ACKNOWLEDGEMENT

The author expresses his heartfelt gratitude and sincere thanks to Dr. G.M. Samuel Knight, Professor of Civil Engineering for his invaluable guidance, suggestions, moral support and constant encouragement throughout the period of this research work.

The author is grateful to Dr. R. Ambalavanan, Professor of Civil Engineering, Indian Institute of Technology, Madras and Dr. V. Murugesan, Professor of Chemistry for their constant advices and suggestions during periodic Doctoral Committee meetings. The author thanks Dr. A.M. Thirumurthy, Former Professor and Head, Department of Civil Engineering, Dr. V. Shanmugasundaram, Professor and Head, Department of Civil Engineering and Dr. M. Sekar, Chairman, Faculty of Civil Engineering for permitting him to use departmental facilities. The author also thanks Dr. P. Devadas Manoharan, Professor and Head, Division of Structural Engineering, Dr. E. Arumugam, Professor of Civil Engineering for permitting him to use the laboratory facilities at all odd hours.

The author also expresses his gratitude to Dr. S. Rajendran, Assistant Professor of Chemistry, Dr. V. Raman, Mr. S. Nagarajan and Mrs. M. Karthega, Research Scholars, Madras Institute of Technology, Chrompet, Chennai for their constant help during the conduct of experiments. Special thanks to Post-graduate students and non-teaching staff of Structural Engineering Division for their help. The author is extremely thankful to his mother, wife Mymoon, sons Dawood and Umar, daughter Hasna for their patience, encouragement and support.

M.S. HAJI SHEIK MOHAMMED