

It is our best estimate that α should be 0.75 and n should be 2. Thus equation (1) becomes

$$J_y = J \left[1 - \left(\frac{4y}{3H} \right)^2 \right] \quad \text{for } (0 \leq y \leq 0.75H) \quad \dots \quad (2)$$

For example if $y = 0.1H$, i.e. the invert of the conduit on line "A" is $0.1H$ above the interface, the required joint extensibility for the conduit is

$$J_y = J \left[1 - \left(\frac{(4)(0.1H)}{3H} \right)^2 \right]$$

$$\frac{J_y}{J} = (1 - 0.018) = 0.982$$

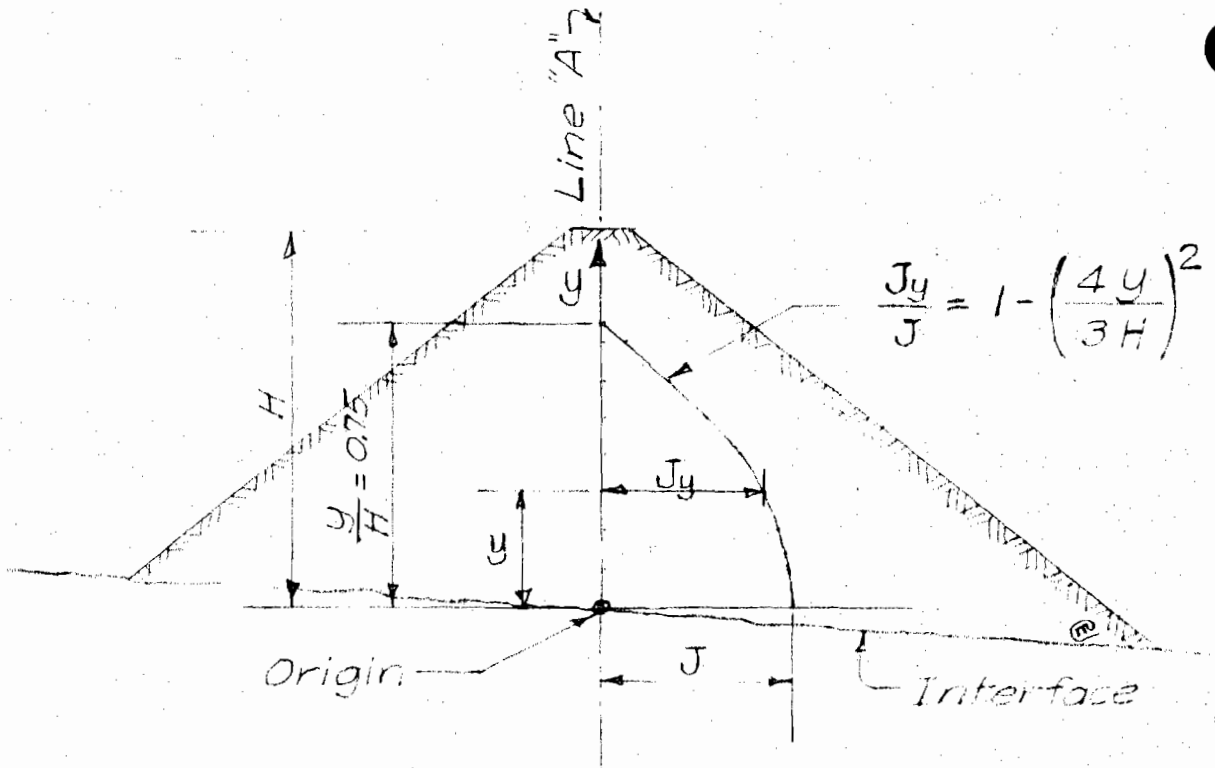


Fig. No.1

Questions have been raised about the effect of placing compacted fill under the conduit on the required joint extensibility. Our present understanding indicates that compacted fill under the conduit of any reasonable extent will have such a small effect on required joint extensibility as to be considered negligible in any case where the required joint extensibility would require special joints or reduction in length of pipe sections.

As the conduit is moved downward from the interface into the foundation, within practical limits which would ensure free outlet for the conduit, the reduction in required joint extensibility, J , is believed to be so small that it may be neglected. Hence for all locations of the conduit below the interface the value of J at the interface should be used without modification.

A small discontinuity, such as a compacted "pad" under a conduit, which is limited in depth and lateral extent has very little effect on the movements in the large mass of earth under an embankment where joint movement is apt to be a problem. The foundation is three dimensional and the strains and deformations in it govern the movement in the conduit, a discontinuity in itself.

