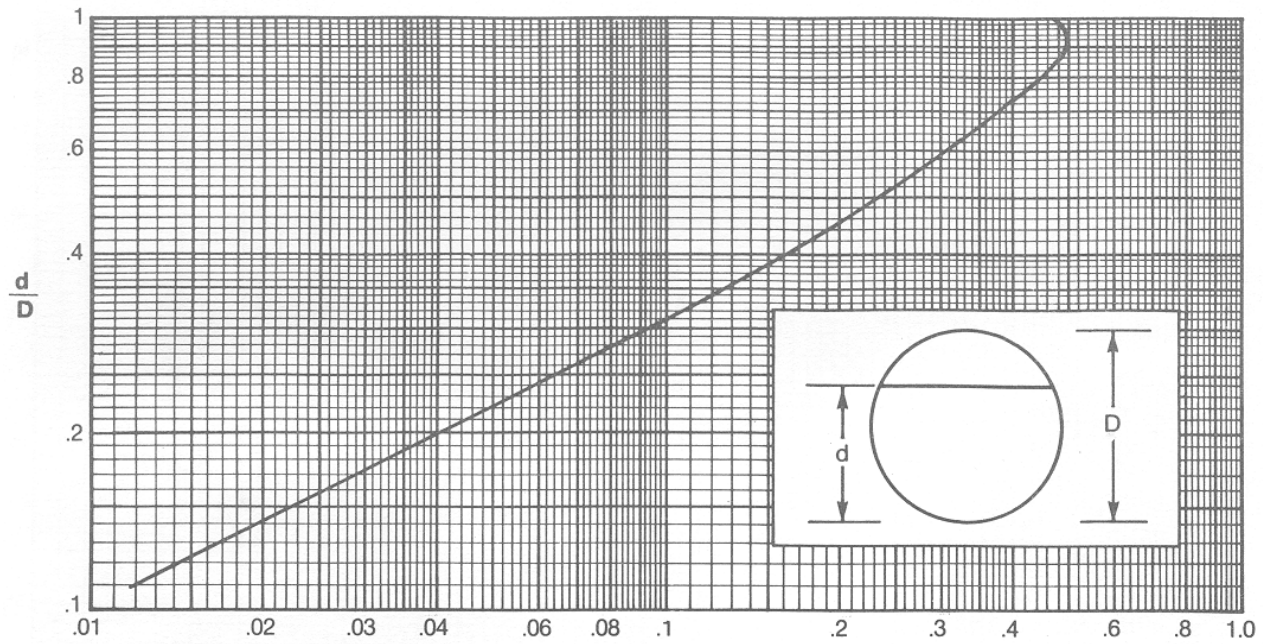


APPENDIX

E. PARTIAL DEPTH PIPE FLOW GRAPHS

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$$\frac{Qn}{D^{8/3}S^{1/2}}$$

Q = Flow Rate (cfs)

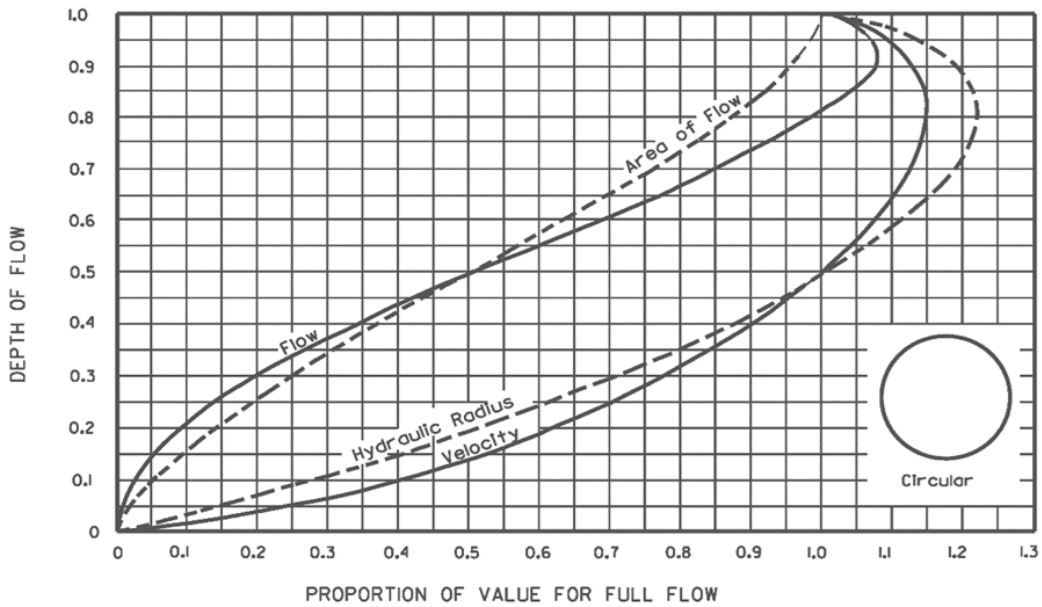
D = Pipe Diameter (ft)

S = Pipe Slope (ft/ft)

d = Normal Depth (ft)

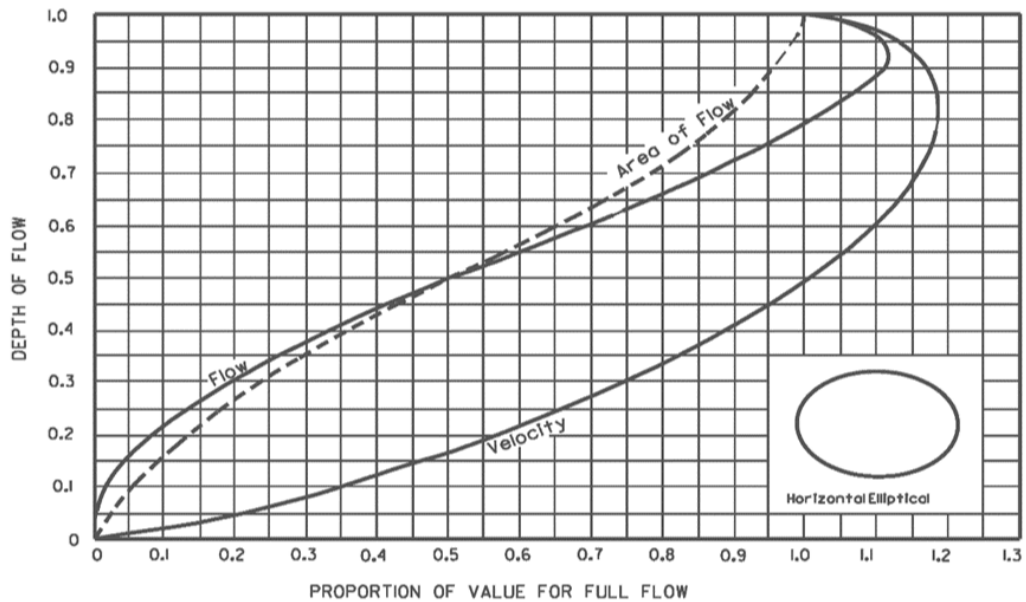
Ref 1987 FDOT Drainage Manual

Figure E-1: Circular Pipe Partial Flow Capacity Chart



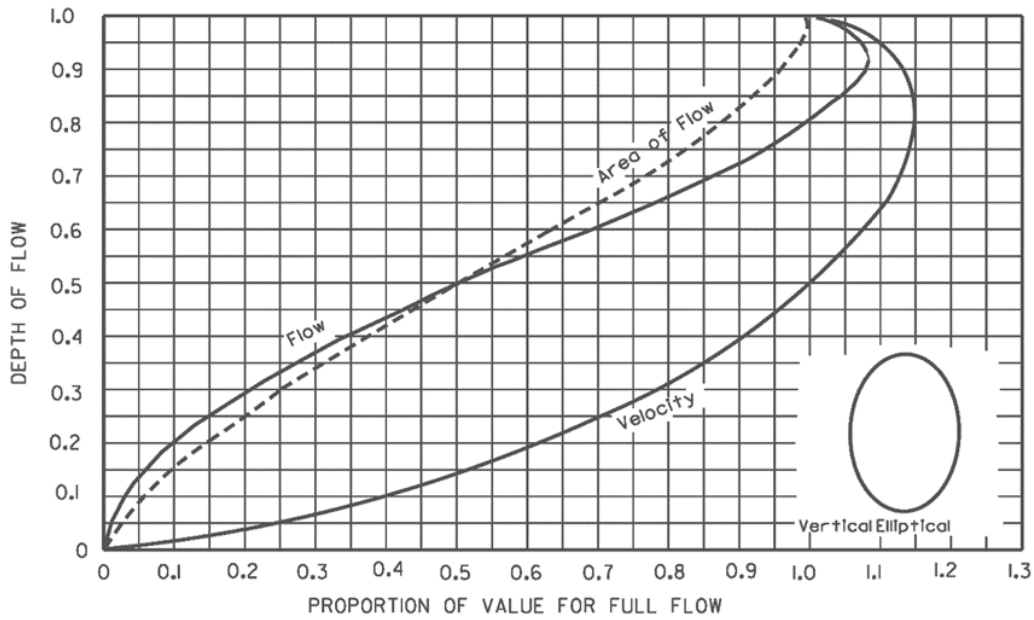
Reference: American Concrete Pipe Association (1980).

Figure E-2: Circular Pipe Relative Flow, Area, Hydraulic Radius, and Velocity



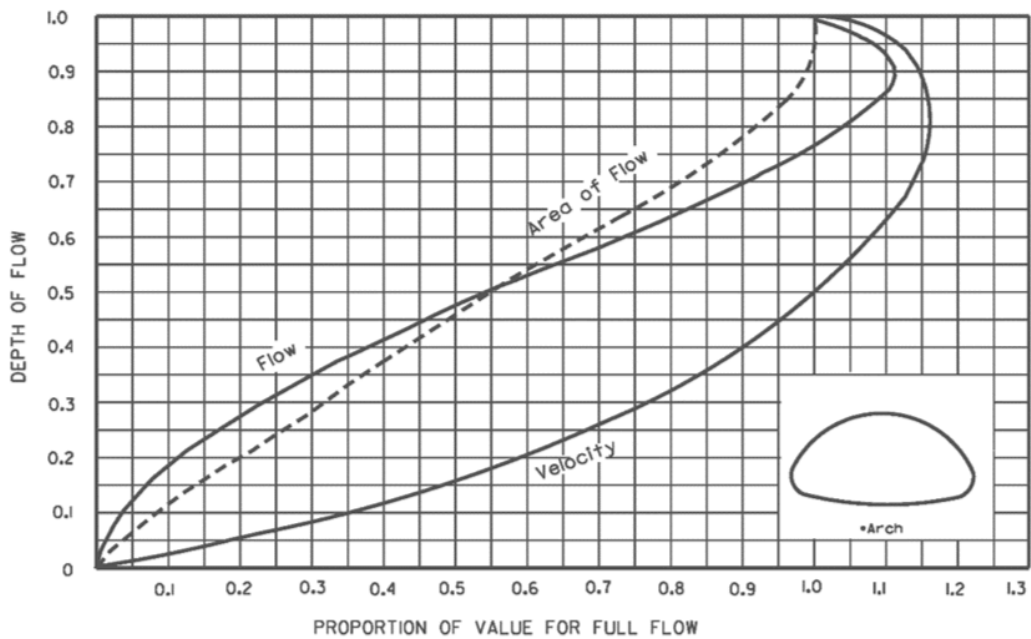
Reference: American Concrete Pipe Association (1980).

Figure E-3: Horizontal Elliptical Pipe Relative Flow, Area, and Velocity



Reference: American Concrete Pipe Association (1980).

Figure E-4: Vertical Elliptical Pipe Relative Flow, Area and Velocity



Reference: American Concrete Pipe Association (1980).

Figure E-5: Pipe-Arch Relative Flow, Area, and Velocity