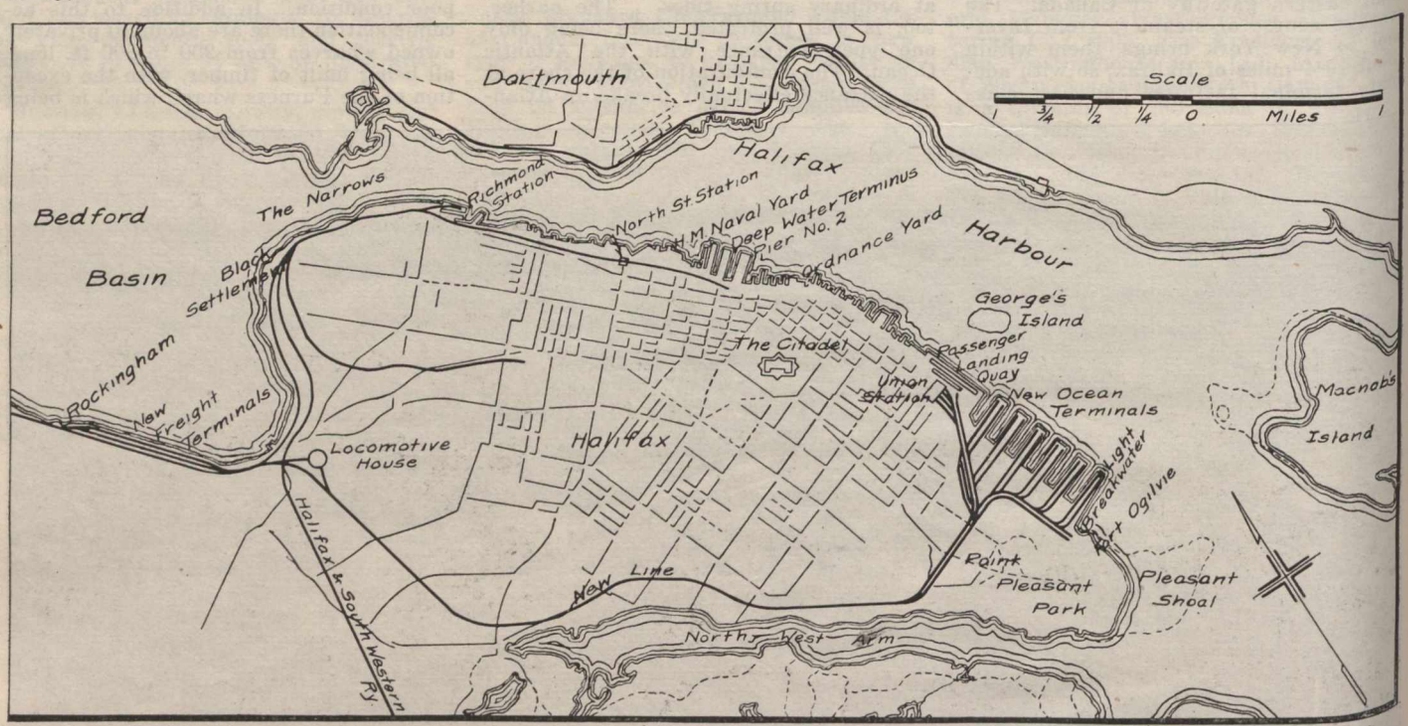
Halifax side of the harbor and extend southward from the Nova Scotia Tramways & Power Co.'s property for about 1¼ miles to Reid Rock. The terminals consist of a passenger landing quay 2,006 ft. long, 5 piers 1,250 ft. long by an average width of 350 ft., and a breakwater about 1,600 ft. long, on the north side of which will be constructed later 2 steamship berths. On the north side of the first basin are two berths, 500 and 700 ft. long. With the exception of these 2 berths, which will have 30 and 35 ft. at l.w.o.s.t, 45 feet. at l.w.o.s.t will be provided at all the berths. The whole system will be equipped with modern sheds, freight handling appliances, grain elevators, ample tracks and all requirements pertaining to modern terminals.

Connecting Railways.—In order to provide railway connections with the new terminals an extension of the Intercolonial Ry. was necessary. Many locations for this extension were studied, and finally, after careful consideration, it was decided to construct a line diverging from the Intercolonial Ry. at Fairview. Great care has been taken in the location and design of the bridges, for grade separation of railway and highway traffic, to preserve, as far as possible, not only the beauties and amenities of the Northwest Arm, which from a tourist point of view is the city's greatest asset, but also of the suburban district through which the railway passes. From the crossing over Chebucto Road the railway follows the east side of the Northwest Arm to Maplewood, and from thence passes easterly in a deep cutting to the site of the terminals. Grade crossings are eliminated, the railway crossing over the highways at Fairview Road by steel girder spans with concrete abutments and over Chebucto Road by steel girder spans encased in concrete, the remaining highways and streets being carried over the railway on ornamental reinforced concrete arches. The railway is about 5 miles long and is to be double tracked throughout, with 4 tracks at Bower Road and branching out into the yard with 16 tracks at Tower Road. The maximum grade for eastbound traffic is to be 6/10% compensated 0.04% per degree of curvature, and the sharpest curve will be 4 degrees with standard spirals.

The yard at Point Pleasant will have the following capacity: Freight storage and classification, 840 cars; elevator tracks, 200 cars; passenger car cleaning and storage, 296 cars; train shed, 119 cars. At Fairview is a new freight receiving, classifying and departure yard, with a capacity of about 1,600 cars, to accommodate all inward and outward bound freight. A large union passenger station will be erected on the site of what was H.M. lumber yard, near South and Hollis Sts., convenient alike to both the business and residential centres of the city. In general, the passenger station will be a T-shaped granite structure, the building on the bulkhead passenger landing quay forming the head of the T. The portion known as the city station will face on a plaza located between South and Tobin Sts. In the bulkhead passenger landing quay building, connected with the station proper, accommodation will be provided for all classes of passengers. The main trunk sewer, known as freshwater sewer, which heretofore has discharged within a few hundred feet of Pleasant St., detracting somewhat from the desirability of the old Esplanade district, will be diverted and will discharge at the head of pier A, over 1,400 ft. from the street. When the terminals are completed over 115 acres of land will have been reclaimed from the area to form the piers and quay spaces.

Railway Construction.—The work of constructing the new railway was commenced toward the end of July, 1913, at Fairview, and a month later at the harbor end. A thoroughly up to date equipment, consisting in all of two 100-ton, two 60-ton, and one 70-ton steam shovels, complete, and a 20-ton steam locomotive crane, was gradually brought on to the work, which was prosecuted with great energy. The cuttings, which are long and deep, as much as 60 ft. in parts, consisted mostly of rock, a shale, very seamy and stratified, with an occasional trace of iron stone and trap rock. Owing to its shattered formation the rock proved very troublesome to drill and shoot, and several types of drills were used, including both electric and steam, which drilled holes from 2¼ in. diameter upward to 5⅝ in. The well drills, drilling a hole 5⅝ in. diameter, gave the most satisfactory results in the main cutting, as owing to the shattered and seamy condition of the rock and the presence of layers of sand and gravel, it was in most cases necessary to case the holes for a considerable depth. South of Quinpool Road to the terminal yard most of the drilling was done with well drills. Where the cut was deeper than 30 ft. it was drilled and shot for its full width in two lifts, and where it was less than 30 ft. deep it was drilled and shot in one lift. The holes were placed usually about 9 ft. apart in rows 6 ft. apart, staggered and drilling to 6 ft. below subgrade and loaded without springing. The drilling in the terminal yard was mostly side hill work and was done mainly with electric drills, drilling a hole 2¼ in. in diameter. The holes were drilled in 8 ft. squares and sprung. This was the most satisfactory piece of work as regards drilling and shooting on the whole cutting. The shooting of the rock in the Fairview end of the cutting presented many difficulties, the rock being very faulty, containing pockets of rotten, disintegrated rock, mud, clay, gravel and sand, as well as water. The cut was drilled and shot no less than three times before it could be completely excavated. The first time holes were drilled with well drills at 9 ft. centres in rows 16 ft. apart. It was intended to spring these, but most of them caved in and were lost; as many as possible, however, were shot and a shallow cut taken. The second time the holes were drilled 10 ft. apart in rows 8 ft. apart to 6 ft. below subgrade and shot without springing, but this was not entirely successful. The third time the holes were drilled 10 ft. apart in rows 5½ ft. apart, staggered, and to 6 ft. below subgrade without springing. Even this did not break the bottom of the cut properly, and the further use of piston drills was necessary for that purpose. A low freezing explosive was used on account of the presence



Site of Halifax Ocean Terminals and Union Passenger Station, with Double Track Railway from Main Line at Rockingham.