PROJECT: _____

STATION: _____

SHEET _____ OF _____

TAPERED INLET DESIGN FORM

DESIGNER/DATE: _____ / _____

REVIEWER/DATE: _____ / _____

DESIGN DATA:

Q _____ = _____ (m^3/s); EL_N _____ (m)

EL. THROAT INVERT _____ (m)

EL. STREAM BED AT FACE _____ (m)

FALL _____ (m) TAPER _____ : 1 (4H:1V TO 6H:1V)

STREAM SLOPE, S_s = _____ (m/m)

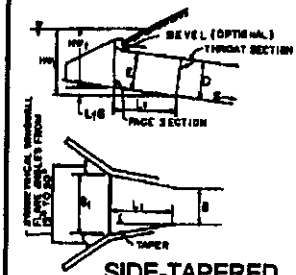
SLOPE OF BARREL, S = _____ (m/m)

S_f _____ : 1 (2H:1V TO 3H:1V)

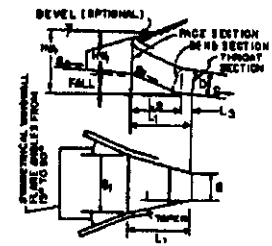
BARREL SHAPE AND MATERIAL : _____

N = _____ , B = _____ , D = _____

INLET EDGE DESCRIPTION _____



SIDE-TAPERED



SLOPE-TAPERED

COMMENTS

Q (m^3/s)	EL_N	EL. THROAT INVERT	EL. FACE INVERT (1)	HW_f (2)	HW_f / E (3)	Q / B_f (4)	MIN. B_f (5)	SELECTED B_f	SLOPE-TAPERED ONLY: MIN. L_3 (6)	L_2 (7)	CHECK L_2 (8)	ADJ. L_3 (9)	ADJ. TAPER (10)	L_1 (11)	SIDE-TAPERED W/ FALL: EL. CREST INV.	HW_c (12)	MIN. W (13)

(1) SIDE-TAPERED : EL. FACE INVERT = EL. THROAT INVERT + 0.3 m (APPROX.)
SLOPE-TAPERED : EL. FACE INVERT = EL. STREAM BED AT FACE

(2) $HW_f = EL_N$ - EL. FACE INVERT

(3) $1.1\ D \geq E \geq D$

(4) FROM DESIGN CHARTS

(5) MIN. $B_f = Q/(Q/B_f)$

(6) MIN. $L_3 = 0.5$ NB

(7) L_2 = (EL. FACE INVERT - EL. THROAT INVERT) S_f

(8) CHECK $L_2 = ((B_f - NB)/2) * TAPER - L_3$

(9) IF (6) > (7), ADJ. $L_3 = ((B_f - NB)/2) * TAPER - L_2$

(10) IF (7) > (8), ADJ. TAPER = $(L_2 + L_3)/((B_f - NB)/2)$

(11) SIDE-TAPERED : $L = ((B_f - NB)/2) * TAPER$
SLOPE-TAPERED : $L_1 = L_2 + L_3$

(12) $HW_c = EL_N$ - EL. CREST INVERT

(13) MIN. $W = 0.634\ Q/HW_c^{1.5}$

SELECTED DESIGN

B_f _____

L_1 _____

L_2 _____

L_3 _____

BEVELS ANGLE ____ °

b = ___ mm, d = ___ mm

TAPER _____ : 1V

S_f = _____ : 1V

CULVERT DESIGN FORM

(Tapered End Treatment)

Figure 31-10E