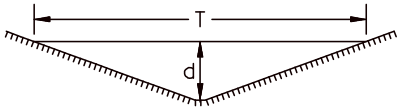
APPENDIX G
NOMOGRAPHS AND CHARTS FOR GUTTER FLOW & INLET DESIGN

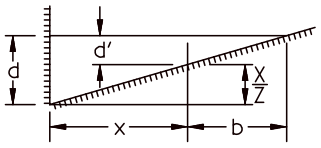
Instructions for Use

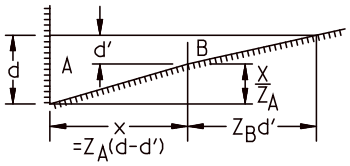
1. Connect $\frac{Z}{n}$ ratio with slope, s. Connect discharge Q with point where line crosses turning line. Read depth at curb d. Q can be found from d by connecting d with crossing of turning line.

2. 

For shallow V-shaped channel, use instruction 1, but with $Z = \frac{T}{d}$

3. To determine discharge Q_x in portion of channel having width x, determine depth for the entire section as in instruction 1. Then use nomograph to determine Q in section of width b for depth, $d' = d - \frac{x}{Z}$. Then, $Q_x = Q - Q_b$.



4. 

To determine discharge Q_T in composite section, follow instruction 3 to obtain discharge Q_A in section A at assumed depth d based on an extension of slope ratio Z_A to intersect water surface. Obtain Q_B for slope ratio Z_B and depth d' where $d' = d - \frac{x}{Z_A}$. Then $Q_T = Q_A + Q_B$.

Exhibit G.1 Use of Nomograph for Flow in Triangular Channels

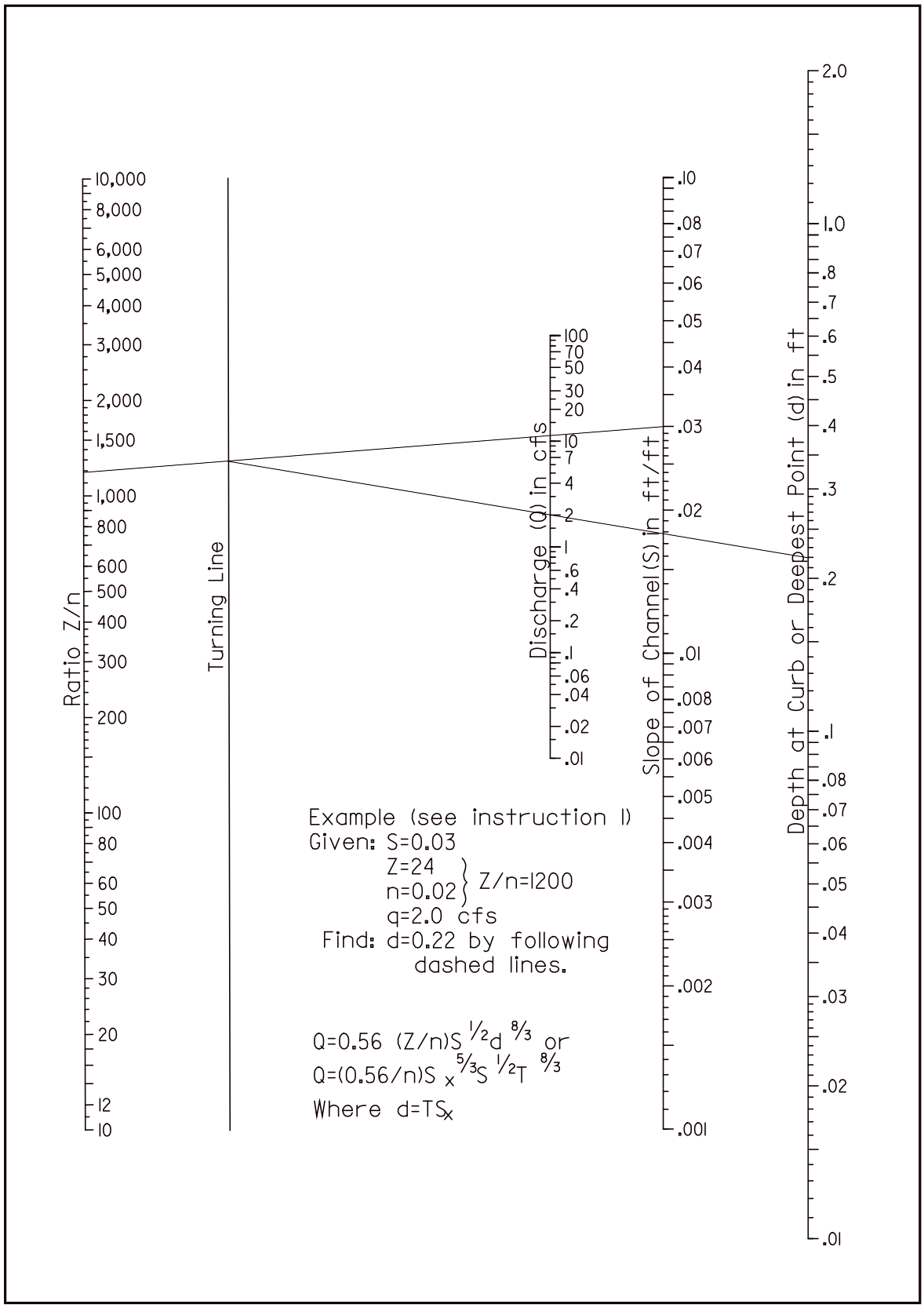
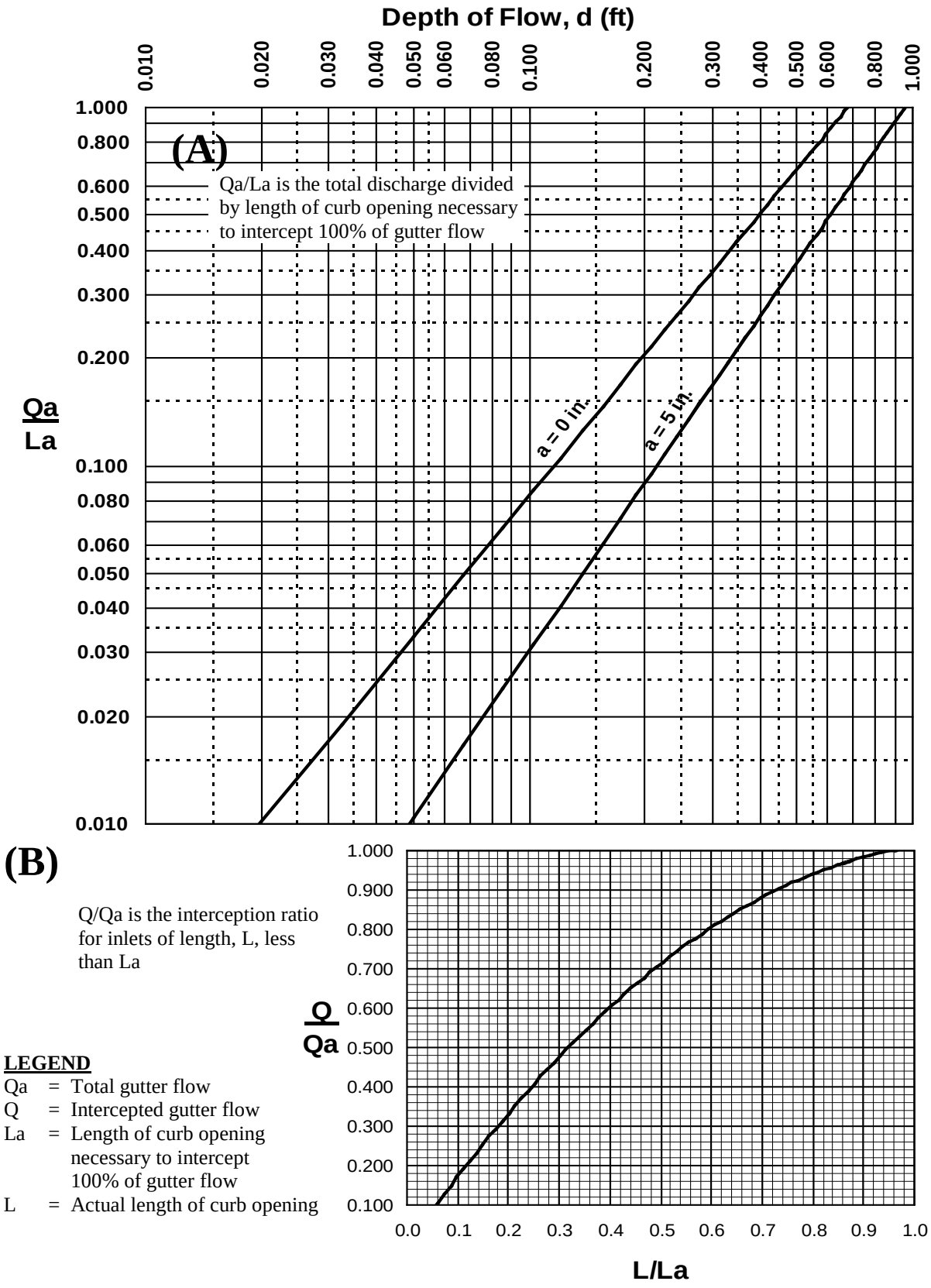


Exhibit G.2 Nomograph for Flow, Q, in Triangular Channels



LEGEND

Qa = Total gutter flow
Q = Intercepted gutter flow
La = Length of curb opening necessary to intercept 100% of gutter flow
L = Actual length of curb opening

Exhibit G.3 Capacity Nomograph for Curb Opening Inlets on Continuous Grade

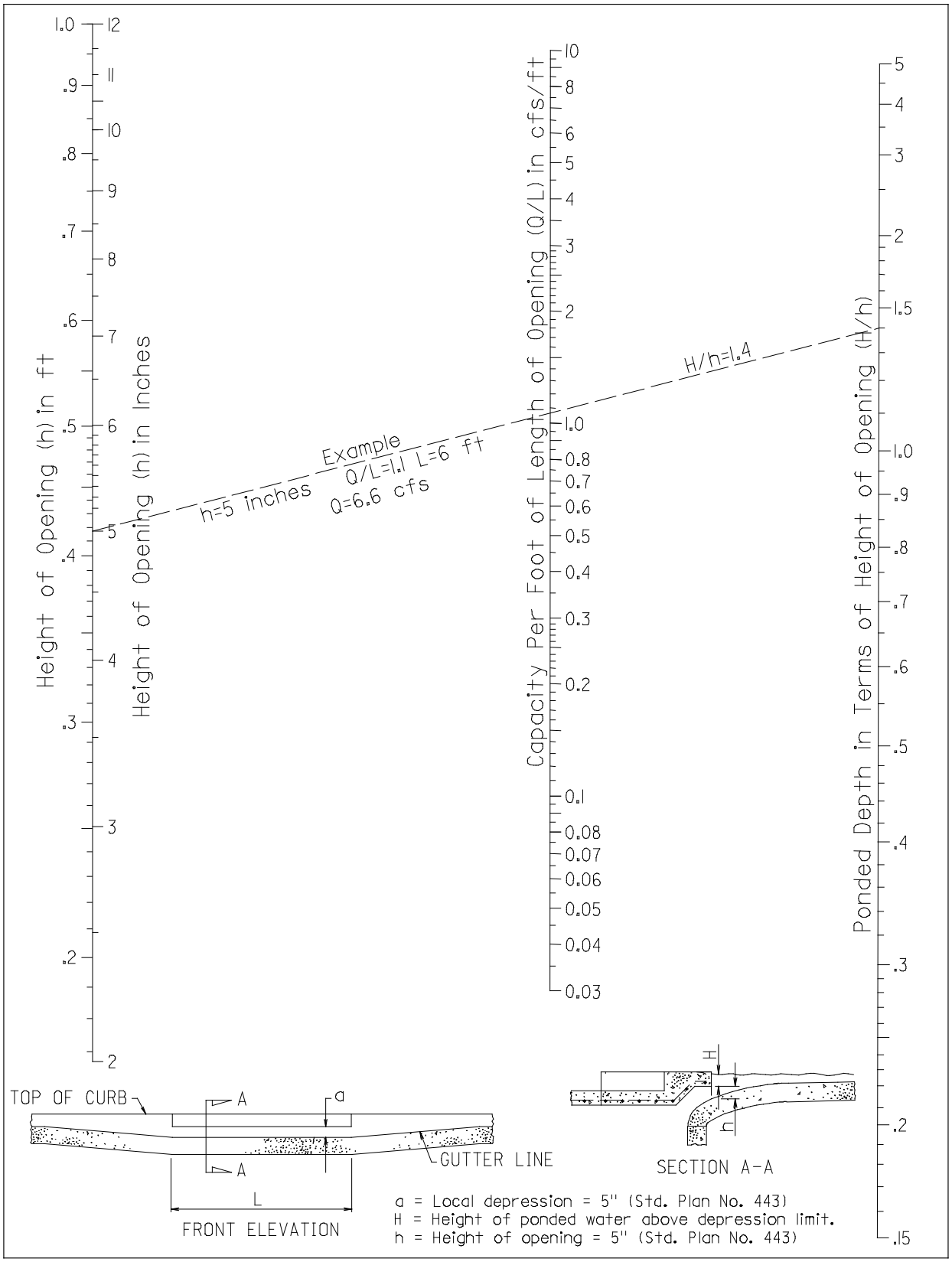


Exhibit G.4 Capacity Nomograph for Curb Opening Inlets in a Low Point or Sump

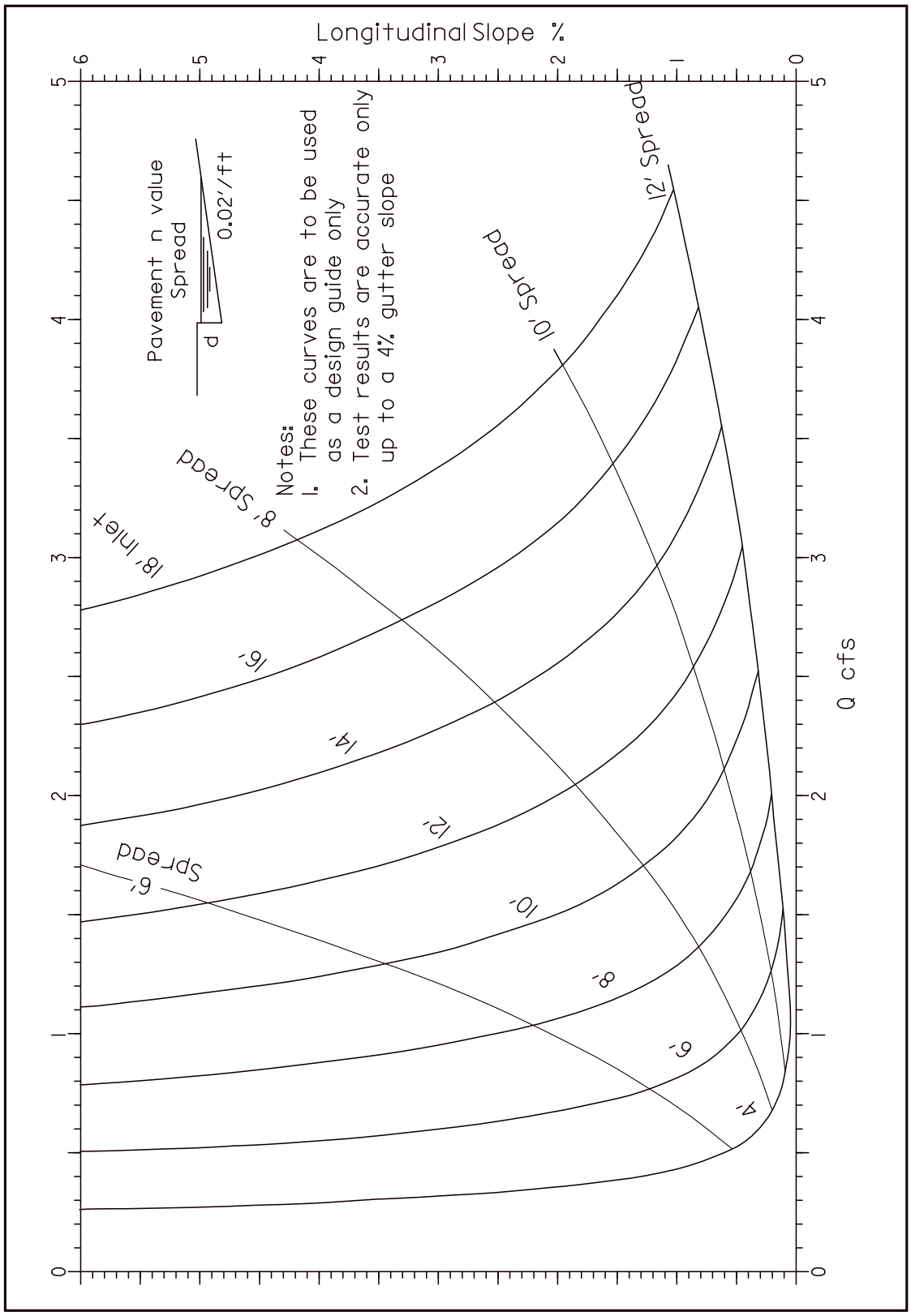


Exhibit G.5 Performance Curves for Curb Inlets Standard Plan
(For a cross-slope of 0.02 ft/ft)

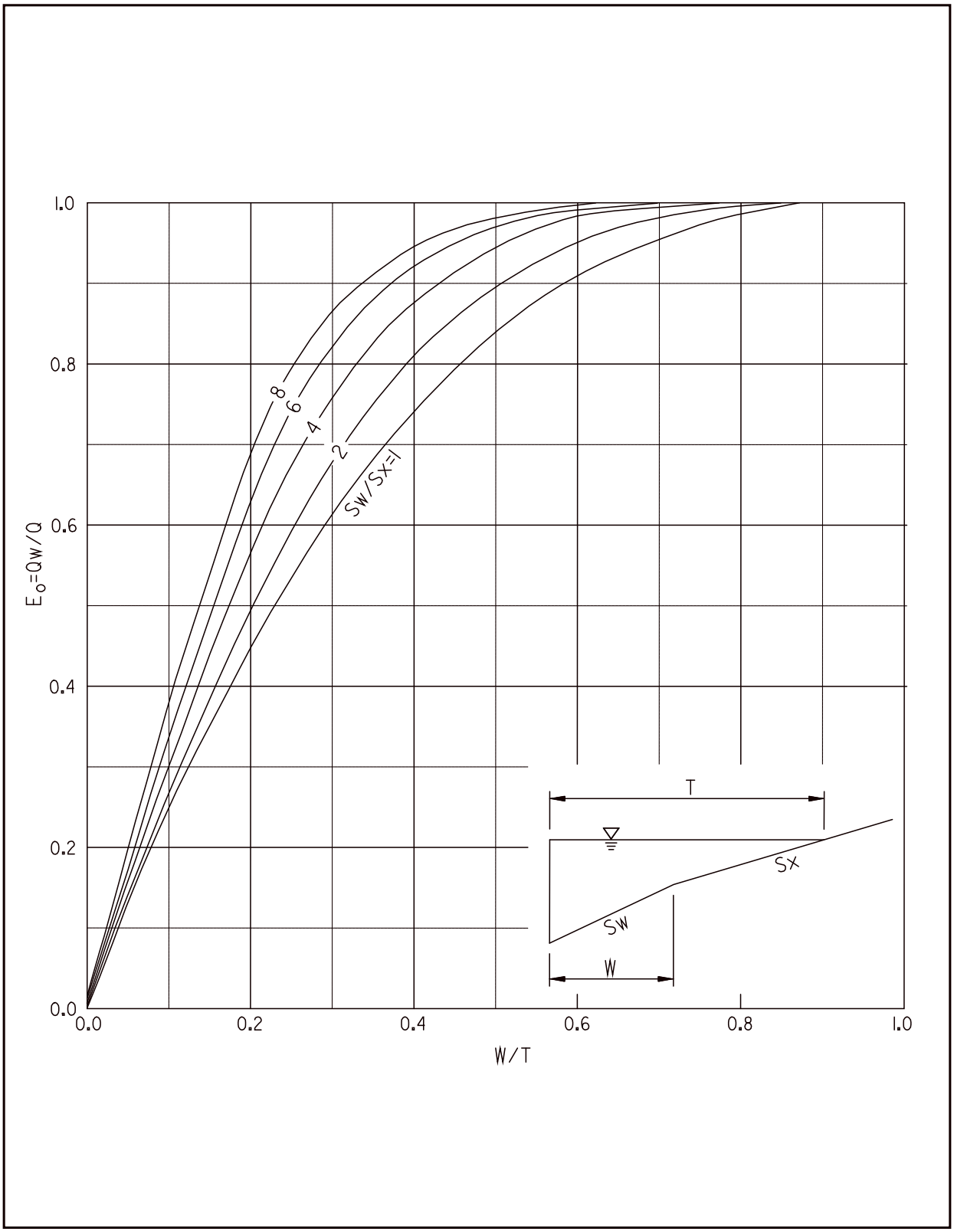


Exhibit G.6 Ratio of Frontal Flow to Total Gutter Flow
(Source: Reference G.1)

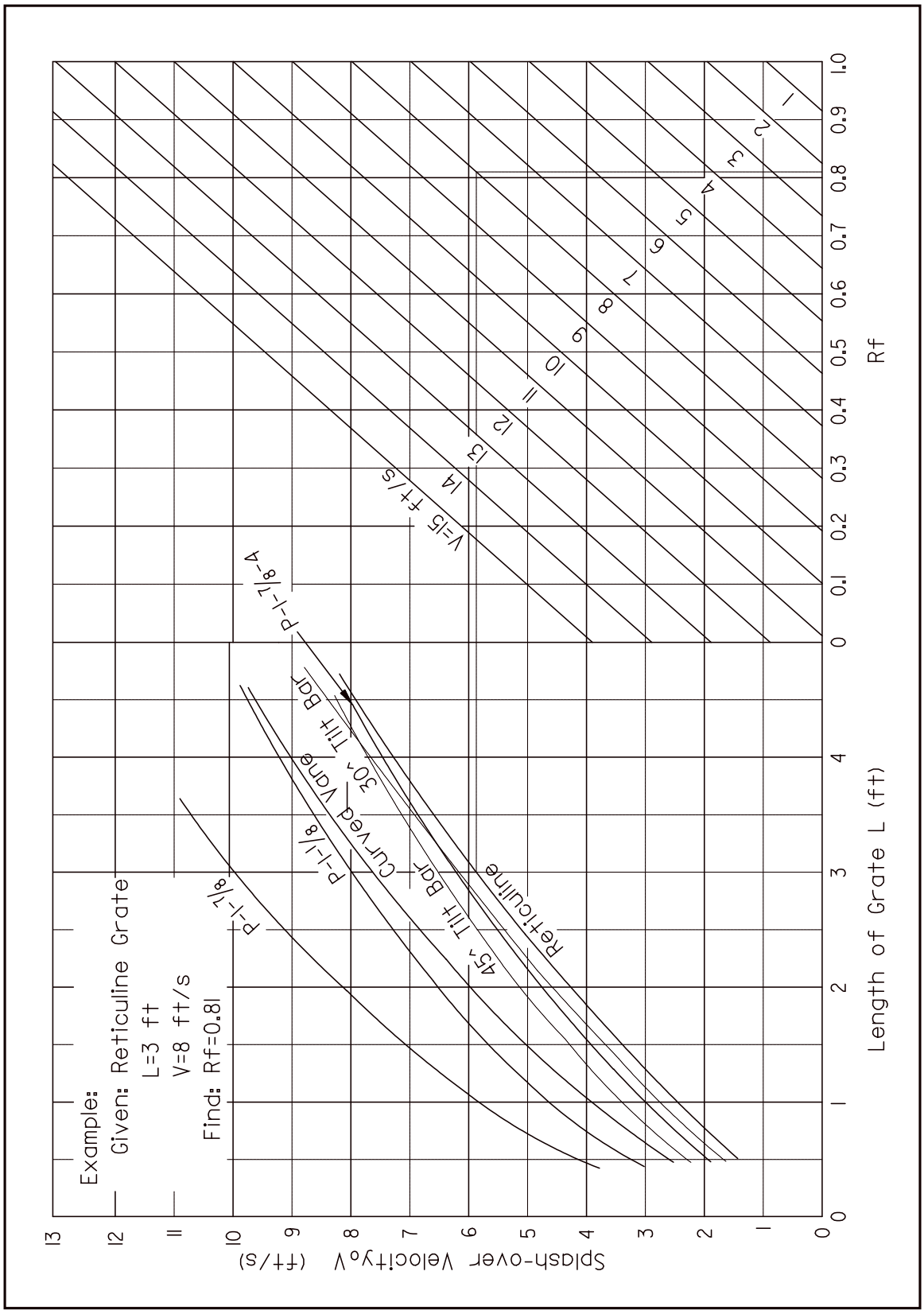


Exhibit G.7 Grate Inlet Frontal Flow Interception Efficiency
(Source: Reference G.1)

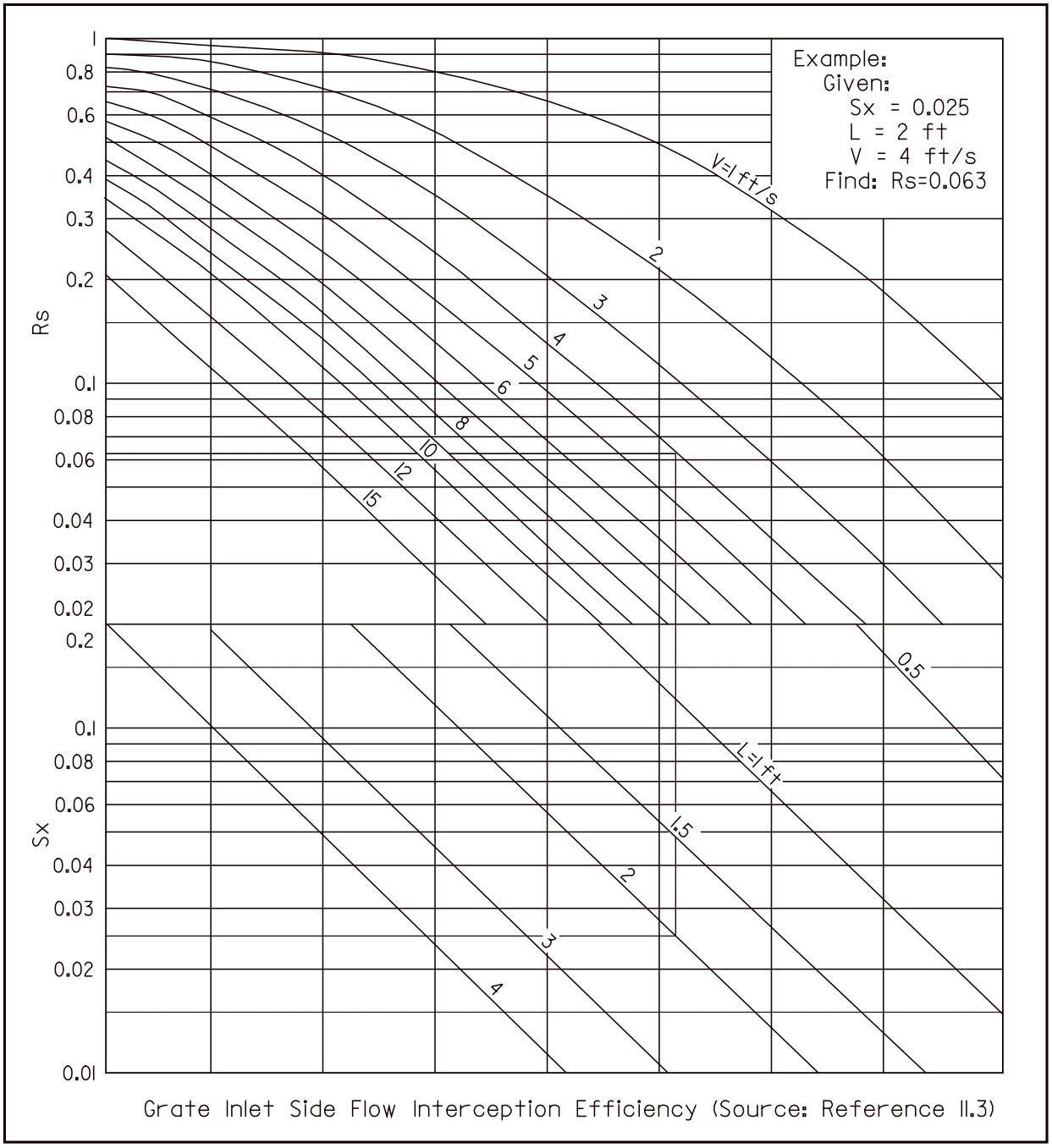


Exhibit G.8 Grate Inlet Side Flow Interception Efficiency
(Source: Reference G.1)

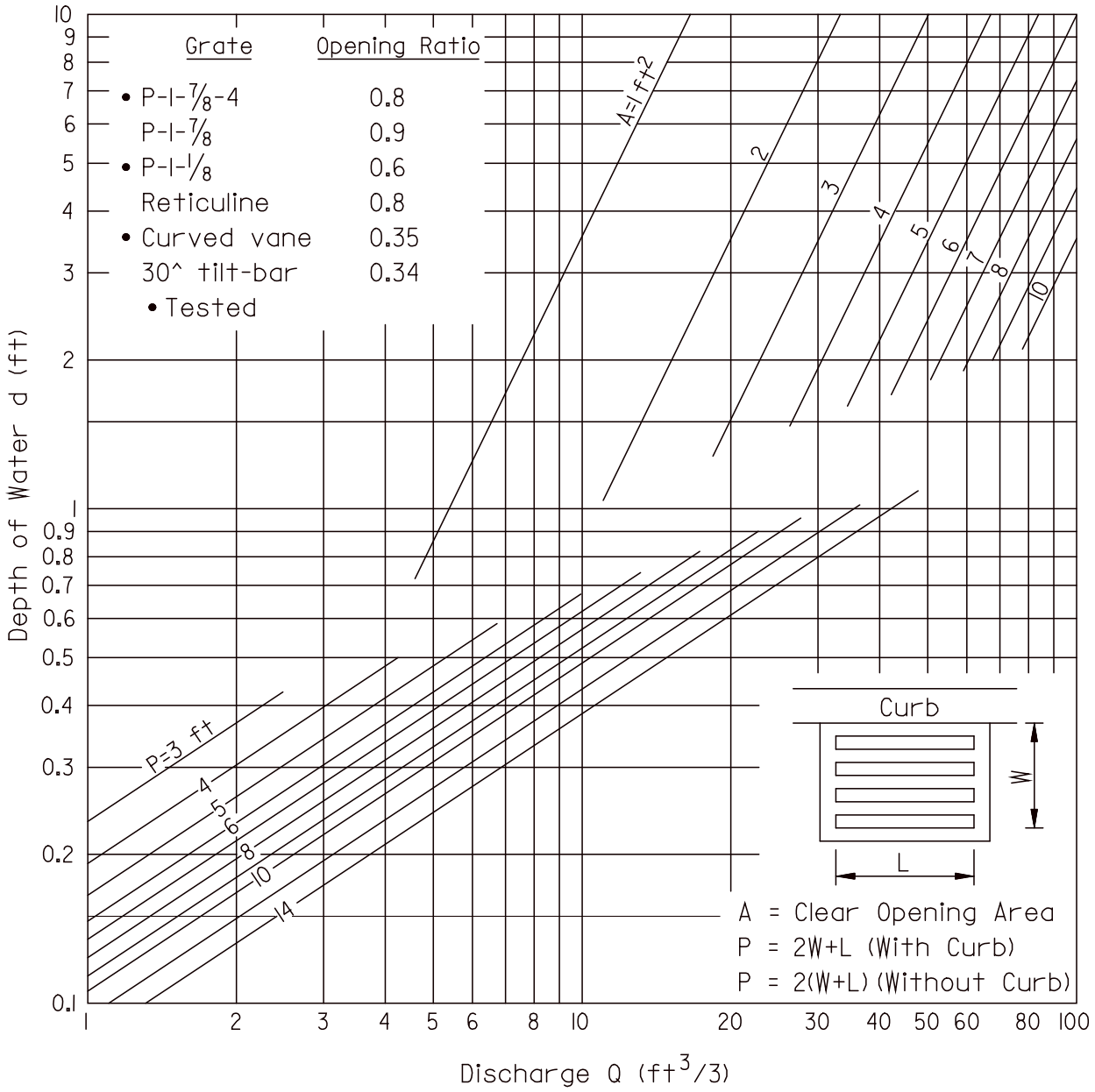


Exhibit G.9 Grate Inlet Capacity in Sump Conditions
(Source: Reference G.1)

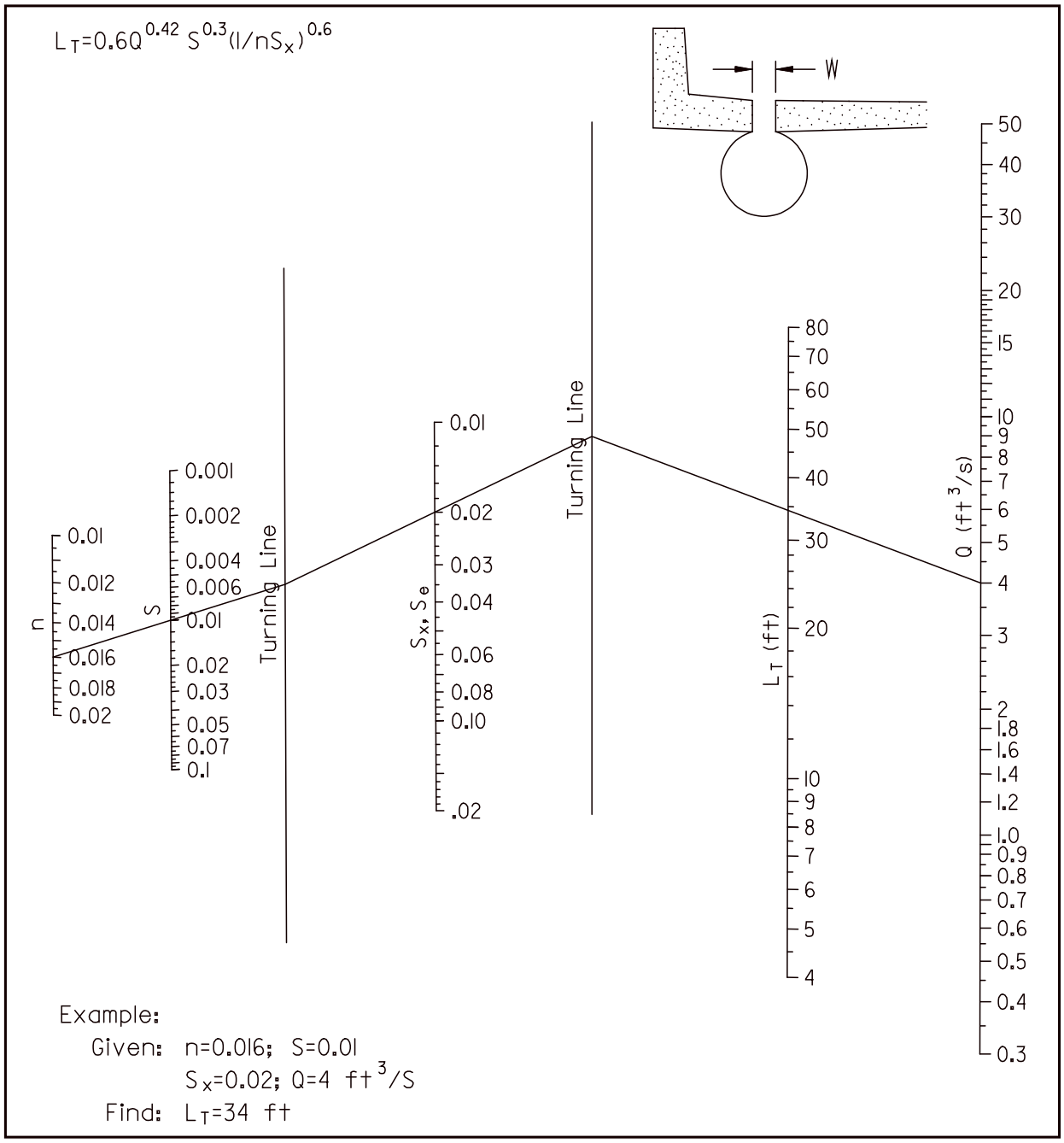


Exhibit G.10 Slotted Inlet Length for Total Interception
(Source: Reference G.1)

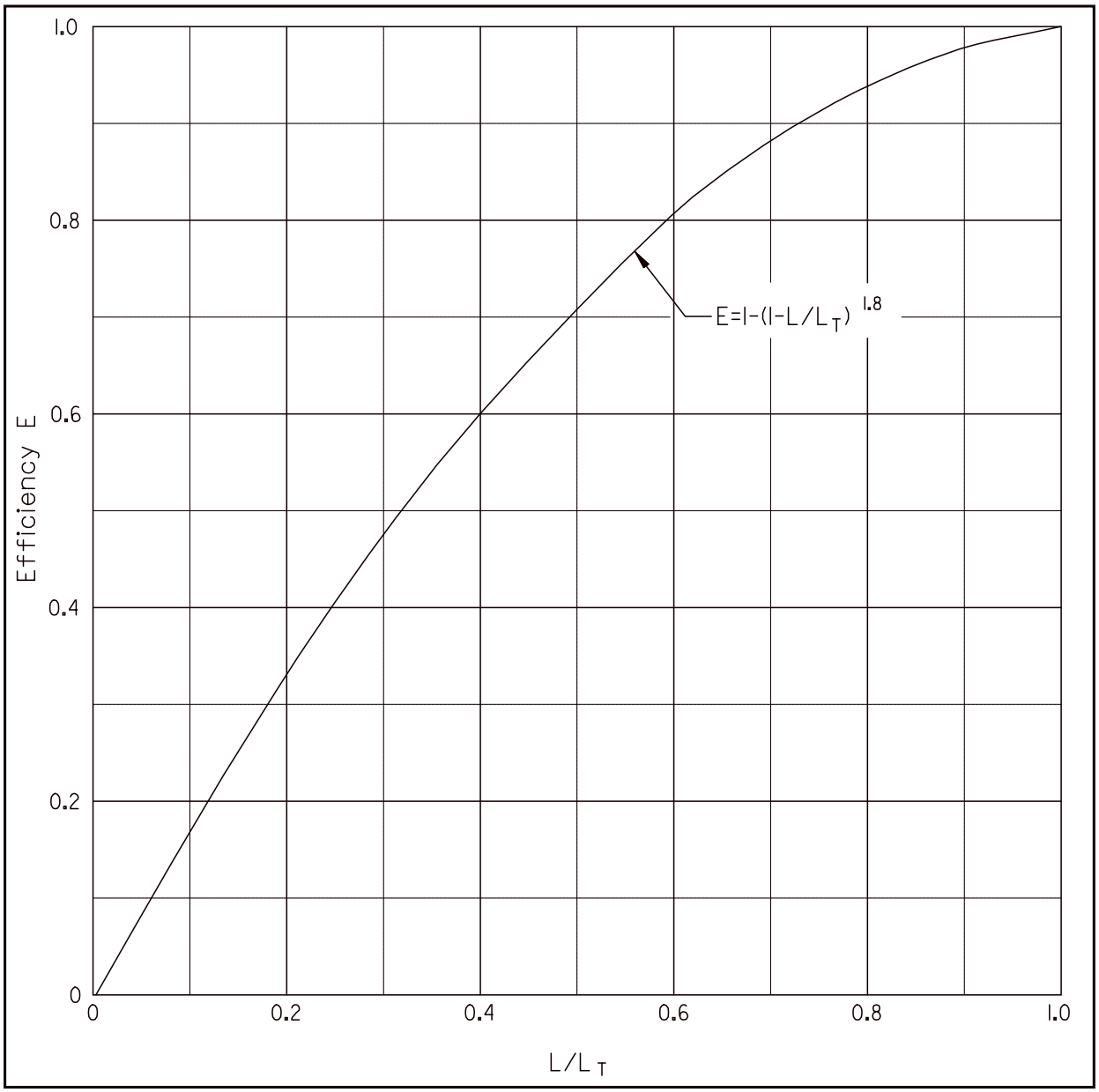


Exhibit G.11 Slotted Inlet Interception Efficiency
(Source: Reference G.1)

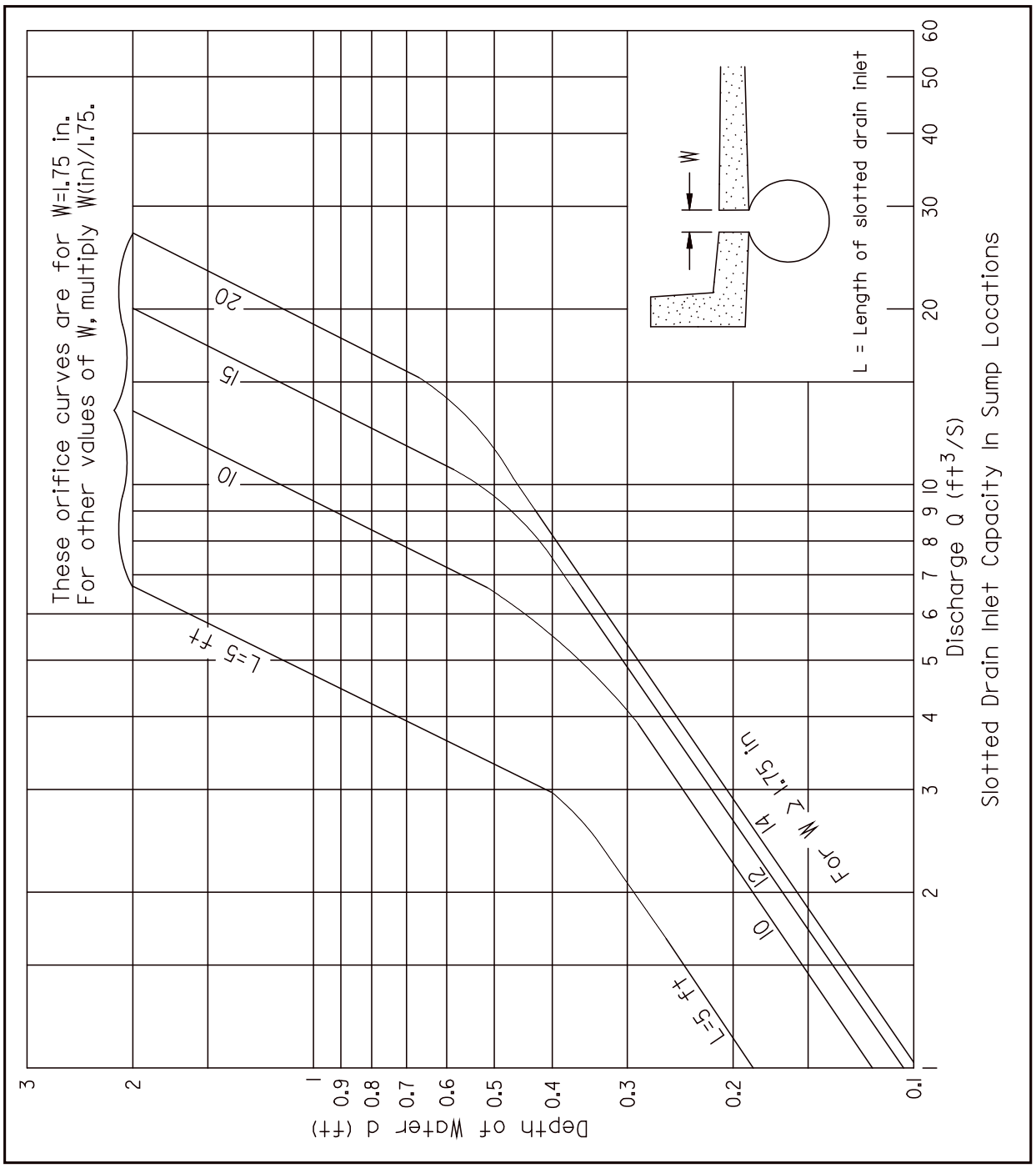


Exhibit G.12 Slotted Drain Inlet Capacity in Sump Locations
(Source: Reference G.1)

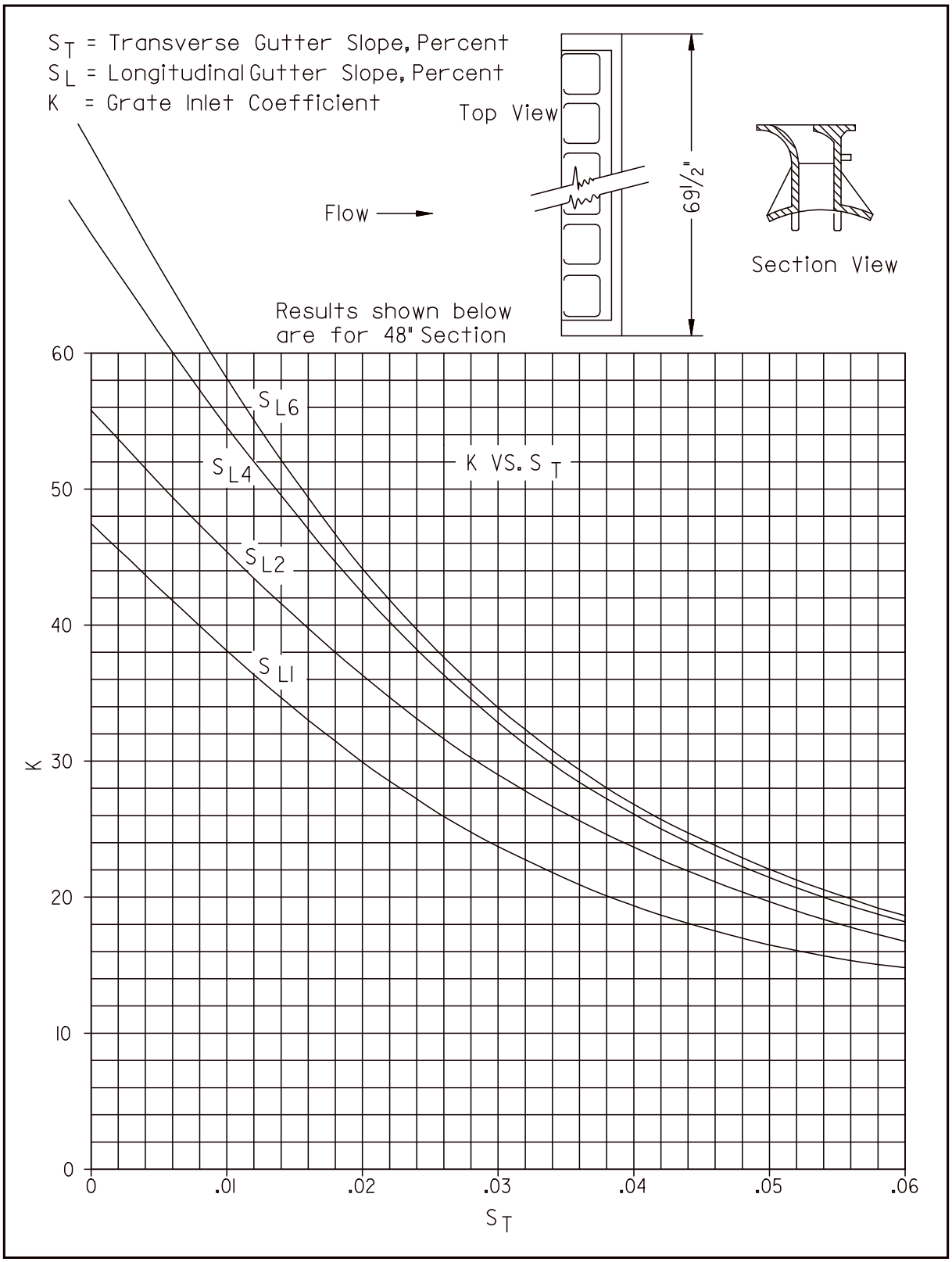


Exhibit G.13 Value of K for Slotted Vane Drain:
Applicable to Neenah Slotted Vane Drain R-3599 *Only*
(Source: Neenah Foundry Company)

REFERENCES

G.1 U.S. Department of Transportation, Federal Highway Administration, Drainage of Highway Pavements, Hydraulic Engineering Circular (HEC) 12, FHWA-TS-84-202, 1984. (https://www.fhwa.dot.gov/engineering/hydraulics/pubs/hec/hec12.pdf)