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ROOMS 3 AND 4 WINDSOR HOTEL, MONTREAL, JANUARY, 1910.

CONSTRUCTION AND METHOD OF OPERATION OF ORE BUNKERS AT SKAGWAY.

By A. L. BERDOE.

Western Branch Meeting, Victoria, B.C., Sept., 1908.

The plant consists of about two thousand three hundred feet of railway track, three feet gauged (of which about 1,800 feet is on wooden trestles), a car bunker, and ore bunker 30 by 72 feet divided into eight pockets, a power station, a wharf upon which are built two loading out towers, and four dolphins consisting of about ten piles each.

The bunker is connected with the dock by means of two double-tracked trestles for Hunt Automatic railways. The structures are built of Puget Sound Douglas Fir, and all piles are creosoted.

The bunkers and wharf towers are housed in and the pockets are lined with Australian Iron Bark.

The whole plant is built on a rocky mountain side with an average slope of about 40 degrees.

The bunker is placed on a point, and in order to secure for it the desired elevation, it was necessary to excavate about 4,500 cubic yards of solid and loose rock. About 3,300 cubic yards additional of excavation of the same class was required to complete the grade for the various tracks.

Nearly a million feet of lumber was utilized in the construction of the plant.

In addition to battering the back piles of the dolphin they are guied with one inch cables to the solid rock along the shore.

The machinery consists of two drums operating return cables for hoisting a Hart convertible copper bottom car from underneath the hopper of the tippie into the ore bunker. The drums are operated by a General Electric Company eighty-five horse power

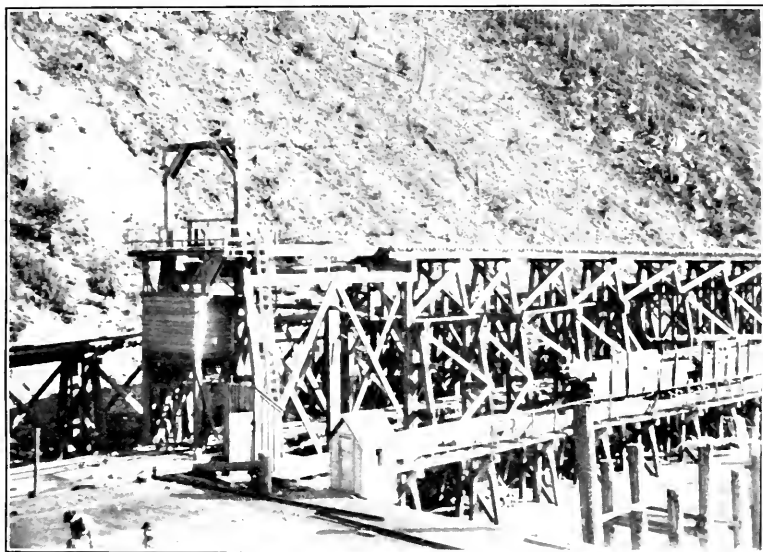


FIG. I

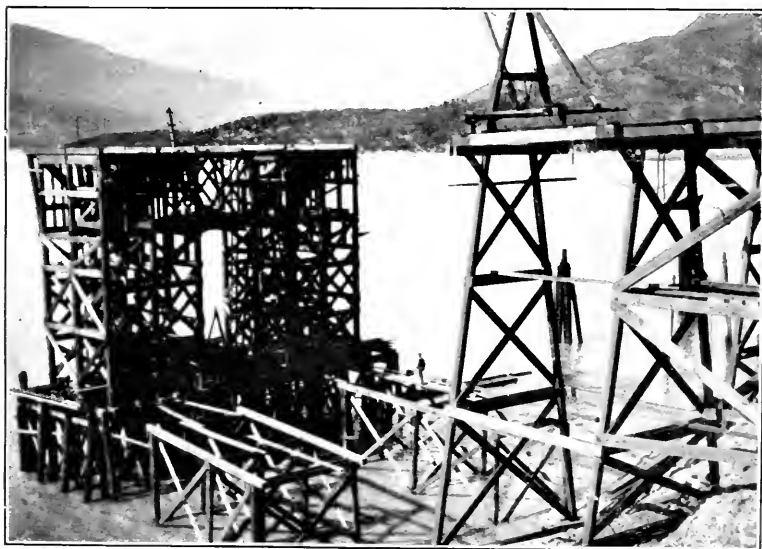


FIG. II

motor, which receives its current from a seventy-two K.W. generator, which is located in the power house at the shops two miles away.

The power house is situated far enough south of the present bunker to allow for the erection of an extension to the bunker, of the same capacity as the present one, namely, 2,500 tons.

The low track is built on a five per cent. grade for about 560 feet. It then runs level for a short distance, after which it ascends one hundred feet on a five per cent. grade. From this point on it runs on a grade of from seven-tenths to one per cent.

The track is of sufficient length of the one hundred feet of five per cent. grade to accommodate eleven loads.

The tipple track leads off from the level portion of the load track and is built on an adverse grade of one-half per cent.

The track leading from beneath the hopper under the tipple to the ore bunker is built on a twenty per cent. grade and splits into two tracks near the bunker, thus giving one track over each series of four pockets in the bunker.

OPERATION.

The mode of operating the plant is as follows:—

Regular flat or box cars will be used for hauling the ore from the mines and will be pushed up the load track of five per cent. grade, and stored at the south end of the same, south of the one hundred feet of five per cent. track beyond the level grade. They will then be dropped by gravity, one at a time, on to the tipple, where they will be revolved longitudinally until they reach an angle of thirty-five degrees with the horizontal. At this angle, the ore will be discharged into the hopper under the tipple. The car will then be run down the one half per cent. grade to the five per cent. load track and down this to the wharf track. This operation will be entirely effected by gravity. The car dumper will be operated by hand power. Box cars will have an end door for discharging and top doors over trucks for loading.

The ore will next be drawn from the hopper into a Hart convertible car, which will then be drawn up the twenty per cent. grade by means of a cable, and dumped into the ore bunker pocket desired. It will then be drawn out of the bottom of the pocket

into a 5-ton HUNT automatic car, which will run by gravity to the wharf car, where the car will be automatically dumped into a hopper. The ore will then be drawn from this hopper through a telescope shoot into the ship.

The wharf hoppers are forty feet centres and the telescope shoots are arranged to revolve longitudinally along the face of the wharf to accommodate the hatches of the various boats. They are also arranged so that they can be moved up and down in the slides, to make provision for a range of tide of about 22 feet.



FIG. III

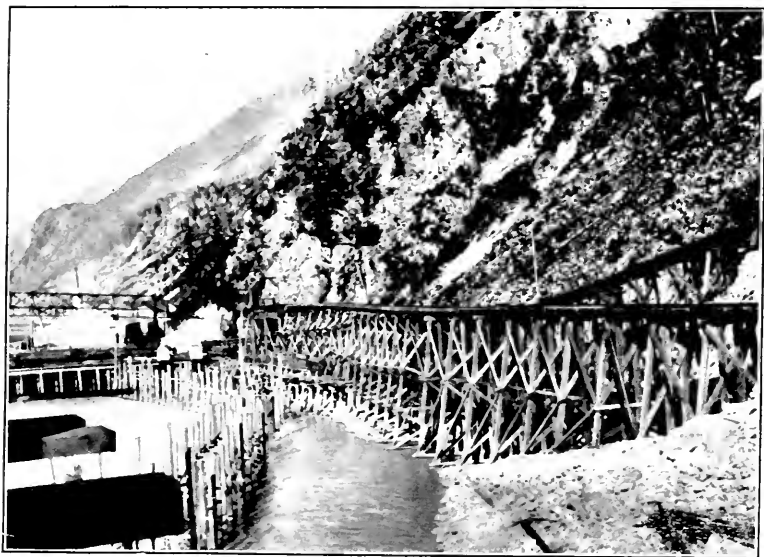


FIG. IV

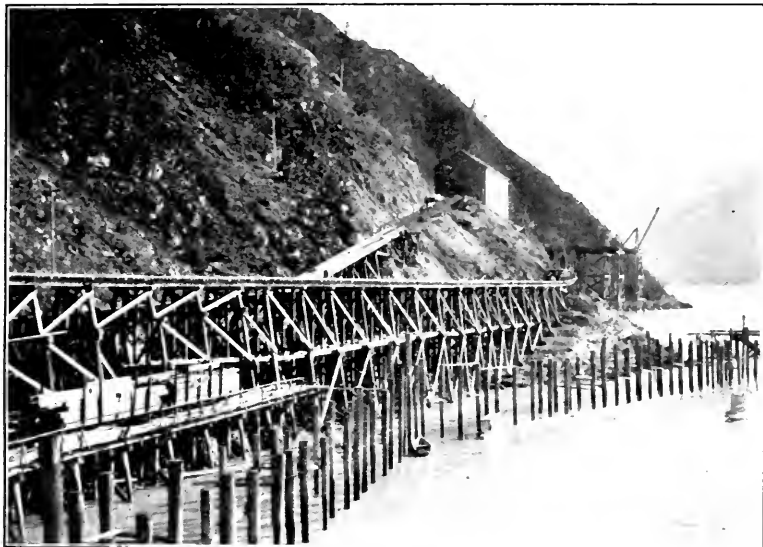


FIG. V

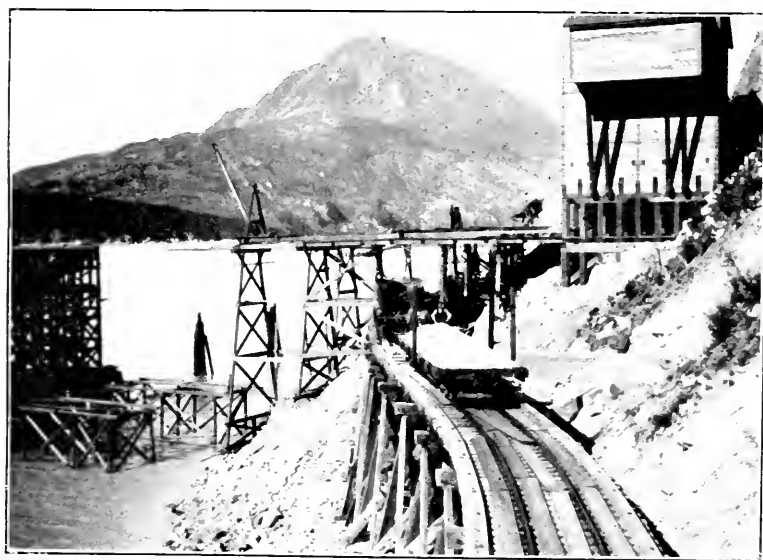


FIG. VI