

## I. IDENTIFICATION INFORMATION

<b>Title of the thesis:</b>	<b>Chiche Bridge Design</b>
<b>Name of the Author:</b>	<b>Manolo Mendizabal Melo</b>
<b>Type of the thesis:</b>	Diploma thesis
<b>Faculty:</b>	Faculty of Civil Engineering
<b>Department:</b>	Department of Concrete and Masonry Structures
<b>Opponent of the thesis:</b>	Ing. Radek Hájek, Ph.D.
<b>Opponent's employer:</b>	Mott MacDonald CZ, spol. s r.o.

## II. ASSESSMENT OF THE THESIS

<b>Assignment</b>	<b>average difficulty</b>
<i>Assessment of the level of difficulty of the assessment of the thesis.</i>	
The assignment is a typical one for a master degree final thesis. It included state-of-the art in prestressed concrete bridges and design and assessment of a designed bridge including analysis of construction stages.	

<b>Fulfilment of the assignment</b>	<b>fulfilled</b>
<i>Assess whether the submitted final thesis meets the assignment. In the comment, please specify the parts of the assignment that have not been fully met or whether the work exceeds the assignment.</i>	
The assignment was fully fulfilled. The thesis included the description of design approach, study of similar already built structures and basic assessment of the designed structure. The assessment was limited to check of stresses during construction stages. Final structure was not fully assessed according to the design standards. Basic check of ULS bending and shear capacity of the final structure could have been provided.	

<b>Approach to the solution</b>	<b>correct</b>
<i>Assess whether the student has chosen the correct approach to the solution.</i>	
The solution corresponds with the assignment. First part provides the necessary background for the design of a structure. The design of construction sequence was carried with the correct approach.	

<b>Professional level</b>	<b>D - satisfactory</b>
<i>Assess the level of expertise of the thesis, the use of the knowledge gained during the study and the use of resources. Also assess student's ability to perceive the task in a broader context and to apply an engineering approach.</i>	
The thesis builds on basic understanding of behaviour of structures. Professional level is undermined by poor language. Discussion of obtained results was not comprehensive enough in some cases. The author had to use advanced software analysis of construction stages without sufficient prior knowledge, but learned from the results, identified the problems and finally arrived to a solution with an iterative trial-and-error approach.	

<b>Formal and language level, comprehensibility of the thesis</b>	<b>E - sufficient</b>
<i>Assess the correct use of formal entries in the work. Assess the typography and language of the work and its overall comprehensibility.</i>	
The language level is very poor. The meaning of some parts of the text still remains a mystery for the opponent. Formally the thesis is well organised, some figures are not readable. Formal level of the drawings included in Annex A to G is very poor.	

<b>Selection of resources, correctness of quotations</b>	<b>D - satisfactory</b>
<i>Review the selection of resources. Verify that citation ethics has not been violated and that bibliographic quotes are complete and in accordance with citation practices.</i>	
List of resources show sufficient number of articles, design standards and other sources, however it is hard to determine the source of information due to the absence of distinguishable quotations. References to quotes do not comply with any of the commonly used standards. The amount of quoted text couldn't be assessed correctly.	

**Additional comments and evaluation**

Due to the lack of knowledge/experience, the author designed some parts of the structure not corresponding with the common practise, recommendations or design criteria for concrete cover, wall thickness etc. On the other hand, the amount of work that has been done is substantial.

**III. OVERALL EVALUATION, QUESTIONS FOR DEFENCE, SUGGESTED CLASSIFICATION**

*Summarize the aspects of the final thesis that most influenced your overall assessment. Specify any questions the student should answer in defence of the final thesis before the commission.*

The professional level of the thesis is sufficient for defence, but significantly undermined by very poor language skills and limited time to cover complex design of prestressed bridge built with cantilever erection method without prior experience.

During the defence of the thesis, student should be able to answer the following questions:

1. Show the bending moment diagrams for some construction stages during erection of the bridge, mainly for the stages before and after the casting of the last segment. How does the bending moment change directly after the casting of the last segment?
2. How will the long term behaviour of concrete (creep) influence the bending moment from permanent and live loads? Compare moment diagrams after casting and at the end of service life.

I hereby evaluate the final thesis with the grade **D – satisfactory**.

Date: 4.2.2018

Signature:

