

ROCK LINED CHUTE QUANTITIES

Landuser: _____ County: _____
 Designed by: _____ Date: _____ Checked by: _____ Date: _____

Rock Lined Chute Parameters:

Bottom Width (b):	b = _____ feet
Chute Flow Depth (d):	d = _____ feet
Controlled Drop (F):	F = _____ feet
Chute Profile Slope (S):	S = _____ :1
Chute Side Slopes (Z):	Z = _____ :1
Rock Size (d50):	d50 = _____ inches
Rock Lining Thickness (tr):	tr = _____ inches
Rock Density (Dr):	Dr = _____ pcf
Bedding Thickness (tb):	tb = _____ inches
Bedding Density (Db):	Db = _____ pcf

Volume of Rock:

Entrance Section:

d _e = _____ feet	L _e = _____ feet	b _e = _____ feet
Upstream End Volume of Rock/Foot (at tr = 1'):		V _u = _____ cf/ft
$V_u = b_e + 2(d_e)(z^2+1)^{0.5} + A^*$		
Downstream End Volume of Rock/Foot (at tr = 1'):		V _d = _____ cf/ft
$V_d = b + 2(d_e)(z^2+1)^{0.5} + A^*$		
V _E = (V _u + V _d) (0.5) (tr) (L _e)		V _E = _____ cu. ft.

Chute Section:

d _c = _____ feet	L _c = _____ feet	
Volume of Rock/Foot (at tr = 1'):		V _c = _____ cf/ft
$V_c = b + 2(d_c)(z^2+1)^{0.5} + A^*$		
V _C = (V _c) (tr) (F) (S ² +1) ^{0.5}		V _C = _____ cu. ft.

Outlet Section:

d _o = _____ feet	L _d = _____ feet	
Volume of Rock/Foot (at tr = 1'):		V _o = _____ cf/ft
$V_o = b + 2(d_o)(z^2+1)^{0.5} + A^*$		
V _O = (V _o) (tr) (L _o)		V _O = _____ cu. ft.

Total Volume of Rock:

V _r = (V _E) + (V _C) + (V _O)	V _r = _____ cu. ft.
--	--------------------------------

Quantity of Rock: (V_r) (Dr / 2000) = _____ **tons**

Volume of Bedding:

V _b = (V _r) (tb/tr)	V _b = _____ cu. ft.
--	--------------------------------

Quantity of Bedding: (V_b) (Db/2000) = _____ **tons**

Quantity of Geotextile Fabric:

gf = (V _r)/(tr)	gf = _____ sq. ft.
Add 10% for laps, ends, waste, etc.	
Geotextile fabric required: Gf = (1.1) (gf) = _____ sq. ft.	
Gf ÷ 9 = _____	_____ sq. yd.

* correction for fill section (see EFM Figure IN-6-11)