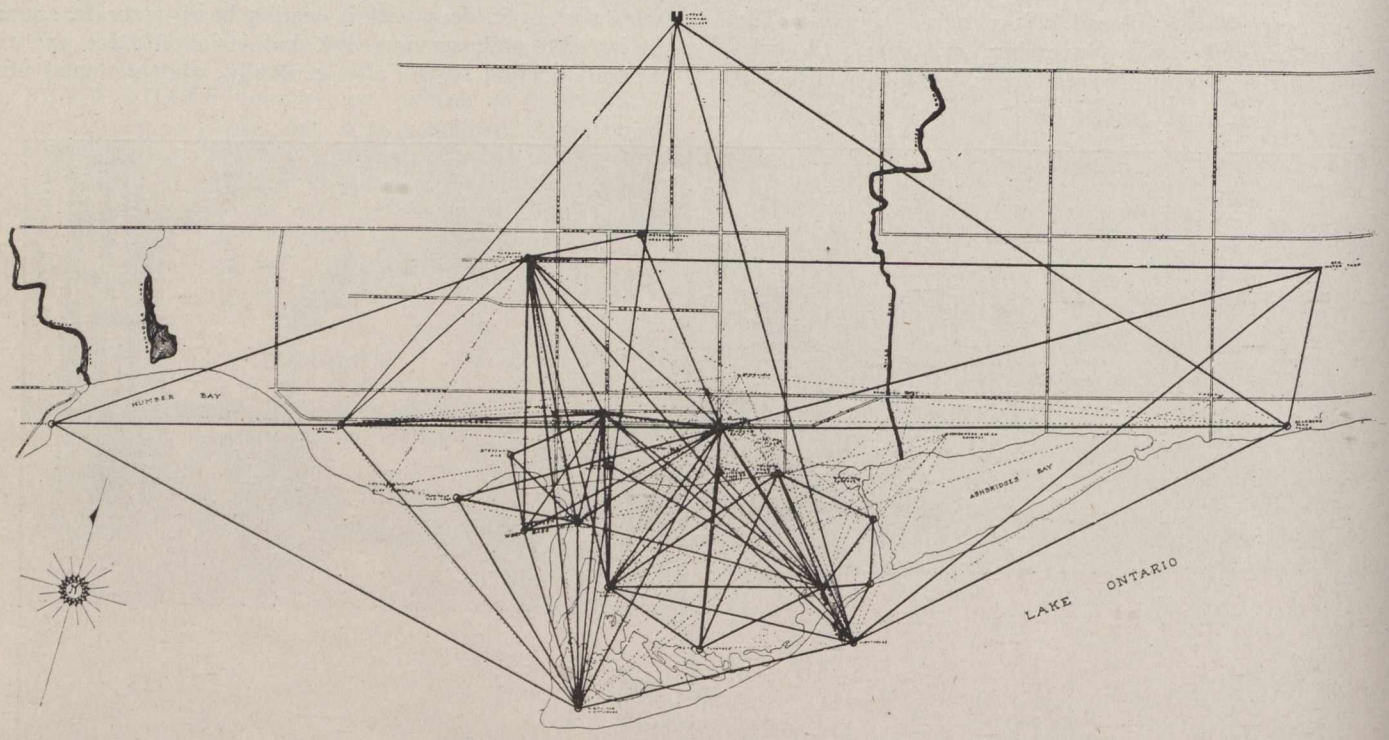
with a minimum width of 300 ft., separated from the lake by a breakwater; a bathing beach 1⅓ miles in length from Sunnyside to the Humber on a similar beach 4¼ miles in length from the Eastern Channel to Victoria Park; a boulevard system of driveways, etc., 11 miles in length across the waterfront; a protected waterway 12 miles in length with provision inside the breakwaters for equatic clubs; promenades, recreation piers, public playgrounds, etc., etc.

Preliminary plans were completed with the close of the year 1912. The general plans, providing for the development of the harbor and of the harbor industrial district, as well as for the general improvement of the outer waterfront and the construction of breakwaters for the purpose of protecting the waterfront east and west of the inner harbor were approved by the Toronto City Council and by the Federal Government in June, 1913. During the year substantial progress was made in the preparation of detailed working plans and a completion of arrangements for letting contracts and starting work. Dredging operations for the filling of the industrial district and the reclaiming of other lands were let by contract to the Canadian Stewart Company, Toronto, the minimum price being $3,950,000, with an option to increase the amount of dredging at the same unit price per cubic-yard up to a total of $6,320,000. A contract was also let by the Government to the same company for the construction of a breakwater extending from Woodbine Avenue to the Eastern Channel and another extending from the Western Channel to the Humber River, together with the construction and dredging of the ship channel in the industrial district, the total contract calling for an expenditure of $5,371,372.17. The Government also undertook the construction of lift bridges across the eastern and western entrances to the harbor and across the ship channel in the industrial district, but contracts for this portion of the work have not yet been let.

Another important event of 1913, which is more or less inter-connected with the progress of the harbor work, was the agreement between the city, the Harbor Commissioners and the various railways for the separation of railway and highway grades across the Toronto waterfront by means of a viaduct. On July 29, 1913, an agreement was finally executed and confirmed by the Board of Railway Commissioners for Canada. This agreement affected the Harbor Commission in the matter of property rights along the waterfront.

During 1913 the hydrographic and land surveys commenced in the previous year were completed with the exception of the detailed survey of Toronto Island. This latter work was held over for 1914. A very important undertaking of the Surveys Department consisted of a careful delineation of the amount of land owned by the Commissioners; *i.e.*, property surveys. For the most part, these lands are water lots with their northerly limit an old shore line whose exact position in most cases had never been thoroughly surveyed or tied in. This, combined with the fact that very few lines could be ranged or chained, being mostly over water or marsh, but that all the field work had to be done by offsets or by traverse, engendered a multiplicity of calculation with an attending greatly increased chance of error, made the progress of the work somewhat slow. Permanent monuments were placed to define the ground limits of the Commission. These monuments consist of 3-inch iron pipe filled with concrete, in the top of which is embedded a 5-inch hexagonal plate bearing a serial number and the name "Toronto Harbor Commissioners." The pipes range from 18 feet long in marsh to 3 feet in length where bolted to bare rock. In general, the tops are level with the grade adopted for the waterfront improvements.



Triangle Net of Main Triangulation.

During the year, also, a valuable series of water tables and fluctuations of Lake Ontario since 1853 was compiled, as a result of which the elevation of the zero of the Harbor Commissioner's gauge was found to be 245 ft. above mean sea level of New York. The determination of this elevation was followed by the placing of a comprehensive set of levels and bench marks across the