ACKNOWLEDGEMENT

First and foremost the author is highly grateful to his respected supervisor Dr. M. G. Rajendran, Professor of Civil Engineering, Karunya Institute of Technology, for his constant support, guidance, continuous inspiration, encouragement and valuable suggestions to accomplish this work.

The author is indebted to Dr. R. Sundararajan, Professor and Head of Civil Engineering, Government College of Technology, Coimbatore, Dr. G. Sankara Subramanian, Professor of Civil Engineering, P. S. G. College of Technology, Coimbatore and Dr. G. Prince Arulraj, Director of School of Civil Engineering, Karunya Institute of Technology and Sciences, Coimbatore for their continuous monitoring of the research work during the entire course of work.

The author is grateful to the Management of Karunya Institute of Technology and Sciences, Coimbatore and to the Management of Bannari Amman Institute of Technology, Sathyamangalam for providing necessary facilities to complete the work.

The author is thankful to Dr. S. Rajasekaran, Professor in Infrastructure Engineering, PSG College of Technology, Coimbatore for offering useful discussion and constructive criticism during the entire course of research work.

The author is thankful to Dr. M. T. Nicholas, former Principal and Dr. S. Alexander, former HOD of Civil Engineering, Mr. S. Justin, Asst. Professor of Civil Engineering and all teaching staff of Civil Engineering, Karunya Institute of Technology and Sciences for their useful discussion and author’s family members for their cooperation and support.

J. RAJA MURUGADOSS