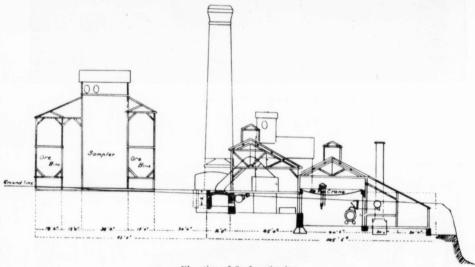
car ferry "Georgia," thus avoiding the breakage of bulk. The wharf itself is about 750 feet in length, with a depth of about 21 feet at low tide, and contracts have been entered into to further extend this wharf into still deeper water, and erect at the sea end the most modern appliance for unloading vessels in order to insure rapid work. Connected with this unloading appliance will be bunkers of sufficient capacity to accommodate a ship's cargo.

Starting from the wharf the ore will be carried in cars hauled by the company's own locomotive to the point where the railroad branches and near which is located the track scales of the latest design by the Fairbanks Company, and having a capacity to weight sixty tons. These scales have a patent device which registers on a card by perforating the gross and tare weights so that it is absolutely impossible for any dispute to arise. From these scales the cars are pushed on to the trussel and over the receiving bins, of which there are six, each bin having a capacity of about 300 tons. These bins are arranged in a line

ing floor of the furnace building, which is situated to the east and nearer the shore line, is about 45 feet. This space is occupied by the coke track and the flooring over the dust chamber. The dust chamber is 200 feet long, 10 feet wide and 12 feet high; the expansion chamber is 24 feet by 40 feet by 20 feet high and the stack connecting with it is a circular brick stack 12 feet in diameter and 120 feet high, interior measurement.

The furnace building is situated with its south side flush with its south end of the dust chamber and sampling mill. It is 73 feet long by 45 feet wide, the charging floor being on a level with the roof of the dust chamber. In this building are three furnaces, the smallest being a cupola for re-melting matte whenever desirable and the two larger being a water jacket smelter with a capacity of 350 tons per day, the other, a Garretson furnace, having about the same capacity and of a new type by which with certain sulphide ores the quantity of fuel can be reduced from 11 to 12 per cent. to less than 3 per cent; while smelt-



Elevation of Crofton Smelter.

parallel to the sampling mill with the automatic discharge gates about 30 feet distant from the crusher, which is built in a pit in the foundation of the mill. The ore is taken from the receiving bins in ore buggies, again weighed on a Fairbanks platform scale, then dumped into the crusher, which is a Blake 10x20 inches, and with which is connected the elevator system. By this the ore is elevated to the higher floors of the sampling mill which has a capacity to sample 1,000 tons per day and a total height of 80 feet, where it passes through rolls and is automatically sampled, the final sample being delivered on the crushing floor of the mill for transfer to the assay office situated about four hundred feet northerly from the mill while the remainder of the ore passes through chutes into the delivery bins arranged in a line parallel to the sampler on the east side. There are eight of these bins, each having a capacity of about 300 tons, and furnished with automatic discharge gates. The distance from the delivery bins to the charging and converting can be carried on in one operation.

In order to secure the advantage of drawing matte from the furnaces and transferring to the converter building by gravity, about 17,000 yards of material have been excavated next to the shore line, so that the floor level of the furnace building is about 14 feet lower than the charging floor, and the floor level of the converter building eight feet lower still.

The converter building, which joins the furnace building on the east side, is 73 feet by 45 feet. In this are installed two converters, each having a capacity to treat 50 tons of matte daily. Adjoining, to the cast of the converter building is the copper room, which, as has already been stated, is connected with the wharf by railroad tracks.

The converter building is arranged for a 50-ton electric crane for handling the converters, and a hydrau-