HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF A PUMPING STATION

ANDRI POULLI

M / 828

JULY 1998

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by

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Project Report

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Dedicated to my Parents, my brothers
Joseph, Dinos and Doros and my sister
Elena for offering so much.

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SUMMARY

This project discuss briefly the various classes and types of pumps and describes the operation of various typical examples of them.

The main objectives of the project is the quide which gives all the informations required in the form of steps, for pump selection. It also gives the necessary informations for pump installation, commisioning, maintenance, accompanied with relevant drawings.

Informations are applied for the design of a pumping station which will be used for the irrigation of a certain area. The suitable pipes and pumps sizes are selected.

As soon as you reach at the end of the project you will be able to select and install the appropriate type of pump and piping system without difficulty.

CONTENTS

CHAPTER 3 - DESIGN OF THE PUMPING STATION

CHAPTER 4 - INSTALLATION

INTRODUCTION

Historical

It can rightly be claimed that no machine and very few tools have had as long a history in the service of man as the pump, or has broad a need in his life. Every process which underlies our modern civilization involves the transfer of liquids from one level of pressure or static energy to another. Thus pumps have played an essential role in our life ever since the dawn of civilization.

The raising of water has been one of man's earliest needs and indeed the first call for ingenuity in providing power, arise from pumping duties. The earliest devices for lifting water are still in operation in India, Egypt e.t.c.

A typical example is the basket lowered into a river by means of a balance beam, or in a later development by a pulley rope. Such devices would appear to be as old as man himself.

A definite step forward in the mechanisation of pumping was the development of lifting wheel to an irrigation channel, the wheel being propelled by primitive gearing which in turn is driven by animal or human power.

A later development is to be found in the self propelled wheels which are a combination of an outer water wheel driven by the river flow and an inner wheel having buckets which lift water from the river to an irrigation channel.