APPENDIX H – DESIGN CHARTS

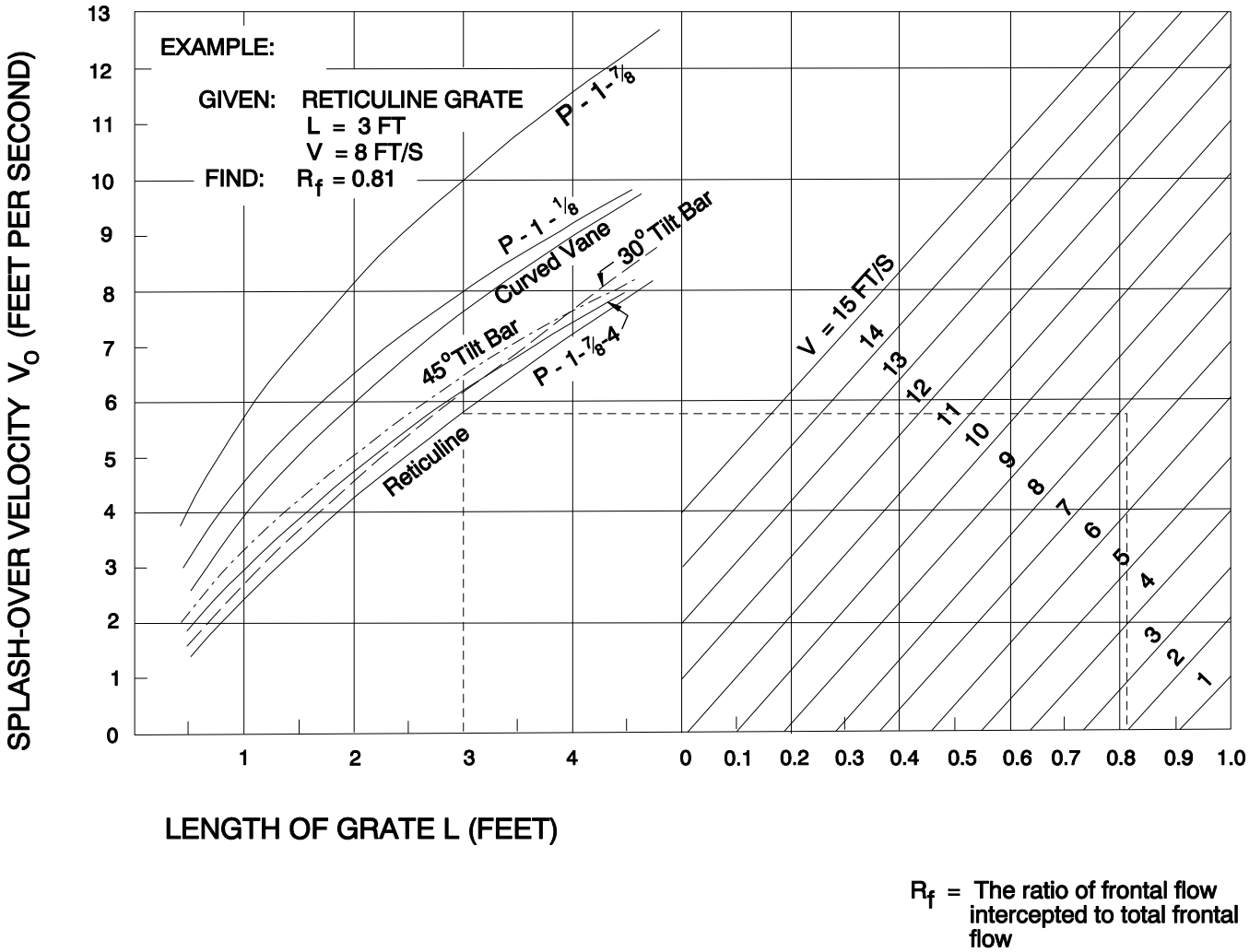


Chart 1 - Grate Inlet Frontal Flow Interception Efficiency

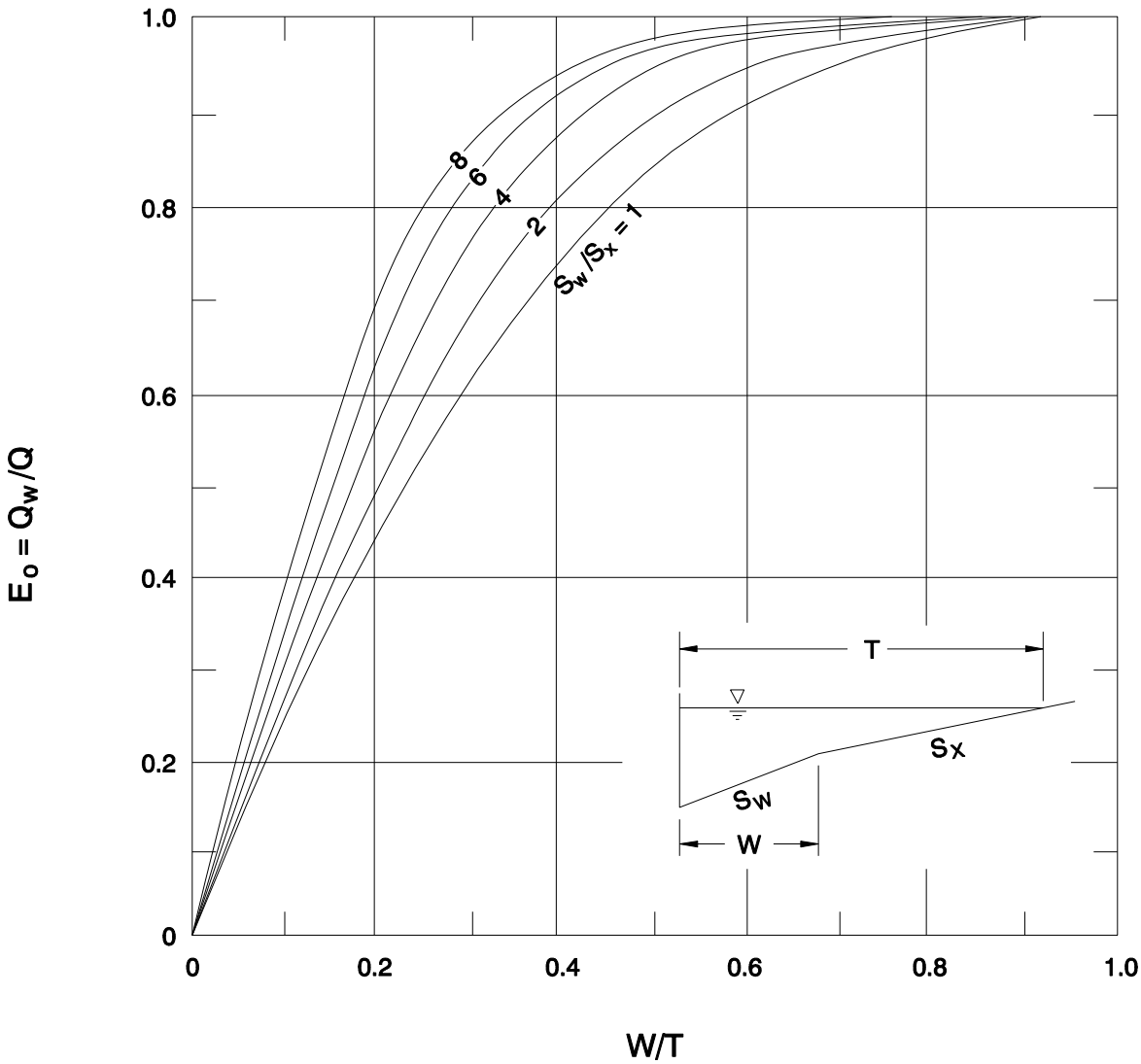


Chart 2 - Ratio of Frontal Flow to Total Gutter Flow

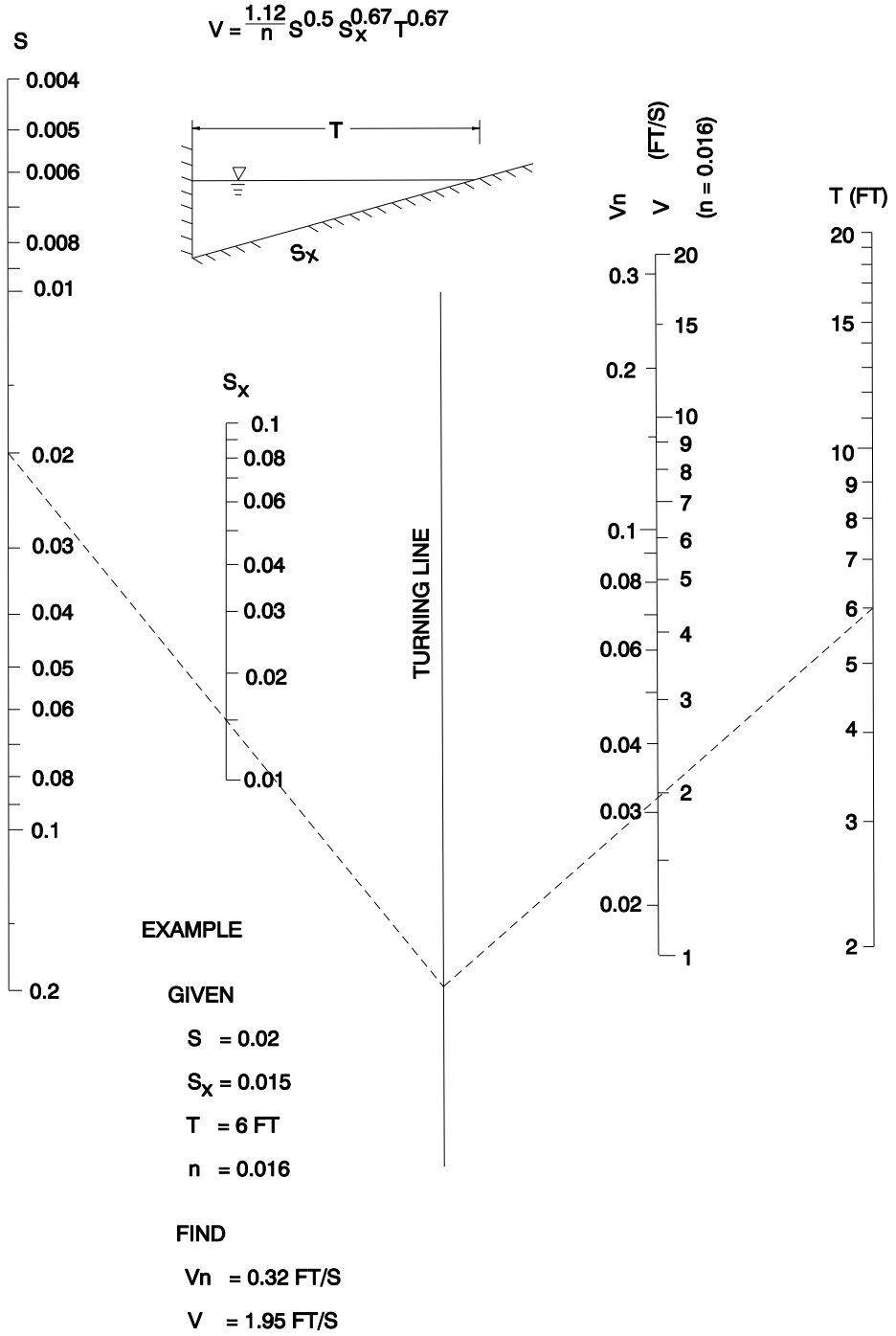


Chart 3 - Velocity in Triangular Gutter Sections

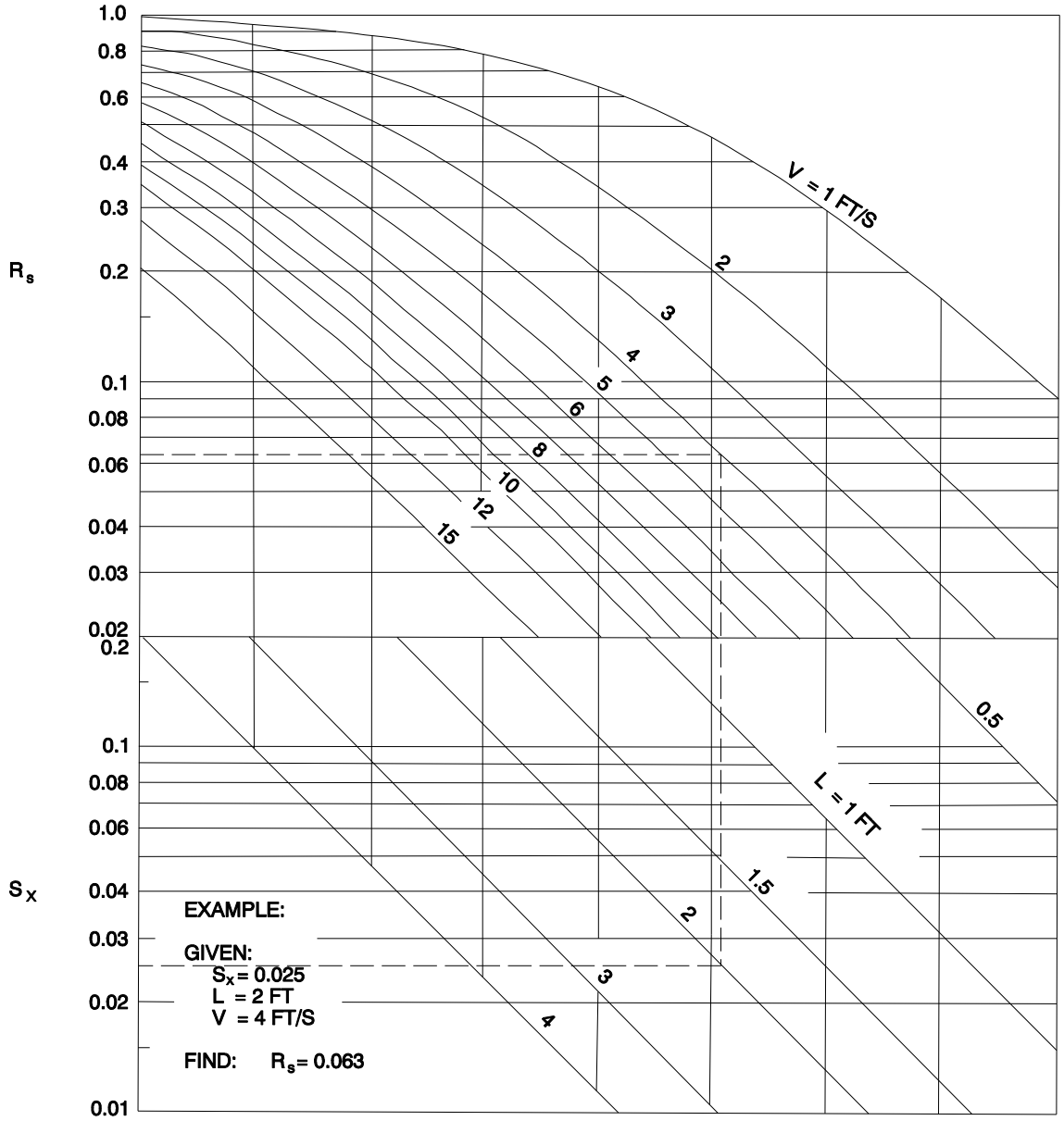
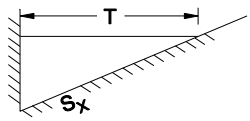


Chart 4 - Grate Inlet Side Flow Intercept Efficiency

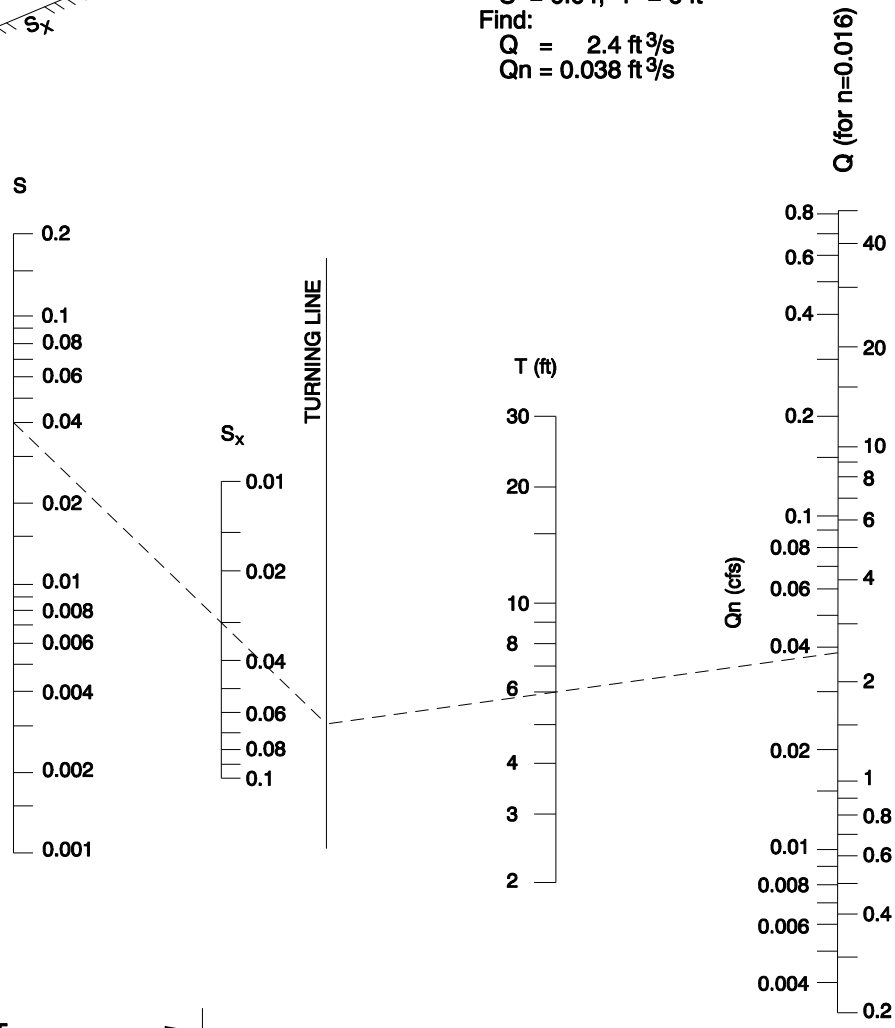
$$Q = \frac{0.56}{n} S_X^{1.67} S^{0.5} T^{2.67}$$

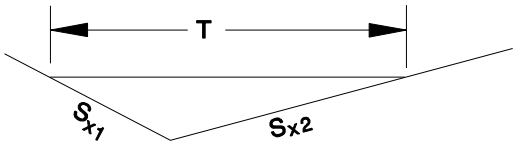


Example:

Given:
n = 0.016, S_X = 0.03
S = 0.04, T = 6 ft

Find:
Q = 2.4 ft^3/s
Qn = 0.038 ft^3/s





1) For V-Shape, use the nomograph with $S_X = S_{x1}S_{x2}/(S_{x1} + S_{x2})$

2) To Determine discharge in gutter with composite cross slopes, find Q_s using T_s and S_X. Then use Chart 2 to find E_o. The total discharge is $Q = Q_s/(l - E_o)$, and $Q_w = Q - Q_s$.

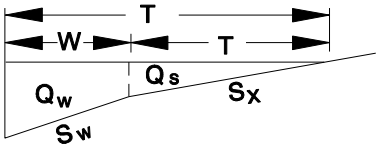
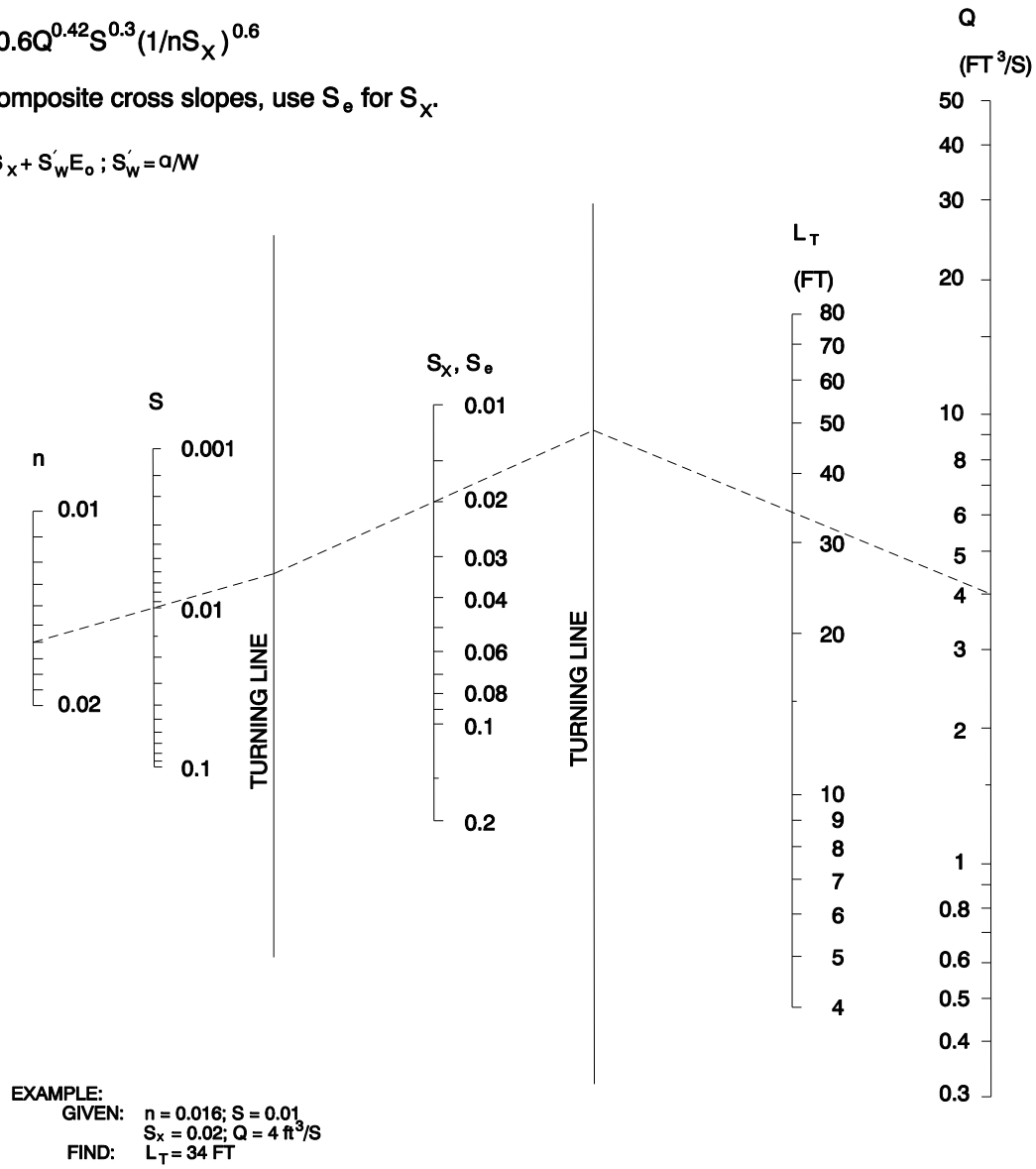


Chart 5 - Flow in Triangular Gutter Sections

$L_T = 0.6Q^{0.42}S^{0.3}(1/nS_X)^{0.6}$

For composite cross slopes, use S_e for S_X.

$S_e = S_X + S'_W E_o$; $S'_W = a/W$



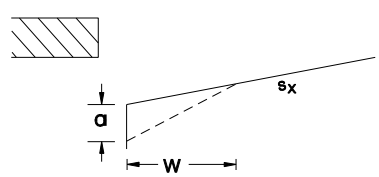


Chart 6 - Curb-Opening and Slotted Drain Inlet Length for Total Interception

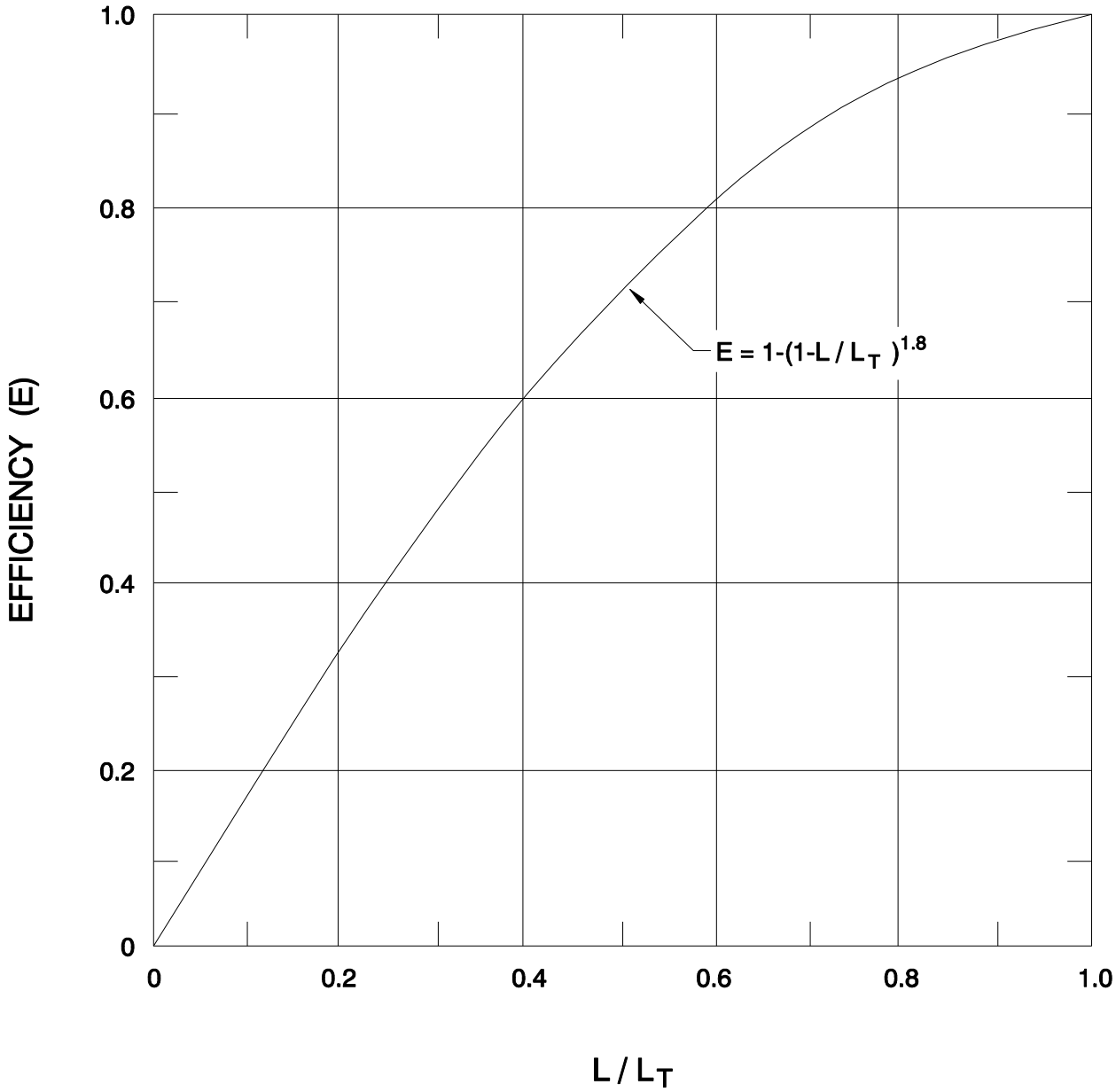


Chart 7 – Curb-Opening and Slotted Drain Inlet Interception Efficiency

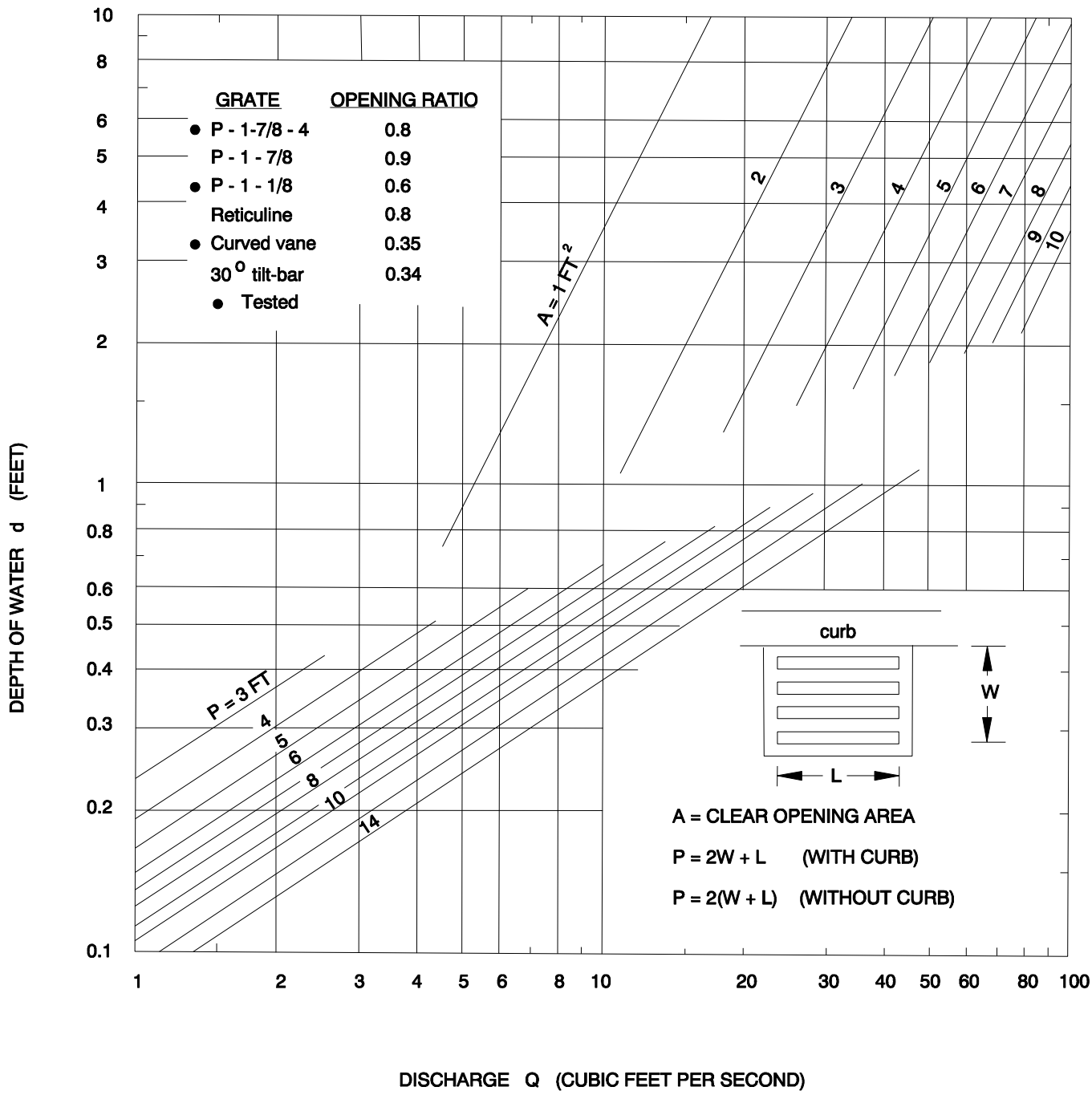


Chart 8 - Grate Inlet Capacity in Sump Conditions

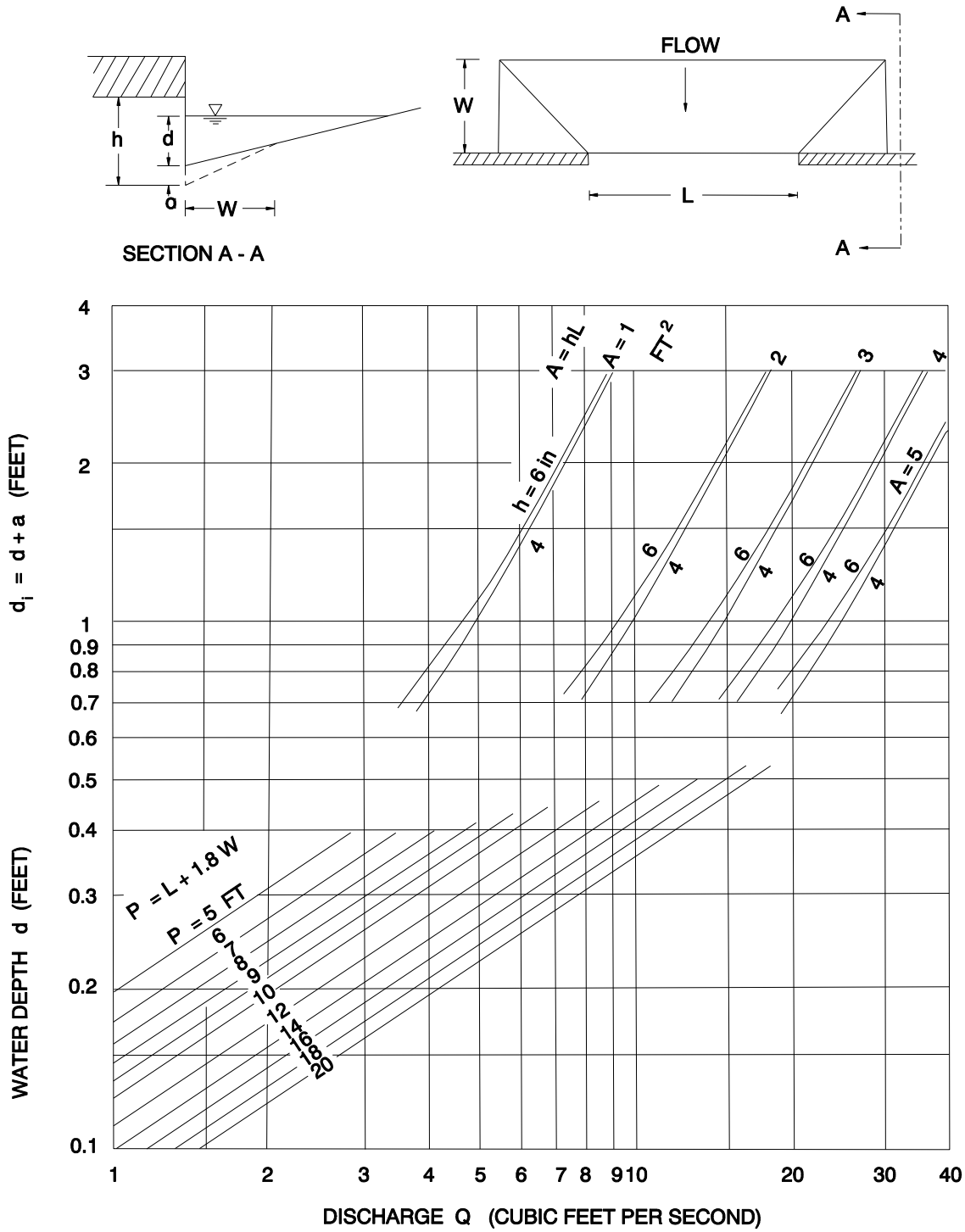


Chart 9 - Depressed Curb-opening Inlet Capacity in Sump Locations

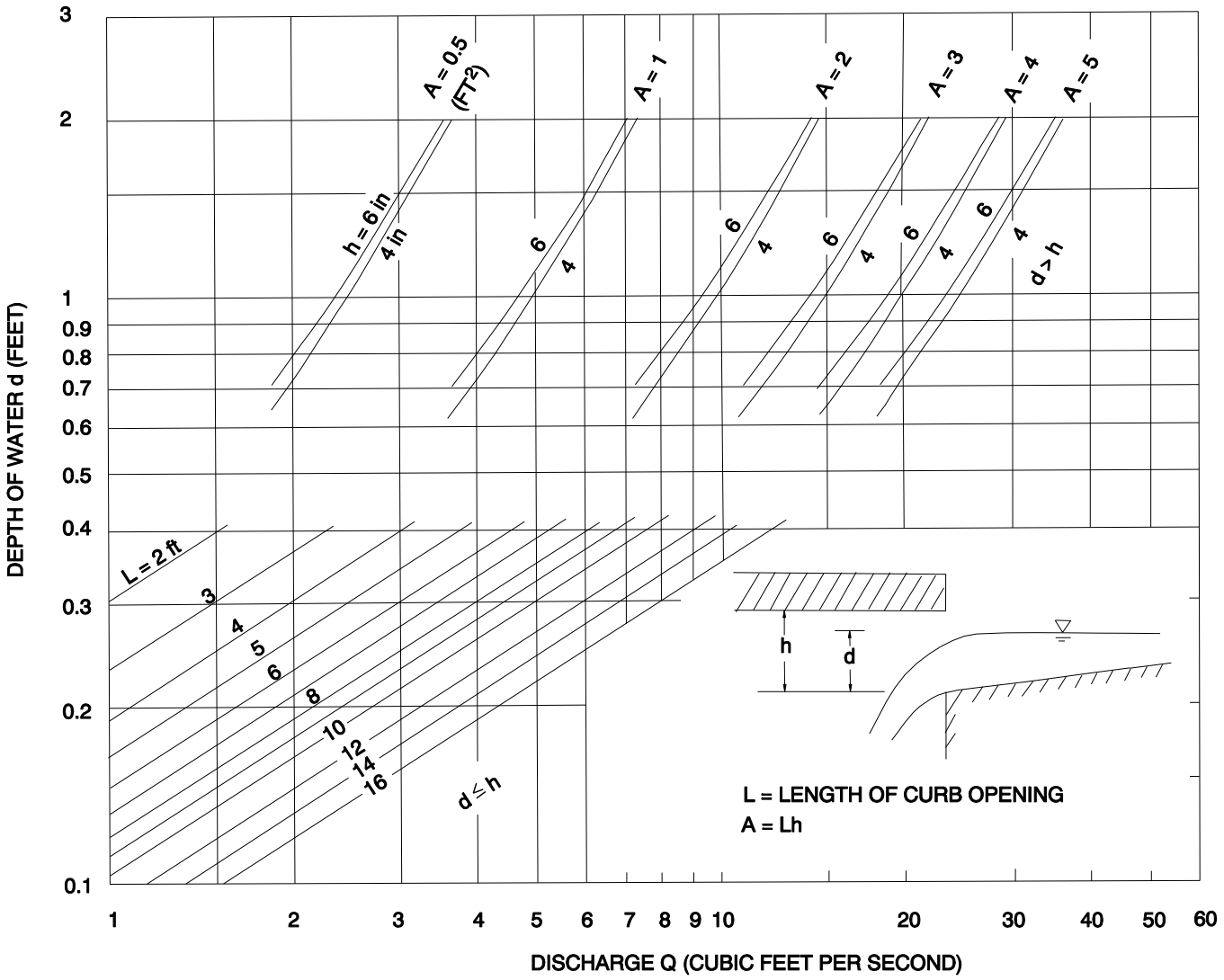


Chart 10 - Undepressed Curb Opening Inlet Capacity in Sump Conditions

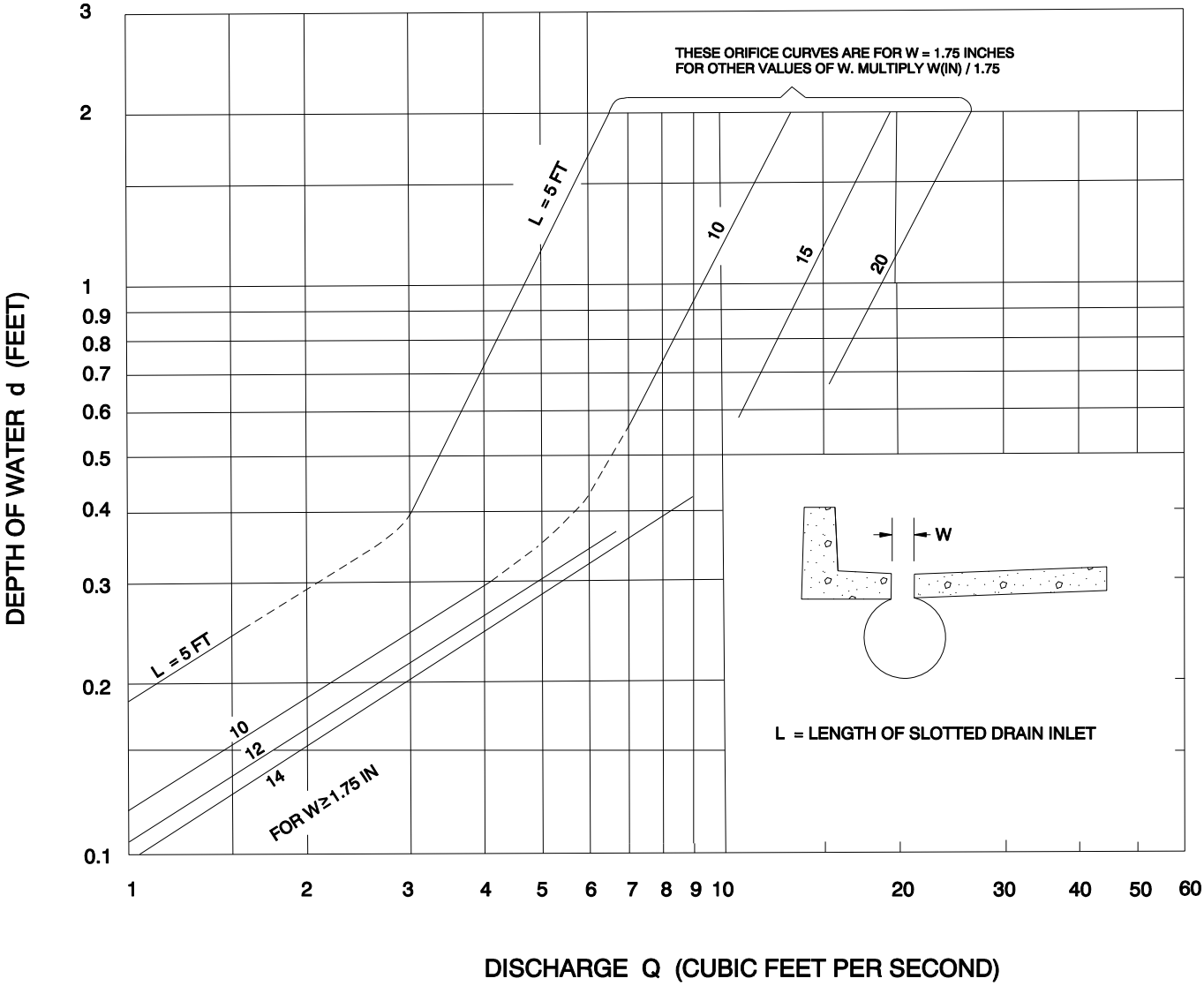


Chart 11 – Slotted Drain Inlet Capacity in Sump Location

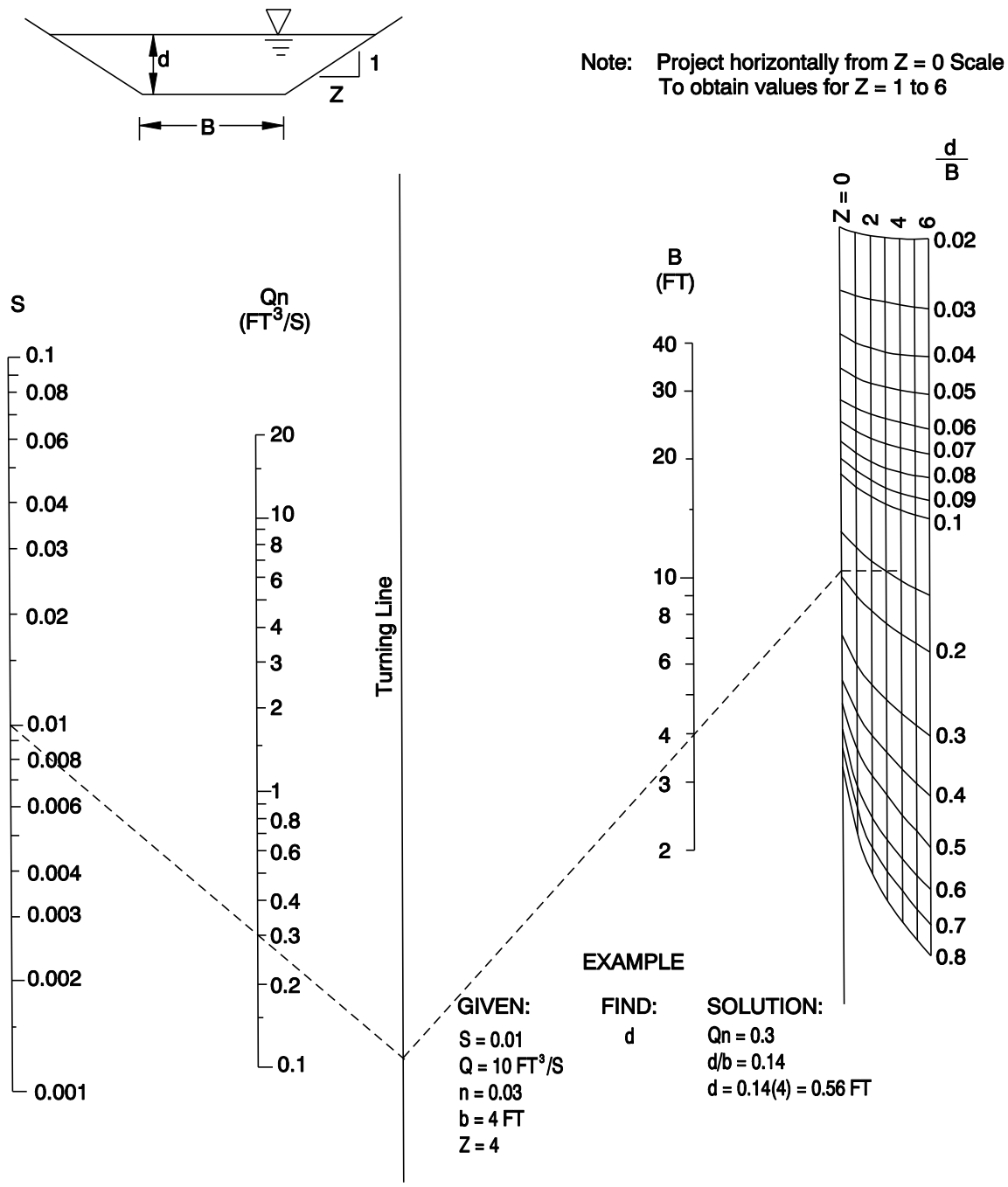


Chart 12 - Solution to Manning's Equation for Channels of Various Side Slopes

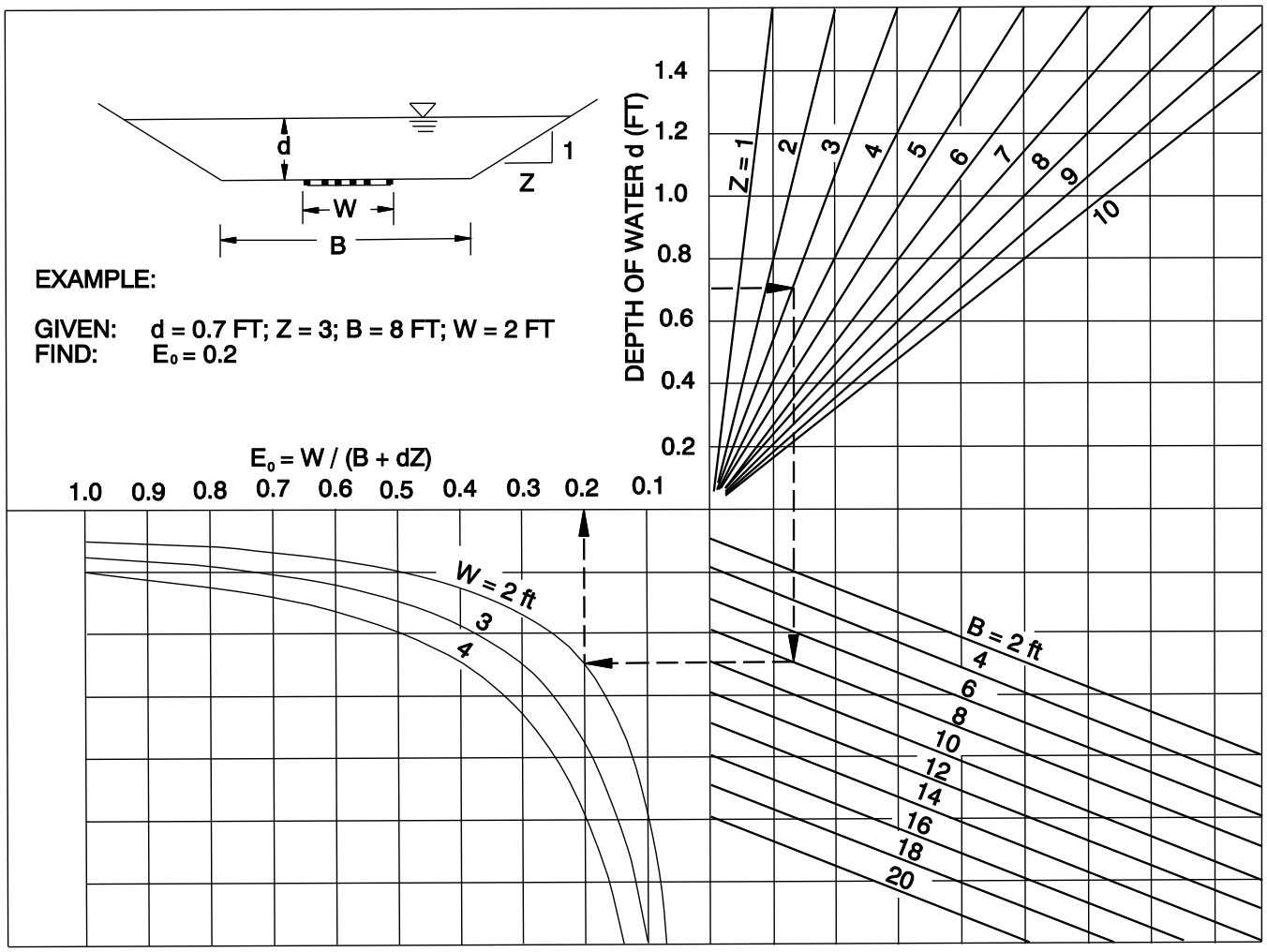


Chart 13 - Ratio of Frontal Flow to Total Flow in a Trapezoidal Channel