PIER "D" EXTENSION
VANCOUVER, B.C.

A pier stretching hundreds of feet out into the water, each row of piles similar to the preceding row, looks like an easy thing to build. It is,—in spots. Other spots are difficult and the whole structure, which is incidentally one of the largest piers on the Pacific Coast, presented a variety of engineering problems.

In the first place the pier accommodates three distinct kinds of traffic, coastwise, trans-Pacific and miscellaneous cargo boats. This means that the facilities for handling different classes of passengers and freight differ materially.

Again, the Vancouver Harbor floor shelves off rapidly and is overlaid with soft material for a considerable depth. As a result to reach hardpan at the outer end of the pier, piles 130 ft. long had to be provided,—equivalent in height to a ten story or more building. Since water and mud offered no end or side support for the piles, it was first necessary to put in a fill on the pier site, the result being that the weight of the fill gradually displaced the soft mud and settled the fill over the hardpan. When equilibrium was reached, a small amount of fill representing the approximate weight of the pier and cargo itself was dredged off. Frequent soundings adjacent to and over the filled area showed what was taking place under water and when settlement of the fill had stopped pile driving was begun.

Another problem arose from the fact that Vancouver Harbor waters are full of teredo. All piles were therefore treated with creosote pressed into the outer surface after the sap and water had been boiled out. The greatest care was used to keep the creosoted protection intact after treatment and until the pile was driven into place.

Some of the longer piles after creosoting weighed several tons and their handling and driving required special equipment. Two floating drivers and one skid driver were used. About 3,000 piles were driven. The position of all piles was given by transit.