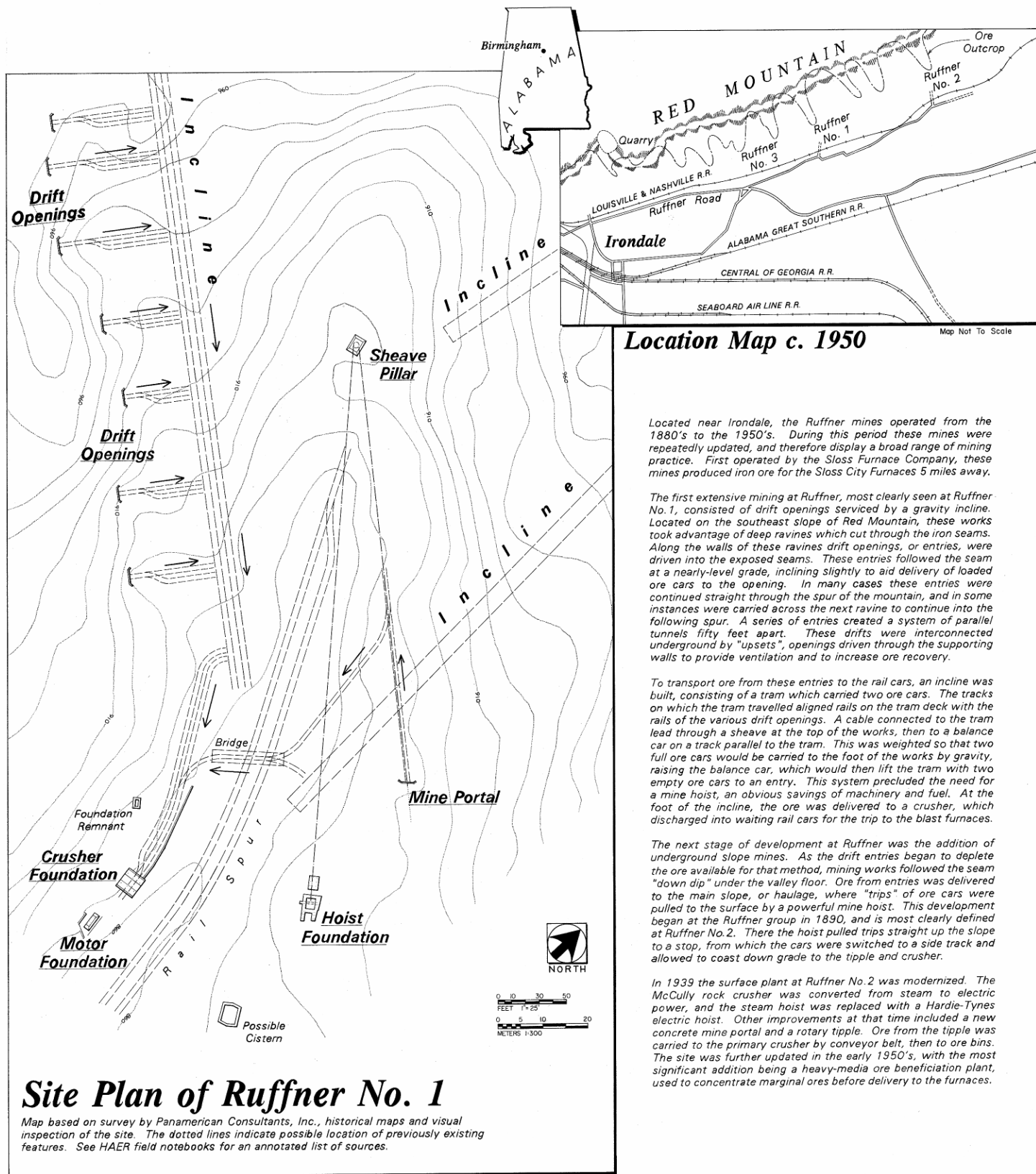


RUFFNER No. 1 MINING OPERATIONS

Jefferson County, Alabama c. 1910



Location Map c. 1950
Map Not To Scale

Located near Irondale, the Ruffner mines operated from the 1880's to the 1950's. During this period these mines were repeatedly updated, and therefore display a broad range of mining practice. First operated by the Sloss Furnace Company, these mines produced iron ore for the Sloss City Furnaces 5 miles away.

The first extensive mining at Ruffner, most clearly seen at Ruffner No. 1, consisted of drift openings serviced by a gravity incline. Located on the southeast slope of Red Mountain, these works took advantage of deep ravines which cut through the iron seams. Along the walls of these ravines drift openings, or entries, were driven into the exposed seams. These entries followed the seam at a nearly-level grade, inclining slightly to aid delivery of loaded ore cars to the opening. In many cases these entries were continued straight through the spur of the mountain, and in some instances were carried across the next ravine to continue into the following spur. A series of entries created a system of parallel tunnels fifty feet apart. These drifts were interconnected underground by "upsets", openings driven through the supporting walls to provide ventilation and to increase ore recovery.

To transport ore from these entries to the rail cars, an incline was built, consisting of a tram which carried two ore cars. The tracks on which the tram travelled aligned rails on the tram deck with the rails of the various drift openings. A cable connected to the tram lead through a sheave at the top of the works, then to a balance car on a track parallel to the tram. This was weighted so that two full ore cars would be carried to the foot of the works by gravity, raising the balance car, which would then lift the tram with two empty ore cars to an entry. This system precluded the need for a mine hoist, an obvious savings of machinery and fuel. At the foot of the incline, the ore was delivered to a crusher, which discharged into waiting rail cars for the trip to the blast furnaces.

The next stage of development at Ruffner was the addition of underground slope mines. As the drift entries began to deplete the ore available for that method, mining works followed the seam "down dip" under the valley floor. Ore from entries was delivered to the main slope, or haulage, where "trips" of ore cars were pulled to the surface by a powerful mine hoist. This development began at the Ruffner group in 1890, and is most clearly defined at Ruffner No. 2. There the hoist pulled trips straight up the slope to a stop, from which the cars were switched to a side track and allowed to coast down grade to the tippie and crusher.

In 1939 the surface plant at Ruffner No. 2 was modernized. The McCully rock crusher was converted from steam to electric power, and the steam hoist was replaced with a Hardie-Tynes electric hoist. Other improvements at that time included a new concrete mine portal and a rotary tippie. Ore from the tippie was carried to the primary crusher by conveyor belt, then to ore bins. The site was further updated in the early 1950's, with the most significant addition being a heavy-media ore beneficiation plant, used to concentrate marginal ores before delivery to the furnaces.

Site Plan of Ruffner No. 1

Map based on survey by Panamerican Consultants, Inc., historical maps and visual inspection of the site. The dotted lines indicate possible location of previously existing features. See HAER field notebooks for an annotated list of sources.