

ENGINEERING  
HANDBOOK

# hydraulics

section

5

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE



## PREFACE

This handbook is intended primarily for the use of Soil Conservation Service engineers. Much of the information will also be useful to engineers in other agencies and in related fields of work.

The aim of the handbook is to present in brief and usable form information on the application of engineering principles to the problems of soil and water conservation. While this information will generally be sufficient for the solution of most of the problems ordinarily encountered, full use should be made of other sources of reference material.

The scope of the handbook is necessarily limited to phases of engineering which pertain directly to the program of the Soil Conservation Service. Therefore, emphasis is given to problems involving the use, conservation, and disposal of water, and the design and use of structures most commonly used for water control. Typical problems encountered in soil and water conservation work are described, basic considerations are set forth, and all of the step-by-step procedures are outlined to enable the engineer to obtain a complete understanding of a recommended solution. These solutions will be helpful in training engineers and will tend to promote nation-wide uniformity in procedures. Since some phases of the field of conservation engineering are relatively new, it is expected that further experience may result in improved methods which will require revision of the handbook from time to time.

The handbook material has been prepared by M. M. Culp, Head of the Engineering Standards Unit of the Engineering Division, and his associates, Woody L. Cowan and Carroll A. Reese, under the general direction of the Engineering Council. The Council is made up of the regional engineers and the Chief of the Engineering Division at Washington. Under its direction the needs of engineers in all parts of the country have been considered and are reflected in the subject matter selected, the method of presentation, and the organization of the different sections.

Many sources of information have been utilized in developing the material. Original contributions and verbatim use of previously published materials are acknowledged in the text.

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