ACKNOWLEDGEMENTS

The author expresses his deep sense of gratitude to Dr. M. V. Jayanadha Rao for suggesting this interesting problem and for his valuable guidance, suggestions and sustained encouragement throughout the period of investigation and preparation of the thesis.

The author records his sincere thanks to Prof. D. Mohan Rao for his constant encouragement and interest shown in the investigations reported in this thesis.

The author wishes to acknowledge the help received from Prof. P. Venkatraman and Dr. M. Y. A. Baij of the Department of Civil Engineering. The author thanks Professor C. Venkatramaiah, Principal and Prof. K. Krishna Murthy, Head of the Department of Civil Engineering for their encouragement.

The author is also thankful to the staff of the Hydraulic Engineering Laboratory for the assistance rendered during the investigations.

Sincere thanks are due to Mr. R. Sambala for typing the thesis and to Mr. M. Thiruvengadam for preparing the drawings.
The author is thankful to the authorities of the Sri Venkateswara University for providing the necessary facilities for conducting the investigations.