

The coal has to be hauled through that section of the semi-arid western country where railroad traffic is subject to severe interruptions when it rains, either due to track washouts caused by cloudbursts, or to the loss of bridges torn away by the debris carried along by floods in the usually dry beds of streams. To insure continuous operation of the plant it is therefore necessary to carry a large stock of coal at all times. It was considered desirable to provide storage for one month's fuel consumption. Storage by reserve stock pile entails the expense of double handling, and with bituminous coal involves deterioration, both in heat value and in physical character. Some form of bin storage, by which the whole stock is carried in the bins, and is continually moving through them, is therefore very desirable.

The form of storage adopted for this plant is that shown by the coal dock, numbered 18 in Fig. 1 and Fig. 2. The site selected afforded the opportunity of getting a trestle for main line cars thirty-three feet above the boiler room floor, at the cost of a spur of moderate length from the main line, and a short trestle approach, both on a four per cent. grade. The trestle continues over the coal dock on a level, and twenty-four feet above the floor of the dock. This floor is of reinforced concrete, resting on a series of transverse walls. The two ends and one side of the dock have reinforced concrete walls twelve feet high. For the present the wall on the side next the boiler house is omitted, though anchorages are provided by which it may be added in the future if desired.

The transverse foundation walls form a series of tunnels under the dock, in each of which coal may be drawn from the bottom of the pile through the hoppers and coal valves shown, fresh coal being unloaded on top of the pile direct from the main line cars. The dock constructed holds 1200 tons. An extension to double this capacity is shown on the plan in dotted lines.

With the fuel consumption in immediate prospect, and with the labor conditions which obtain at Nacozari, it was considered that hand firing would at present be most economical. The coal is brought to the boilers in charge cars holding one ton of coal each, and ashes loaded by hand into small dump cars which are then pushed to a point where they are discharged into main line cars on a spur from the main line, the latter being parallel to the boiler house, 150 feet distant from it, and twenty-six feet below the level of the boiler room floor.

All charge car and ash car tracks are on the boiler room floor level, and are without grade.

In case future extension and other developments make it profitable to use automatic stokers, provision is made for deliver-