EXHIBIT NO. 21

Entrance Loss Coefficients, Outlet Control Full or Partly Full Entrance Head Loss

TABLE 12 - ENTRANCE LOSS COEFFICIENTS

Outlet Control, Full or Partly Full Entrance Head Loss $He = Ke (v2 / 2g)$

Type of Structure and Design of Entrance	**Coefficient k**
Pipe, Concrete	
Projecting from fill, socket end (grove-end)	0.2
Projecting from fill, square cut end	0.5
Headwall or headwall and wing walls, socket end of pipe (grove-end)	0.2
Headwall or headwall and wing walls, square-edge	0.5
Headwall or headwall and wing walls, rounded (radius=1/12 D)	0.2
Mitered to conform to fill slope	0.7
* End-Section conforming to fill slope	0.5
Beveled edges, 33.7° or 45° bevels	0.2
Side or slope tapered inlet	0.2
Pipe, or Pipe-Arch, Corrugated Metal	
Projecting from fill (no headwall)	0.9
Headwall or headwall and wing walls square-edge	0.5
Mitered to conform to fill slope paved or unpaved slope	0.7
* End-Section conforming to fill slope	0.5
Beveled edges, 33.7° or 45° bevels	0.2
Side or slope tapered inlet	0.2
Box, Reinforced Concrete	
Headwall parallel to embankment (no wing walls) square edged on 3 edges	0.5
Rounded on 3 edges to radius of 1/12 barrel dimension, or beveled edges on 3 sides	0.2
Wing walls at 30° to 75° to barrel squared edged at crown	0.4
Crown edge rounded to radius of 1/12 barrel dimension, or beveled top edge	0.2
Wing wall at 10° to 25° to barrel squared edged at crown	0.5
Wing walls parallel (extension of sides) square edged at crown	0.7
Side or sloped tapered inlet	0.2

* "End section conforming to fill slope." made of either metal of concrete, are the sections commonly available from manufactures. From limited hydraulic tests they are equivalent in operation to a headwall in both inlet and outlet control. Some end sections, incorporating a closed taper in their design has a superior hydraulic performance.