

*ANALYSIS AND DESIGN OF REINFORCED DECK  
GIRDER BRIDGE*

*Thesis*

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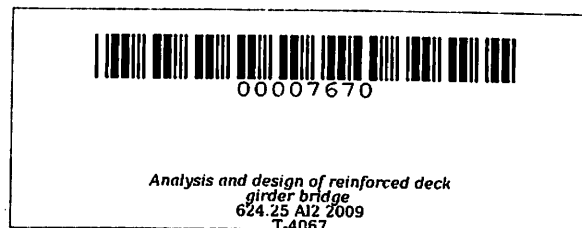
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**ANALYSIS AND DESIGN OF REINFORCED DECK GIRDER BRIDGE**

**Undergraduate Thesis  
Submitted to the Faculty of the  
Cavite State University  
Indang, Cavite**

**In partial fulfillment  
Of the requirements for the degree of  
Bachelor of Science in Civil Engineering**



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## **ABSTRACT**

**ALEGARME, GRACE P. and GUEVARRA, MICHELLE A. Analysis and Design of Reinforced Deck Girder Bridge.** Undergraduate Design Project. Bachelor of Science in Civil Engineering. Cavite State University, Indang, Cavite. April 2009. Adviser: Engr. Marcelino A. Dagasdas Jr.

A deck girder bridge is a common design of bridge. It is supported by two or more longitudinal girders (beams). Decks are supported on the top of girders are usually timber but may be concrete or steel. The bridge was design using the most economical section and material. It has a span of 10m, 15m, 20m, and 30 meters with two and four lanes.

The MS-45 type of loading with semi trailer was used. Tabulated data was provided that will showed the structural element of reinforced deck girder bridge with their variable length and width. The total estimated cost of different span and width was provided as well as the number of bars that is needed for the various span was indicated. The ultimate strength design was used.

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# **ANALYSIS AND DESIGN OF REINFORCED DECK GIRDER BRIDGE<sup>1/</sup>**

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## **INTRODUCTION**

Bridges plays an important role in the transport network. They account for only short sections of road however they provide a convenient way of joining two inaccessible areas. For this reason they are used to cross rivers, creeks and other roads such as in the construction of overpasses on freeways. Bridges can range from small unnoticeable structures to large impressive man made engineering wonders that are recognized worldwide.

Versatile and strong materials are needed in the construction of bridges. The most common of these materials today are reinforced concrete, prestressed concrete and steel. Reinforced concrete in particular is very popular in the construction of small bridges since it is very simple to construct a concrete deck that is supported by girders.