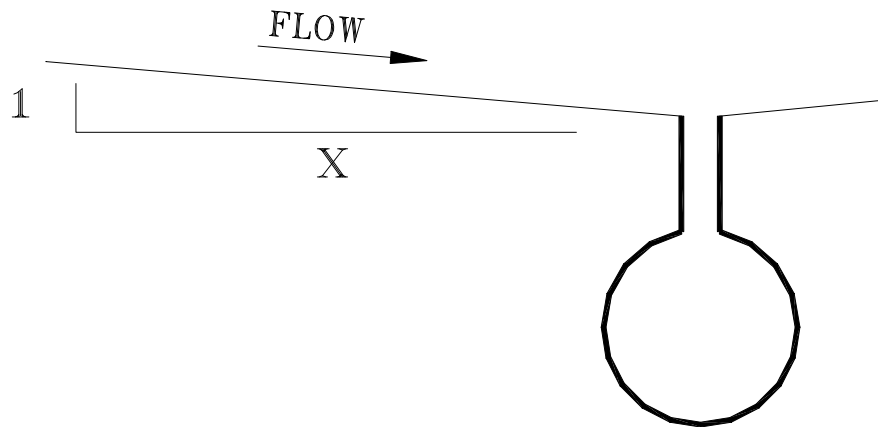


DURASLOT[®] Inlet Hydraulics

DURASLOT surface drains have similar inlet hydraulics as that of CMP type slotted drains. A 1 3/4" wide opening runs the length of the pipe like that of CMP. However, a unique design to DURASLOT, utilizing special coupler bands allows for a continuous slot, unlike that of CMP slotted drains. Studies done by the FHWA for slotted drains have found that in most conditions, slotted drains will act as a weir at depths up to about 0.2 ft. At depths greater than 0.4 ft, the inlet will act as an orifice. These depths mostly occur in sag locations or a triangular channel. These cases are pragmatic for slotted drains because the inlet cannot perform as efficiently as those in weir conditions. In cases of orifice flow, the AISI Handbook¹ method can be used.

In these studies, the FHWA found that at water depths ranging from 0.38 in to 0.56 in the slot can accommodate 0.025 CFS of water with no bypass. At a test system capacity of 0.04 CFS there was a small amount of bypass that occurred. To conclude, a 'rule of thumb' has evolved. For conditions where sheet flow velocity is not extremely high (an exception would be a steep slope down to the slot), a slotted inlet of this type will handle a maximum of 0.04 cfs/foot of slot length.

The basic geometry of the testing layout – Grade = 1:X



¹ American Iron and Steel Institute – Handbook of Steel Drainage and Highway Construction Products, 5th ed., 1994, pages 218-223.