ABSTRACT
Cable stayed bridge already widely used in the construction field, especially for long-span bridge structure. The structure of the cable bridge with a main beam as the bridge deck and the cable as the main supporting structure associated with the tower or pylon, in addition to assessed more in terms of aesthetics, the selection of the cable bridge is considered more economical and accessible in the planning stages.

This final project contains modification design of Kalimujur Bridge which will be a cross point between Pasirian and Wotgalih south across Mujur River, Pasirian, Lumajang, East Java Province. This bridge has a total span of ±320 m long divided into two side spans each 40 m and a central span 240 m long, with a width of 21,4 m vehicle floor (4/2D). Materials that make up the bridge deck is prestressed concrete and the pylon is reinforced concrete. The cable and the anchorage we use VSL 7-wire strand. Modifications of Kalimujur bridge with cable stayed system using a single pylon in the mid-span and using single plane system Harp-pattern for supporting cable arrangement.
The results of this final project is to obtain dimensional structure of bridge deck, supporting cables, pylon, by referring to rules RSNI T-02-2005, BMS '92, and SNI 03-2847-2002. While the calculation is aided by a computer program MIDAS CIVIL 2006. At the end of this final section will produce designs deck, cables and pylon with details of its reinforcement.

**Keyword**: Cable-stayed, Single plane, Harp-pattern, Modifikasi