

ROUTE: DES. NO.: PROJECT NO.: PROJECT DESCRIPTION:								STATION: SHEET OF				CULVERT DESIGN FORM – TAPERED INLET					
DESIGN DATA: Q = ft³/s; EL. _{hl} (ft) EL. Throat Invert (ft) EL. Stream Bed at Face (ft) FALL: (ft); TAPER :1 (4H:1V to 6H:1V) STREAM SLOPE, S _c = (ft/ft) SLOPE OF BARREL, S = (ft/ft) S _r :1 (2H:1V to 3H:1V) Barrel Shape and Material: N = ; B = ; D = Inlet Edge Description:												COMMENTS:					
Q (ft³/s)	EL. _{hl}	EL. Throat Invert	EL. Face Invert (1)	HW _f (2)	$\frac{HW_f}{E}$ (3)	$\frac{Q}{B_f}$ (4)	Min. B _f (5)	Sel- Ected B _f	SLOPE-TAPERED ONLY					L ₁ (11)	SIDE-TAPERED w/ FALL		
									Min. L ₃ (6)	L ₂ (7)	Check L ₂ (8)	Adj. L ₃ (9)	Adj. Taper (10)		EL. Crest Invert	HW _c (12)	Min. W (13)
TECHNICAL FOOTNOTES: (1) Slope-Tapered: EL. Face Invert = EL. Stream Bed at Face Side-Tapered: EL. Face Invert = EL. Throat Invert + 1 ft (approx.) (2) HW _f = EL. _{hl} – EL. Face Invert (3) 1.1D ≥ E ≥ D (4) From Design Charts (5) Min. B _f = Q / (Q/B _f) (6) Min. L ₃ = 0.5NB (7) L ₂ = S _r (EL. Face Invert – EL. Throat Invert) (8) Check $L_2 = 0.5(B_r - NB)Taper - L_3$								(9) If (8) > (7), Adj. $L_3 = 0.5(B_r - NB)Taper - L_3$ (10) If (7) ≤ (8), Adj. Taper = $\frac{L_2 + L_3}{0.5(B_r - NB)}$ (11) Slope-Tapered: L ₁ = L ₂ + L ₃ Side-Tapered: $L = 0.5(B_r - NB)Taper$ (12) HW _c = EL. _{hl} – EL. Crest Invert (13) Min. $W = \frac{0.634Q}{HW_c}$						SELECTED DESIGN: B _f = L ₁ = L ₂ = L ₃ = Bevels Angle = ° b = d = Taper = :1V S _r = :1V			