

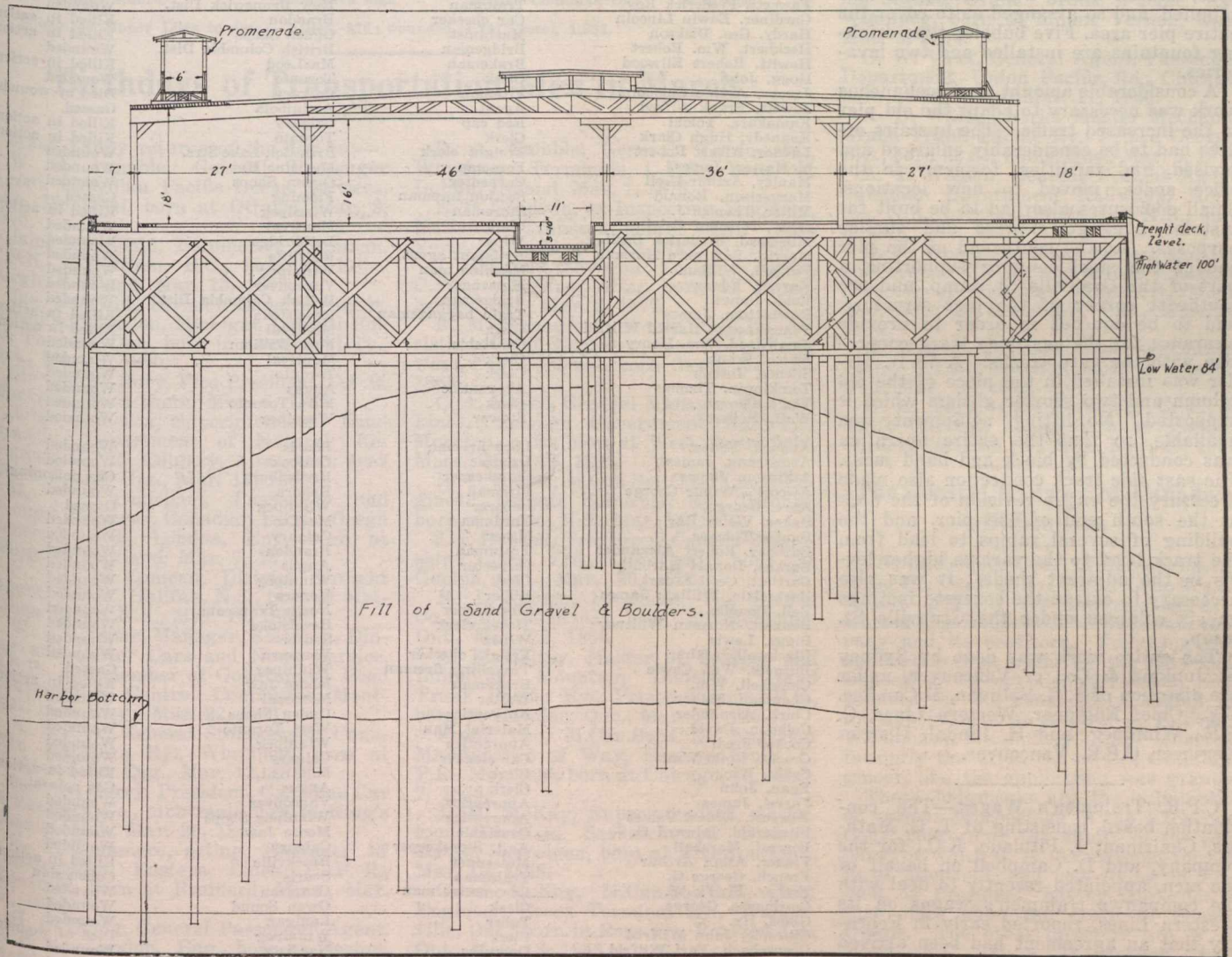
to them. A laminated creosoted 2 x 4 in. decking was laid diagonally on the stringers, the idea being to give additional rigidity by tying several parallel pile bents together in this way. Piles were also braced diagonally, and additional longitudinal bracing was run down each side of the depressed track. The outside railway track had its own special bracing. Waling was also installed at periods of maximum low water. On the laminated deck, there was laid a flooring of 2 x 4 in. Australian hardwood, running parallel to the pile bents. This flooring was air bored and spiked with great care to get a tight joint.

The shed area was divided down the middle by a depressed standard gauge track, which brought the car doors at

outside bays. The roof itself was made up of 2 x 6 x 30 ft. lamination, covered by a 3-ply asbestos roofing mopped on. A low monitor, ventilated by fixed louvres was run down the centre of the roof and also extended over the old portion of the shed. Running around the outer edge of the roof is a covered promenade 6 ft. wide. Two stairways lead from it to the lower outside deck. On the east side the promenade railing is in removable sections, as it is planned to land trans-Pacific passenger traffic to this promenade and so avoid passenger movement on the lower freight level. A heavy removable passenger gangway runs on the east side railway track and is provided with adjustable landing gangways on each side between itself the ship and the promenade.

few sliding doors and solid wall. The wall is made up of shiplap covered with corrugated iron. The north wall is provided with two doors.

Three freight elevators of the Barlow type were installed, one being a new machine and the other two being transferred from former locations on or near Pier D. Two adjustable freight slips were also installed. As the east side track crosses these slips, a device was worked out so that this section of track operates with a turntable. When the slip is up, the track is locked in place, and supported rigidly on the pile bents. When the slip is down, the track is given a quarter turn, so that the rails lie parallel to the slip axis and can be readily trucked over. Each slip is operated by two worms and



Canadian Pacific Railway Pier D, Vancouver. Transverse section, through one story shed, looking north.

the deck level. The area on each side of the track was divided into bays 36 and 46 ft. wide respectively, with outside bays of 27 ft. each, with roof columns 20 ft. centre longitudinally. These columns were posts, carried on special piles, independent of the rest of the substructure. The roof was required to bear, not only its own weight plus snow and wind load, but also a promenade with a possible live load of 100 lb. per sq. foot, the total load being about 150 lb. per square foot. It was also desired to have the roof line match that of the old pier, and at the same time keep a minimum clearance of 16 ft. under the trusses in the shed. The wooden trusses over the centre bays were 82 ft. long, and designed with separate members of 14 x 28 x 28 ft. over the

The passenger bridge was originally on the east side of the pier and was moved to the west side. The space formerly occupied by it was closed up and turned into offices.

The entire east side of the pier is made up of continuous sliding doors. There are 95 of these running on two parallel tracks and overlapping. They are hung on adjustable rollers, which will take up settlement. The bottom track is made up of T and angle irons, left open through the deck, so that nothing can collect to interfere with the working of the doors. The doors are glazed in the upper half and screened, with a 3 ft. section of window above them, to provide additional light. The west side walls are made up of short sections of continuous doors, a

gears, on a common shaft, with endless hand chain attachments. The slips are supported by steel hooks, which drop back when the slip is to be lowered, by means of a lever pulled from the deck level. The centre depressed track is fitted with an electrically driven car-haul, with a capacity of 10 loaded cars. Its use will avoid the presence of any steam locomotives inside the pier, with their attendant fire risk and smoke.

Motors, with a total capacity of about 200 h.p., are installed on the pier. The current is brought to a concrete transformer station at the south end of the pier and distributed in ducts. No transformers are allowed on the pier, on account of fire hazard. Lighting current is also transformed off the pier and distri-