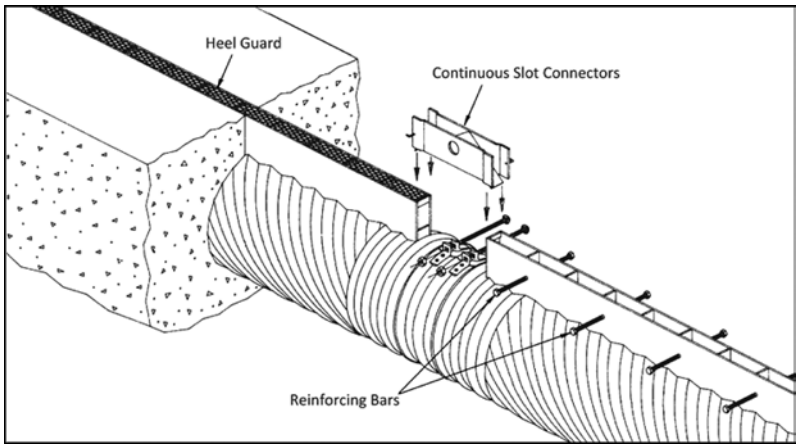
OPEN-TOP SLOTTED DRAIN PIPE

Technical Guide

CMP SLOTTED DRAIN GUIDE

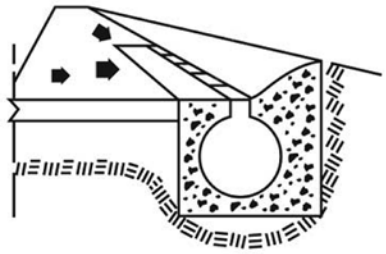


CMP SLOTTED DRAIN OFFERINGS
Pipe Diameters 12" through 36"
Pipe Thicknesses 16 and 14 Gage
Standard Slot Heights of 2½"and 6"
Variable Slot Heights*
Slot Width 1¾"
Corrugated Band Connectors
Heel Guard*
Continuous Slot Connector*

*when specified

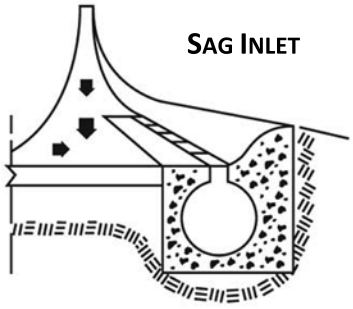
Slotted drain pipe is used for typical curb-and-gutter applications as an **on-grade opening**, at the bottom of a slope as a **sag inlet**, or as a **sheet flow intercept** for wide, flat areas. Figures A, B and C on the following page are used to determine the lengths of slotted drain pipe needed for a particular application and a design flow rate.

ON-GRADE OPENING



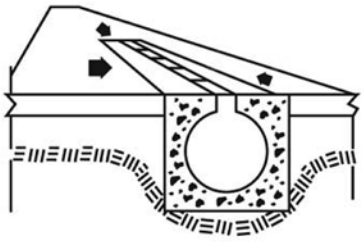
For a given cross slope (S_x) and longitudinal gutter slope (S) the required slotted drain pipe length can be determined for a given flow rate. A cost-effective practice is to carry up to 35% of the total flow to the next inlet. Figure C shows a carryover efficiency curve to utilize this practice.

SAG INLET



Where slotted drain pipe is installed at a low point or sag in the grade, the slotted length is calculated from the equation $L_R = 1401\ Q/d^{½}$. The depth of flow (d) is found from Figure A.

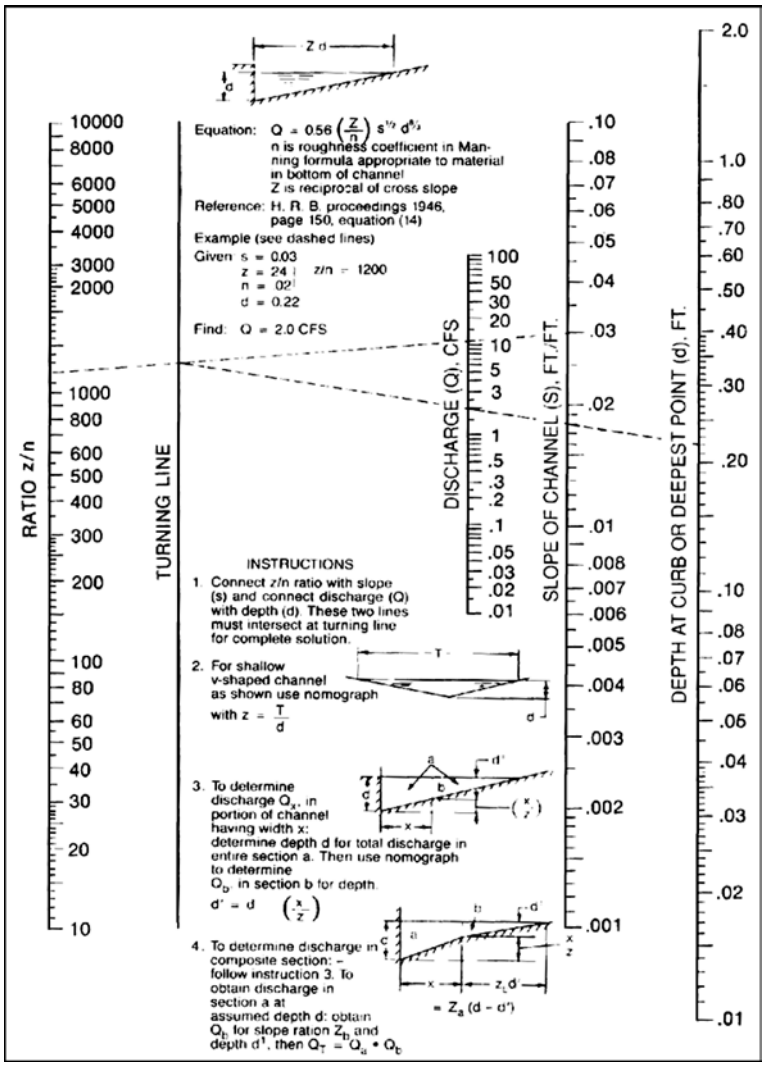
SHEET FLOW INTERCEPT

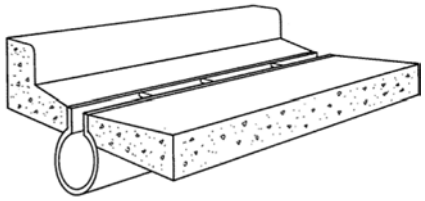


An effective use of slotted drain pipe is to intercept sheet flow from wide, flat areas (e.g. parking lots, airport terminals, highway medians, loading docks). The slotted drain pipe is placed transversely to the grade to intercept flow uniformly along its length.

INSTALLATION

Lengths of slotted drain pipe are placed, aligned and banded together in a prepared trench. Care is taken to make sure the slot matches grade throughout the alignment. The pipe is then encased in concrete or lean concrete grout up to the top of the pipe. The finish course of pavement is then installed up to the top of the slot.





TERMS AND DEFINITIONS

- **S** Longitudinal Gutter or Channel Slope (ft/ft)
- **S_x** Transverse Slope (ft/ft)
- **Z** Transverse Slope Reciprocal (ft/ft)
- **d** Depth of Flow (ft)
- **Q** Discharge (cfs)
- **L_R** Length of Slot Required for Total Interception (ft)
- **L_A** Actual Length of Slot (ft)
- **Q_D** Total Discharge at an Inlet (cfs)
- **Q_A** An Assumed Discharge (cfs)

FIGURE A. NOMOGRAPH FOR FLOW IN TRIANGULAR CHANNELS

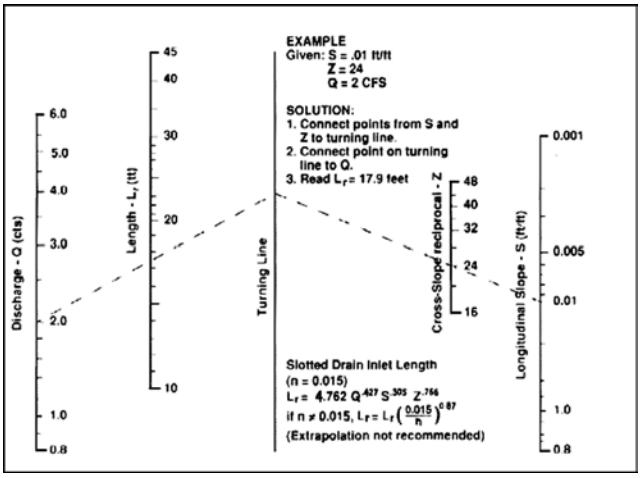


FIGURE B. DESIGN NOMOGRAPH

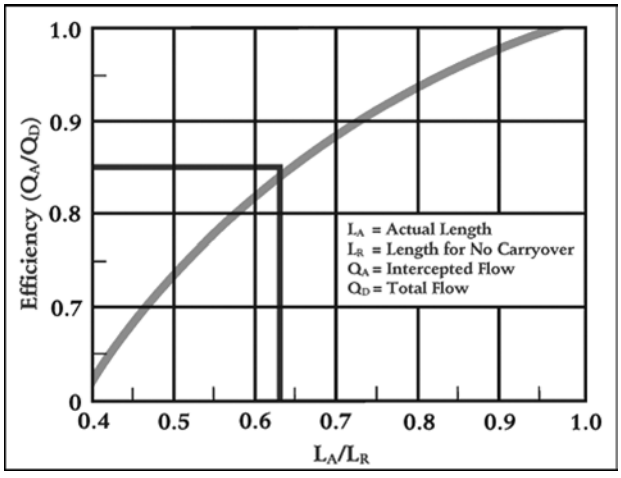


FIGURE C. CARRYOVER EFFICIENCY CURVE

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