ABSTRAK

The rapid economic growth that is marked by the development of industry, settlement, expansion of urban areas led to the increasing need for the smooth transportation of raw materials and industrial centers to the area of Marketing. Kertosono - Mojokerto Highway Development Plan is a Government program in anticipation of traffic growth in Mojokerto and Jombang where the toll road will connect with Surabaya - Mojokerto Highway.

According to the plan, the Surabaya-mojokerto toll road need some of bridge construction, the brantas bridge is one of them that located at the kertosono-mojokerto toll segment.

Brantas bridge is planned using prestressed concrete box girder structure with balanced cantilever method. Existing design of the bridge cross section is less effective and not optimal. Therefore, the authors are interested in re-plan the bridge by optimizing the design of the bridge cross section to obtain efficient results. The problem that arises is how to get the design of the cross section and the joints between the segments to produce a continuous partial structure.

The code used in this final project are SNI T-02-2005 and SNI T-12-2005. The results of this redesign is the final drawing of the plan of bridge girder and bridge under structure.
Keyword: Prestress girder, box girder, balanced cantilever, segmental.