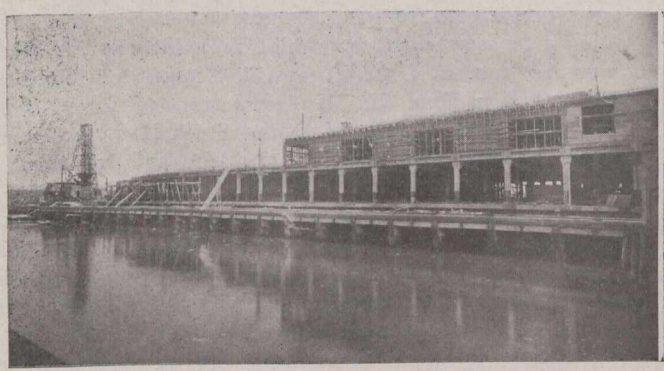
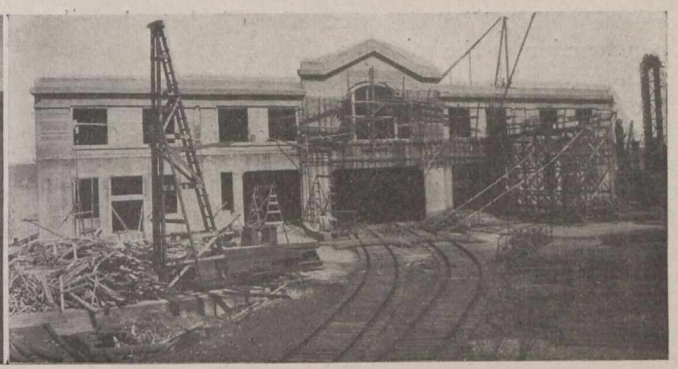
TIDEWATER ACTIVITIES AT HALIFAX.

CONSIDERING the effect which the war and the anteceding depression has had upon engineering work in general, the progress that has been made during the past several months on the Intercolonial Railway ocean terminals under construction at Halifax, is inspiring and more or less remarkable. The work on the superstructure of pier No. 2 has made material advancement, as has also the railway cuttings and other phases of the whole scheme. The general details of the terminal plans were given in *The Canadian Engineer* for July 30th, 1914. Briefly, the terminals will extend for 1¼ miles southward from Fawson Street along the western shore of Halifax Harbor. They provide for a bulkhead passenger landing quay 2,000 ft. long, and four new piers from 650 to 800 ft. long and 235 ft. broad, the whole protected at the southern end by a rubber mound breakwater a quarter of a mile long. Ample railway tracks and connections, sheds and equipment, grain elevator, etc., will be provided for the handling of passengers and cargo, and a special feature of the terminals will be the exceptionally good facilities for the handling of passengers, mails and express freight. Extensive immigration quarters will be provided at the passenger landing quay. The quays will provide for depths ranging up to 45 ft., and will therefore be ample for the largest transatlantic liners afloat.



View, Looking South, of No. 2 Shed, While Under Construction.



Entrance to Reinforced Concrete Freight Shed, Pier No. 2.

A part of the scheme is the Halifax Ocean Terminals Railway, a double track line from Rockingham, four miles from North Street station, Halifax, to the site of the new terminals. Thus the existing line of the Intercolonial will be connected with the quay. The line includes the formation of a freight terminal yard and a diversion of the I.C.R. at Bedford Basin and at Fairview. It passes under the Halifax and South Western Railway and follows the North West Arm to Young Avenue. This portion of the line includes a cutting, mostly through rock, and of sufficient depth to pass under all existing roads and streets with very slight alterations. Grade crossings have been entirely eliminated and the location of the railway along the North West Arm and the south end of the peninsula was decided upon with a special view toward the preservation of the natural beauty of these suburban and residential parts of the city. Railway construction work has included a large amount of filling along the west shore of Halifax harbor for the proposed bulkhead, quays and piers.

The contract for the grading of the railway was awarded a year ago last June to the Cook Construction Company and Wheaton Bros., and work commenced early last fall. Grading included earth cuts 22 ft. wide for single track with an additional 13 ft. for each extra track. In rock the widths were 20 ft. and 13 ft. respectively with slopes of ¼ to 1. Embankments were to have a grade width of 16 ft. or 18 ft. when under or over 16 ft. in height, respectively. The earth slopes were to be 1½ to 1. The maximum grade is 6/10%, compensated for curvature and the sharpest curve, 4%. This contract included the construction of the freight terminal yard and breakwater. Materials for both were provided by the excavations from the railway cuttings. The breakwater embankment consists of rock protected on the sides and seaward extremity by rubble rip-rap and paved on the top with large angular pieces of rock.

Specifications call for a core embankment 40 ft. in width at low-water level of ordinary spring tides. Side slopes 1 : 1 extend from the bottom of the harbor to low-water level. From its base to 30 ft. below water level the embankment consists of varying sized rocks. In the upper portion these rocks are not to weigh less than 1 ton each. The sides have large angular blocks for protection to 30 ft. below water level, these blocks weighing from ½ ton to 2 tons each. On the seaward slope the rip-rap is to be composed of blocks weighing from 2 to 8 tons. This is also the required weight of blocks from the top of the embankment at low-water level to the top of the breakwater. The breakwater will measure 30 ft. in width across the top, and is to be evenly surfaced with all interstices tightly packed.

The buildings for the new terminal include a passenger station, the plans for which have recently been prepared by Ross & Macdonald, Montreal. Plans for other buildings to be constructed upon the piers are now being prepared. The contemplated arrangement includes a power house to furnish light, heat and power, a grain elevator and the large freight shed with abundant trackage facilities for the rapid handling of freight.

The pier, which is the widest in Canada, and which has a floor area of 258,000 sq. ft., is one which, owing to its piling problems, difficulties of concrete construction, length from bulkhead, spacious yard room, etc., has occasioned much admiration from the maritime provinces. At the present time concreting has been practically completed on the freight shed structure, and the building glazed. Accommodation is being provided in it for 2,000 passengers. This accommodation is but temporary and will be removed when the new passenger station has been built.