

Urban Subsurface Drainage

Prepared by the Urban Drainage Standards Committee,
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Technical Activities Committee (TAC),
ASCE

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Abstract: *Urban Subsurface Drainage*, ASCE Manuals and Reports on Engineering Practice No. 95, was prepared by the Urban Drainage Standards Committee, Water Resources Standards Council, Codes and Standards Activities Committee, and Technical Activities Committee of the American Society of Civil Engineers. This manual provides guidance in the planning, design, construction, and operation and maintenance of urban subsurface drainage systems. Within this framework, the manual discusses such topics as: 1) system configuration including collection system components; 2) hydraulics and hydrology; 3) drain envelopes; 4) loads and pipe behavior; 5) pipe materials; 6) contract documents, codes, and permits; 7) installation methods; and 8) operation and maintenance plan development. Engineers should use this manual of practice as a complement to three standards (ANSI/ASCE 12-92, *Standard Guidelines for Design of Urban Subsurface Drainage*; ASCE 13-93, *Standard Guidelines for Installation of Urban Subsurface Drainage*; and ASCE 14-93, *Standard Guidelines for Operation and Maintenance of Urban Subsurface Drainage*) previously developed by the same committee.

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FOREWORD

The *Urban Subsurface Drainage Manual* was prepared by the American Society of Civil Engineers, Urban Drainage Standards Committee, Water Resources Standards Council, Codes and Standards Activities Committee (CSAC), and Technical Activities Committee (TAC). This Manual complements the three documents previously developed and published by the same committee:

- ANSI/ASCE 12-92, *Standard Guidelines for Design of Urban Subsurface Drainage*,
- ASCE 13-93, *Standard Guidelines for Installation of Urban Subsurface Drainage*, and
- ASCE 14-93, *Standard Guidelines for Operation and Maintenance of Urban Subsurface Drainage*.

The Agricultural Drainage and Subsurface Water Management Committee, Water Resources Engineering Division (formerly the Drainage Committee in the Irrigation and Drainage Division) was the original promoter of developing this Manual. In addition to preparing an initial draft document they also were instrumental in organizing the Urban Drainage Standards Committee. For publication purposes this Committee named Richard D. Wenberg as Technical Editor and appointed the Blue Ribbon Committee that provided final technical review and editorial activities. The Blue Ribbon Committee members are William R. Johnston, Walter J. Ochs, Dr. Kenneth G. Renard, Dr. William F. Ritter, and William L. Wales.

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