

## ABSTRACT

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### DESIGN OF PRESTRESSED CONCRETE BRIDGE BY USING MAGNEL'S DIAGRAM METHOD WITH A HELP OF SELF-MADE COMPUTER PROGRAM

(xv + 95 pages : 9 tables, 52 figures, 14 appendixes)

Prestressed concrete is now commonly used compared to ordinary reinforced concrete. The tensile-stresses free cross sectional area of the beam on a prestressed concrete is utilized more efficiently. Prestressed concrete allows the using of smaller dimension and also gives lighter weight.

Despite the advantages it has offered, the design procedure of prestressed concrete is somewhat more complicated than reinforced concrete. Fortunately, Magnel diagram can be used to simplify the calculation. Using graphical solution, formed by four lines the final stress can be estimated from the angle of lines.

This final thesis will be explaining how to obtain Magnel's diagram using simple program created with Visual Basic. This software is fully graphical user interface which makes it is easier to use.

References : 9 (1983-2001)