UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAPS

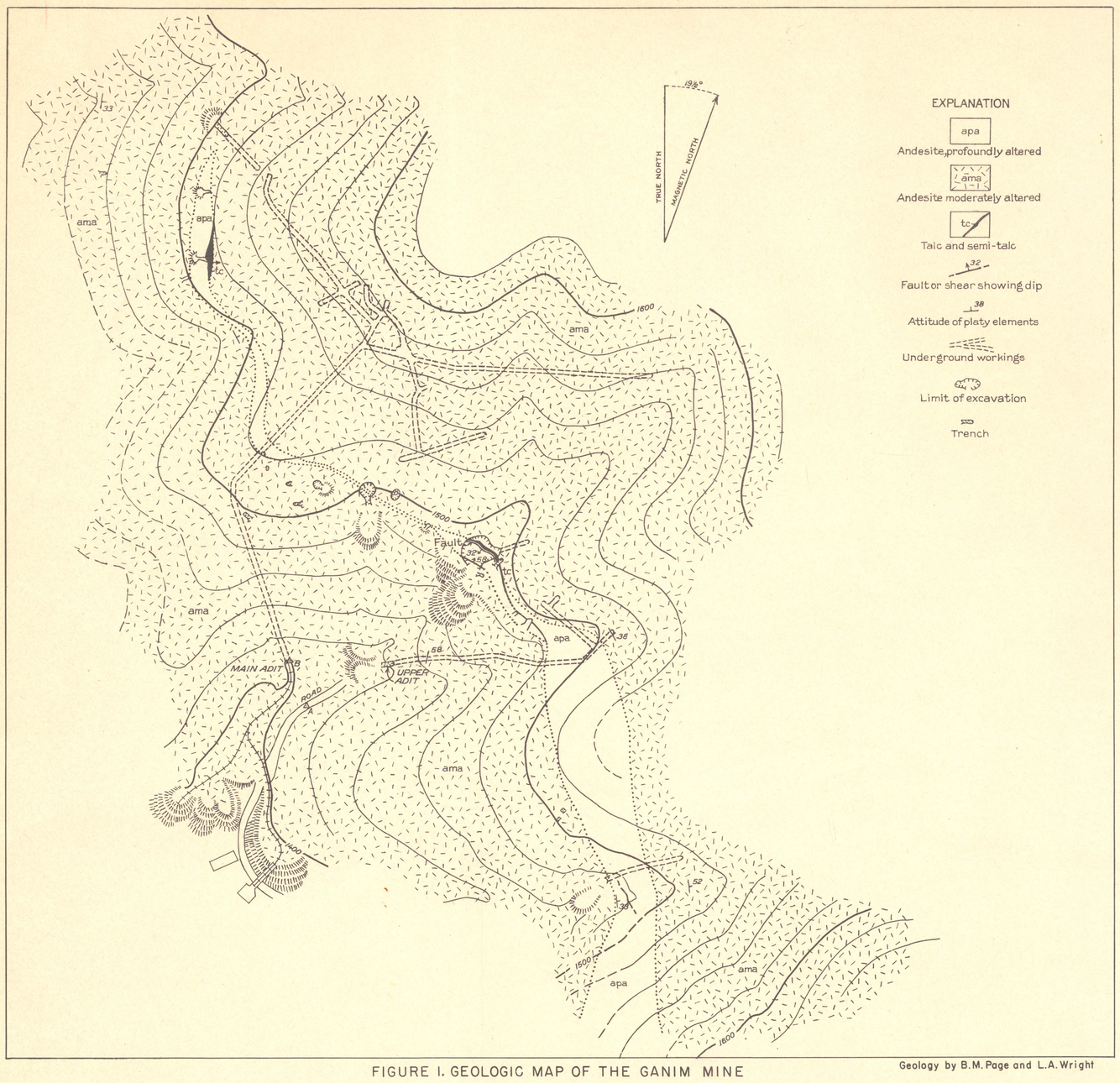
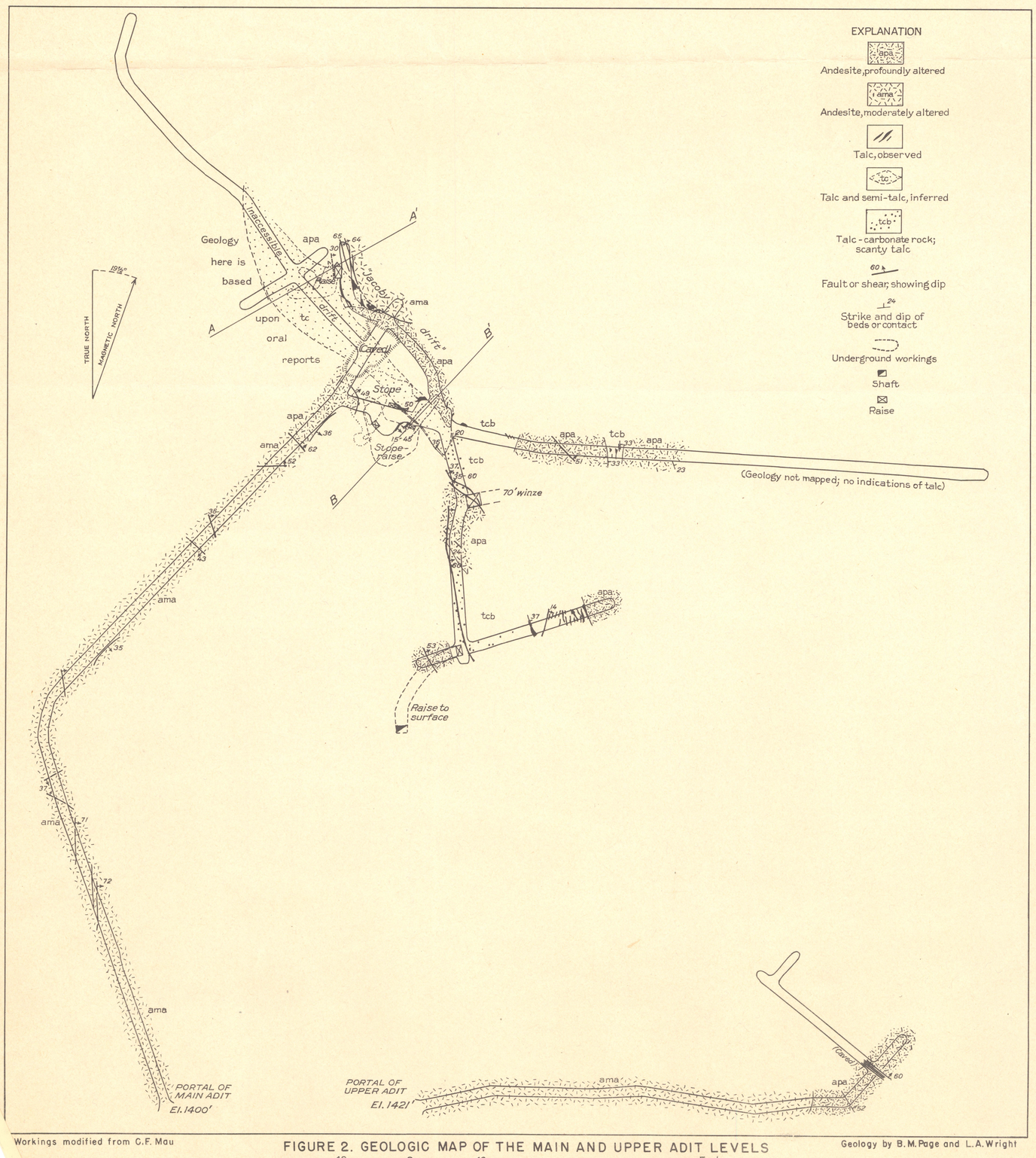


FIGURE 1. GEOLOGIC MAP OF THE GANIM MINE

Geology by B.M. Page and L.A. Wright

100 0 100 400 Feet

Contour interval 20 feet
Elevation at △B assumed to be 1400 feet



Workings modified from C.F. Mau

FIGURE 2. GEOLOGIC MAP OF THE MAIN AND UPPER ADIT LEVELS

Geology by B.M. Page and L.A. Wright

40 0 40 160 Feet

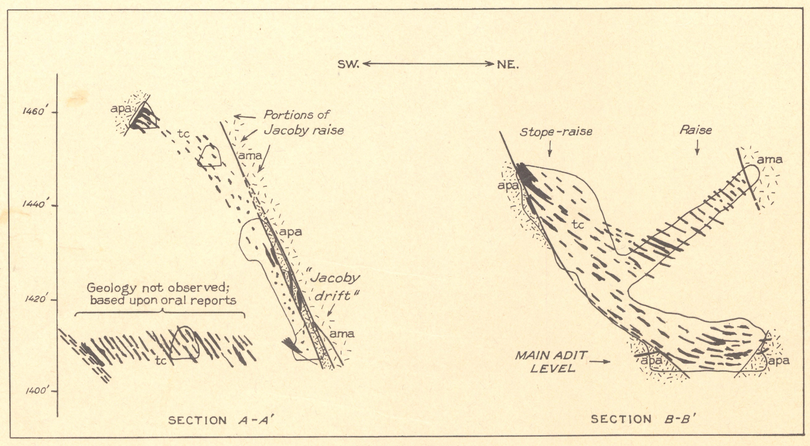


FIGURE 3. SECTIONS ALONG LINES A-A' AND B-B' ON FIGURE 2

20 0 20 40 Feet

TALC IN THE GANIM MINE
SHASTA COUNTY, CALIFORNIA

Talc, partly of such quality that it can be used as steatite for radioelectric purposes, occurs in the Ganim mine, which has been worked primarily for gold and silver, 13 miles west of Redding, Shasta County, Calif. The talc crops out on moderately steep slopes, and the underground workings are reached by adits, from one of which there is a raise to the surface. Ben M. Page and Lauren A. Wright, of the Geological Survey, United States Department of the Interior, examined the mine in July 1942, at which time it was idle and not wholly accessible. Two grades of talc, intimately interlayered, are found in the mine; one is nearly pure talc, while the other is a mixture of talc and carbonate, not usable as steatite. The high-grade talc occurs mainly in two lenses, one of which is estimated, from fairly strong geologic evidence, to contain 21,000 tons of talc ore and the other 2,000 tons. Together they might possibly yield 8,000 tons or more of talc that is of steatite grade. About 1,400 tons of talc of all grades has been shipped.

As shown on the map, the talc lenses extend along a wide zone of intensely altered andesite, flanked on either side by much less altered andesite. The zone of intensely altered andesite is as much as 100 feet wide and was traced for over 1,200 feet. It strikes northwest and has a moderate dip to the northeast. It is evidently a shear zone; the rock in it seems to consist mainly of chlorite, and is so thoroughly sheared as to have a schistose appearance. The talc evidently was formed by hydrothermal solutions that worked upward along the shear zone and altered the chloritic material. The associated quartz veins and metallic minerals, also, doubtless owe their origin to such hydrothermal activity.

The pure talc, or steatite, is very fine grained and is white to pale green. It has no true schistosity, but breaks into splintery somewhat flat pieces along incipient fractures, which are filled with thin soft films of finely divided calcium carbonate. Wherever observed, the pure talc was in vaguely defined, discontinuous streaks and lenses, from an inch to 5 feet in thickness, separated by talc-carbonate rock. The talc-carbonate rock or "semi-talc" not only fills the spaces between the lenses of pure talc but forms the outer envelope of the northern talc body, and in places it occurs in large masses without significant quantities of pure talc. It can be distinguished from the pure talc by the harsher feel of its surfaces. It is pale gray and mottled, and it effervesces freely in dilute acid.

The northern body of high-grade talc, partly exposed at the surface and in the main adit level, is the only one that has yet been worked. It is a lens, with a few minor offshoots, dipping 37° NE. Its probable length on the adit level is about 180 feet, its thickness ranges from 5 to more than 21 feet, and its extent down the dip is at least 190 feet. It consists of steatite, talc-carbonate rock, and a few remnants of highly altered andesite, bounded in part by faults or shear zones.

The southern body, which is exposed only on the surface, is a lens dipping 32° to 60° NE. It is about 180 feet long and from 2 to more than 5 feet in thickness; its extent down the dip is believed to be less than 80 feet. In this lens the high-grade talc is not so obviously mingled with talc-carbonate rock as in the northern lens, but some of it is stained at the surface with iron oxide derived from sulfide minerals.

The crosscut beneath the raise to the surface in the main adit level reveals talc and talc-carbonate rock, but here only a small amount of usable material could be mined; and the dumps probably contain only about 250 tons of usable steatite, mixed with waste. A large tonnage could be obtained only by new operations.

If the steatite is proved, by the tests now in progress, to be of desirable quality, further exploration should be done before mining is attempted. Trenches across the talc bodies should be excavated, at intervals of about 50 feet. The inaccessible "Jacoby drift," in which talc is said to be exposed, should be reopened and the quantity of talc accessible from the drift should be estimated. The flooded winze on the main adit level should be pumped out and examined for talc showings. When all the exposures thus made have been studied it will be possible to estimate the proportion of steatite in the workable deposits, and to form a judgment as to the feasibility of sorting or beneficiation.

GEOLOGIC MAPS AND SECTIONS OF THE GANIM TALC MINE, SHASTA COUNTY, CALIFORNIA