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JARBIDGE WILDERNESS, NEVADA

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SUMMARY

A geologic, geochemical, geophysical, and mines and mineral study of the Jarbidge Wilderness was made in 1972 by the USGS and USBM. A demonstrated resource of barite consisting of an estimated 90,000 tons of rock averaging 90 percent $BaSO_4$ was identified and is exposed in prospects in the southern part of the wilderness. Similar amounts of barite may occur in the same area and might be discovered by additional exploration. This area has a substantiated potential for barite. To the west, a much larger area is classed as having probable potential for barite resources. The northwest part of the wilderness has a probable potential for gold and silver resources in veins that extend into the area from the nearby Jarbidge mining district. No energy-resource potential was identifed in the course of this study.

CHARACTER AND SETTING

The Jarbidge Wilderness comprises an isolated highland area of about 100 sq mi that sits astride the divide between the Snake and Humboldt River drainages, in north-central Elko County, Nevada. Altitudes range from 6000 to more than 10,000 ft. The oldest rocks exposed in the area are sedimentary rocks of Ordovician age; other marine sedimentary rocks are as young as Triassic. The Paleozoic sedimentary rocks are cut by thrust faults of Mesozoic age, and are intruded by small dioritic stocks of Jurassic(?) age. All of these rocks have been eroded to a surface of low relief, on which

Tertiary volcanic rocks and associated sediments have been deposited. The area was uplifted and tilted to the north, intruded, mineralized, and faulted in Tertiary time. The principal faults trend a little west of north, and define a series of horsts and grabens; many of the faults of this trend have been mineralized in the Jarbidge mining district that adjoins the wilderness on the west for part of its length.

The USGS study of the area consisted of geologic mapping, sampling and analysis of bedrock and stream-sediment samples, and interpretation of a 1967 aeromagnetic survey of the Jarbidge Mountains (Coats and others, 1977). The USBM personnel examined known prospects and mining claims and sampled them for evaluation.

MINERAL RESOURCES

The Jarbidge mining district extends into the northwest part of the Jarbidge Wilderness. More than $10 million worth of gold and silver production is recorded between 1910 and 1949 for the district. All of this production was from veins of the west vein system, which crop out on the west slope of the Jarbidge Range. The veins of the east system, which crop out within what is now the wilderness, near the crest of the Jarbidge Range, have produced little to no gold. Sampling of prospects in the east veins disclosed some gold at the outcrop level and these veins might be significantly richer in gold and silver at depth. In at least one mine in part of the west vein system, the lower limit of workable ore was at about 7350 ft elevation. As the country has been dissected by many faults that strike more or less parallel to the veins, and that are generally downthrown on the west, the possibility of finding ore closer to the level of the East Fork Jarbidge River

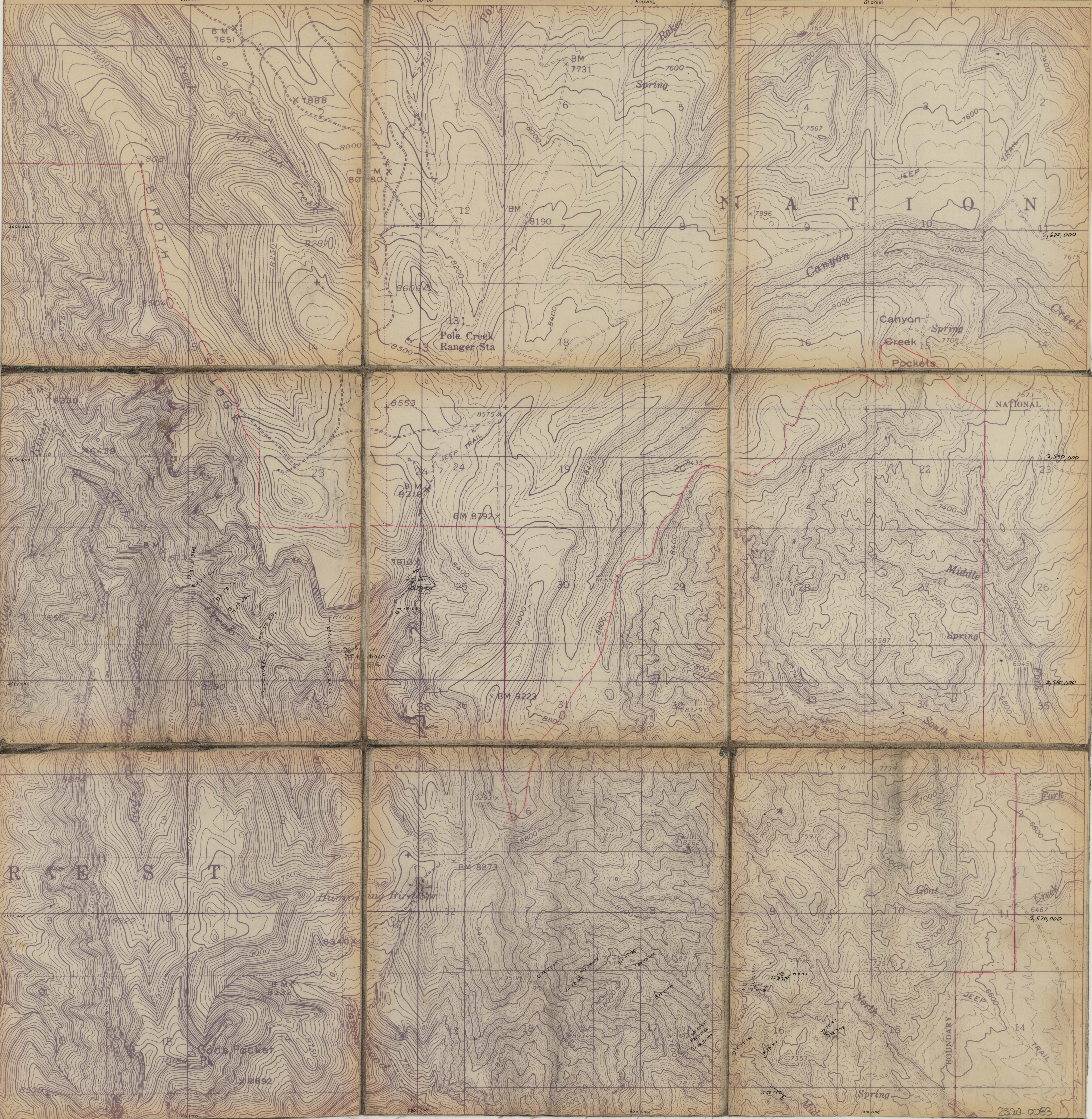
has not been entirely eliminated, although any ore bodies that exist are not likely to be of great extent. The area of the east vein system is considered to have a probable mineral potential for gold and silver resources.

Barite veins occur locally as fault fillings in Paleozoic sedimentary rocks in the southeastern part of the wilderness. During 1957 more than 1000 tons of barite ore was produced from the Wildcat mine, a few hundred feet south of the wilderness boundary, and a demonstrated resource of about 90,000 tons of rock averaging about 90 percent $BaSO_4$ is estimated to occur within the wilderness in the vicinity of prospects near the confluence of Camp Creek and its north fork. Similar volumes of barite rock might be found in this area by additional exploration. These identified and undiscovered resources together account for the area of substantiated resource potential for barite shown on the map. Although much of this material as mined would be slightly below ore grade (92 percent $BaSO_4$), hand sorting or jigging might raise the grade of the product to 92 percent or better.

More widespread occurrences of barite indicate that the entire area of exposed Paleozoic limestones in the south-central part of the wilderness has a probable resource potential for barite. Within this area, the two smaller areas of complexly faulted Paleozoic rocks, (shown on the map) are the most promising targets for prospecting.

SUGGESTIONS FOR FURTHER STUDIES

More extensive sampling and mapping are needed in the east vein system to establish whether any substantiated resource potential for gold and silver exists and the same is true for the area of barite mineralization in the southeast part of the wilderness.



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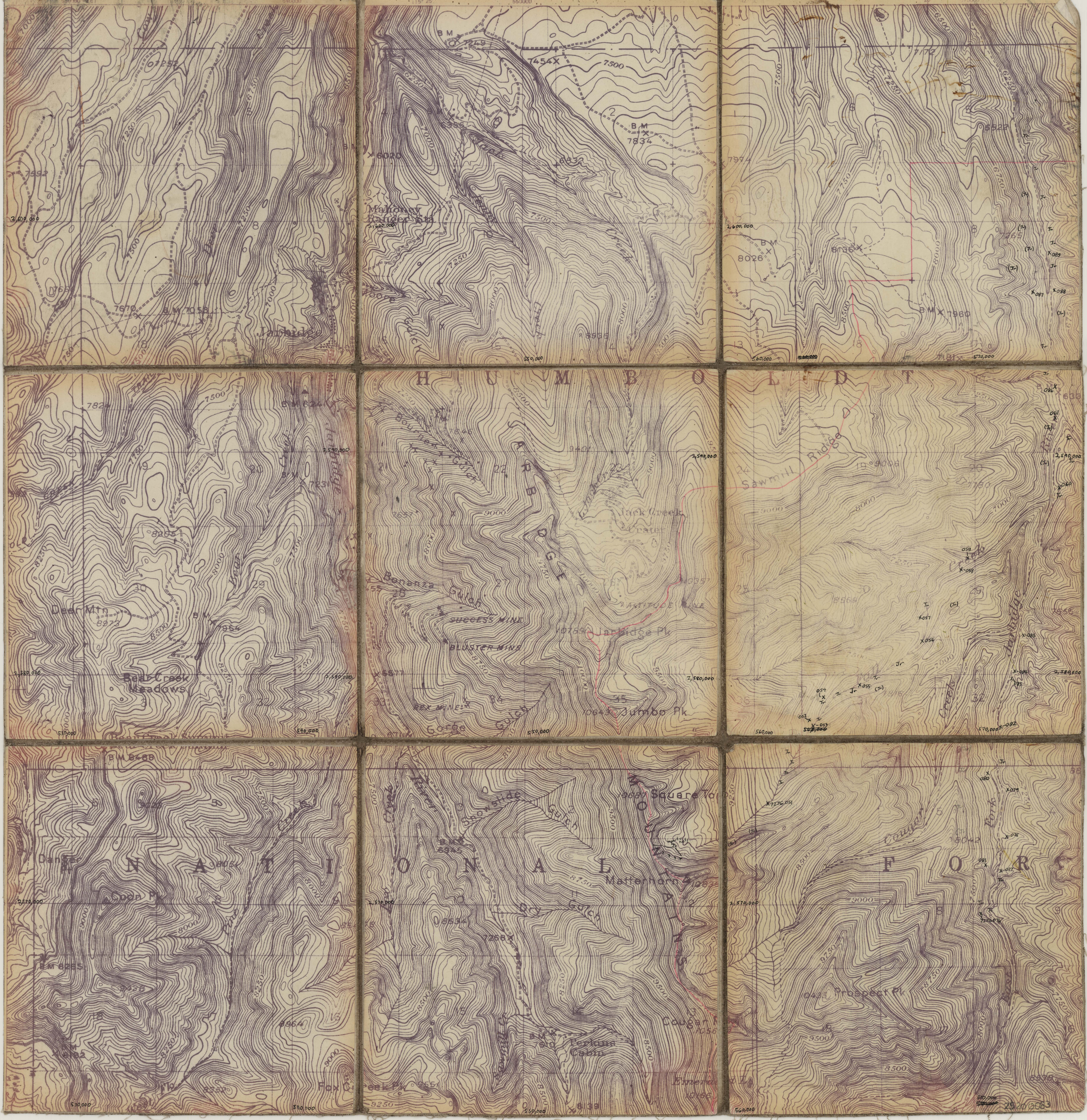
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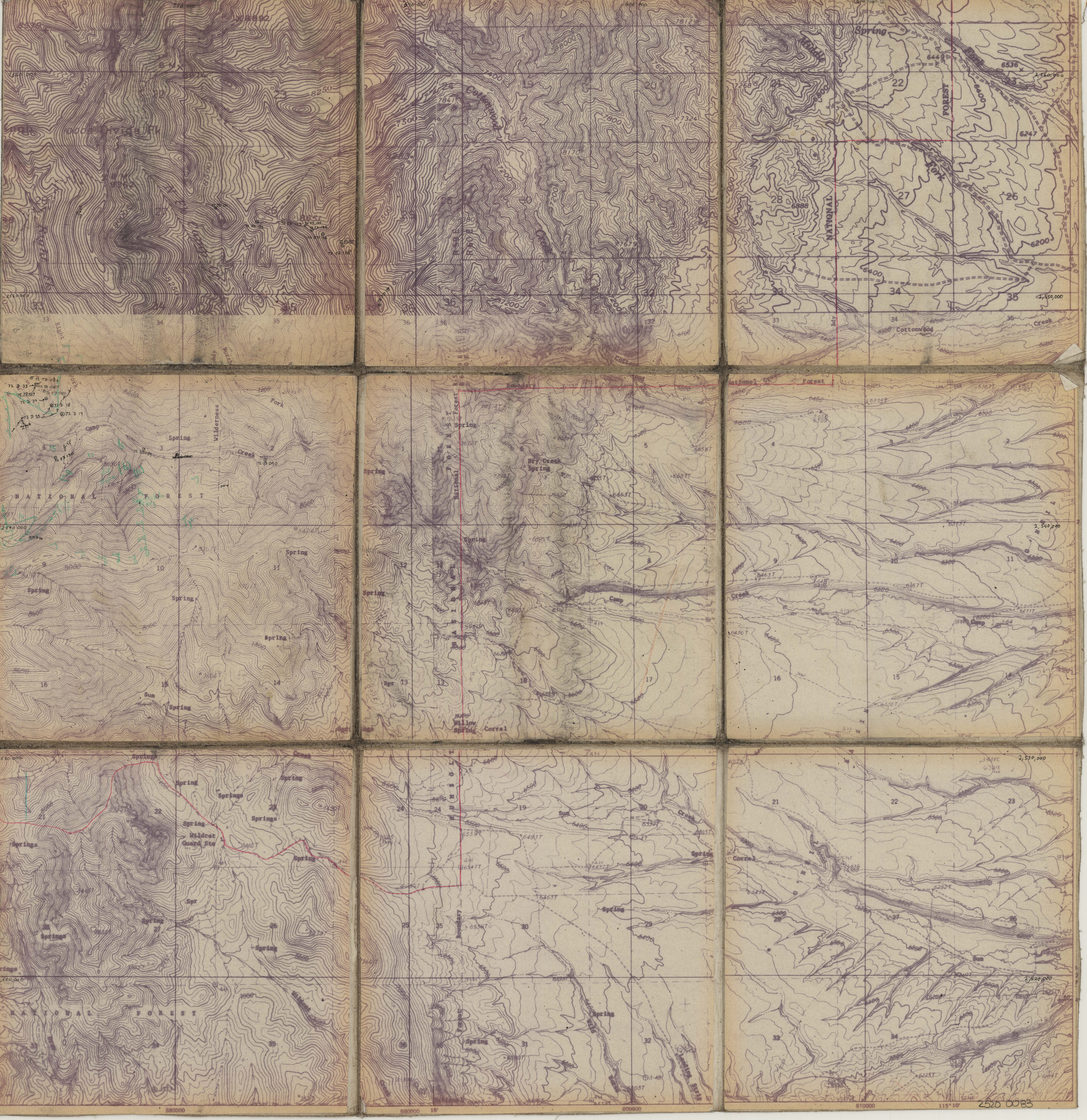
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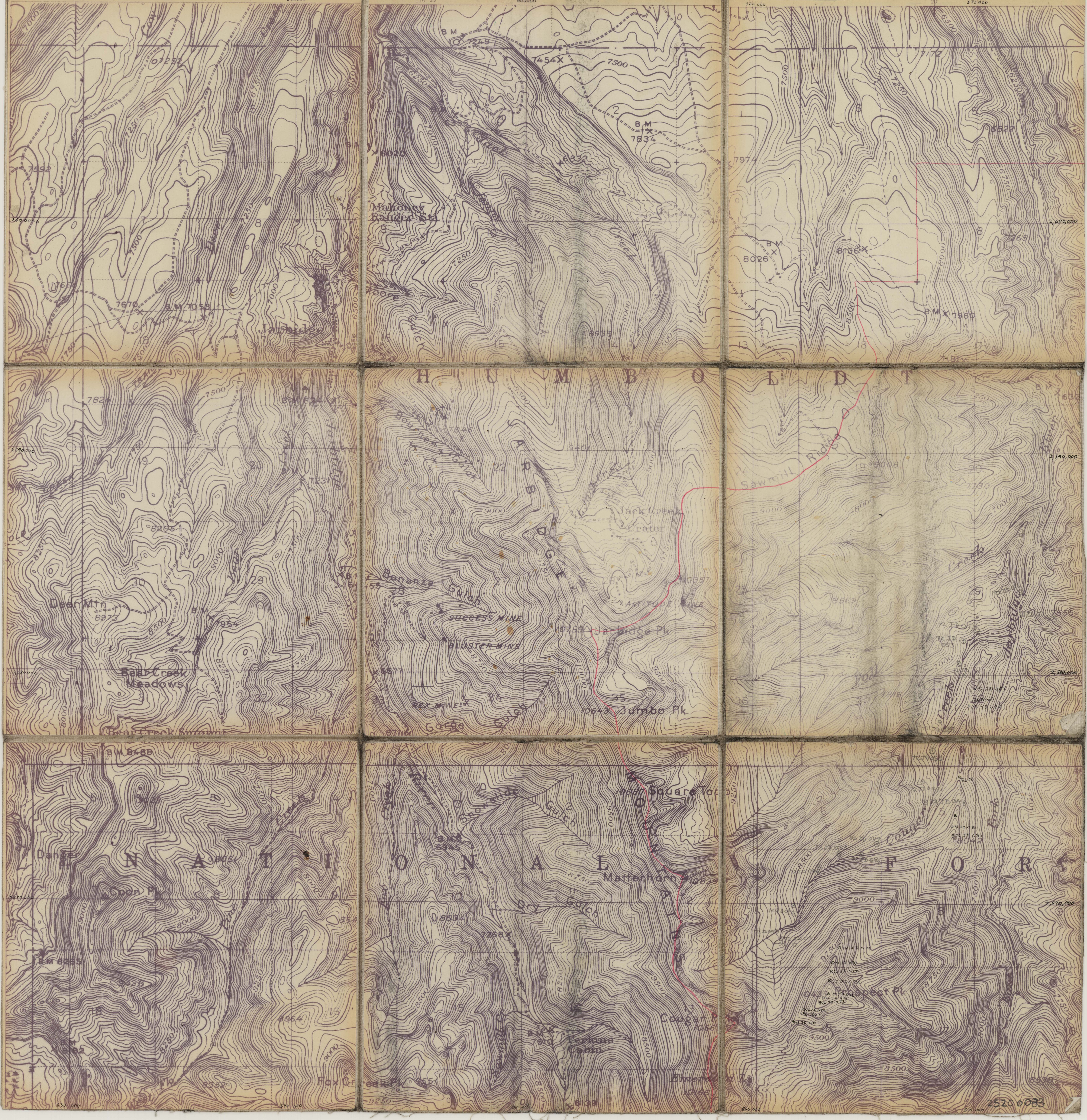

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