gneiss, and Silver Plume Granite.	25
57	Calc-silicate gneiss, Silver Plume Granite, and biotite gneiss and migmatite.	25
58	Biotite gneiss and migmatite and calc-silicate gneiss	25
59	Calc-silicate gneiss and Silver Plume Granite	25
60	Cliff exposures, biotite gneiss and migmatite, calc-silicate gneiss, and Silver Plume Granite.	35
61	Silver Plume Granite and calc-silicate gneiss	25
62	Calc-silicate gneiss, Silver Plume Granite, and biotite gneiss and migmatite.	25
63	Silver Plume Granite and biotite gneiss and migmatite	25

MAP SHOWING AREAS OF NUMEROUS BEDROCK EXPOSURES AT SURFACE OVER HAROLD D. ROBERTS TUNNEL AREA, COLORADO

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