The northern part of Balikpapan these days is an area with a relatively large green open space. This large space will be developed into a citizen residence in the future. One of the upcoming residence area to be built is Grand City Balikpapan. The Grand City Balikpapan is planned to be built on a 2,147,688 m$^2$ space with residence area of 910,889 m$^2$. The Grand City area is planned to have a lake as big as 56,465 m$^2$, which is located around the urban forest and business district. Due to the complexity and its immense drainage system, the design in this final project will only include block Q, N and the business district of BD as large as 114,083 m$^2$.

The completion concept which is applied in the drainage system of Grand City Residence Balikpapan is to design the drainage channel based on the elevation of maximum water level and the retarding basin with back-water analysis. Also some amount of runoff water which runs into the area will be accommodated temporarily in the retarding basin to reduce the load on the lake.

From the computation analysis the dimension of tertiary, secondary, and primary channel are known with various size. The tertiary, secondary and primary channel will head into its downstream end in a lake and river. The designed retarding basin which is planned to accommodate some runoff water will be as
big as 3037.5 m². The retarding basin is designed with a sluice which is used to channel the water out of the retarding basin.

Keyword : Change of land use, Residential drainage system, Grand City Balikpapan.