CHAPTER ONE

1.1 Introduction

Bridges are structures that generally perform a single but major function that of providing a simple means to "Cross" or "reach" between two points separated by a deep valley, a river, a high way or the like[3].

In spite of their unique common purpose bridgesare each characterized by particular site conditions and other factors that may dictate the type of design and construction solution selected. Such factors include the span length and size construction or fabrication, site profile, importance of the bridge and cost.

Most bridges are designed to carry vehicles and people for which they offer a flat riding or walking surface called the deck. In its simplest form. the deck of abridge, as in the case of a one way slab bridge, acts as a simple flexural element.

The design and construction of bridges is a specially by itself. It involves not only the deck but also other essential elements, such as piers, abutments, foundations, connections and bearings and the like. Building a bridge may take a long time and can be a unique experience. Each project generates particular problems and corresponding solutions which add to the sum of existing knowledge.

Prestressed concrete has proved to be technically advantageous economically competitive, and esthetically superior for bridges, from very short span structures using precast standard components to cablestayed girders and continuous box girder with clear spans of nearly 305m. Nearly all concrete bridges, even those of relatively short span, are now prestressed. Precasting, cast-in place construction, or a combination of the two methods may be used.