



A) For  $Q = 125$  cfs,  $n = 0.024$ ,  $2:1$ ,  $b = 4'$ ,  $S = 1.00\%$   
Find  $D$  &  $V$

Use Chart 17 ~  $Q_n = 125 (0.024) = 3$

$$D = \underline{\underline{1.95'}} \quad V_n = 0.17 \quad V = \frac{0.17}{0.024} = \underline{\underline{7.1 \text{ fps}}}$$

B) An  $8:1$  slope,  $8'$  wide channel,  $n = 0.040$   
@  $1.5\%$  AT  $3$  fps YIELDS WHAT  $D$  &  $Q$ ?

$$V_n = 3(0.040) = 0.12 \quad \text{USE FIG. 1100-11}$$

$$D = \underline{\underline{0.89'}} \quad Q_n = 1.20 \quad Q = \frac{1.20}{0.04} = \underline{\underline{30 \text{ cfs}}}$$

C) A  $4:1, 2:1, 2'$  bottom REVERSE CHANNEL  
 $n = 0.03$ ,  $Q = 17$  cfs,  $D = 1.4'$ . Find  $S$  &  $V$ .

USE FIG 1100-16

$$Q \rightarrow D \quad \text{Find } S = 0.22\% \quad V = 2.0 \text{ fps}$$

D) For A  $2:1$ ,  $6'$  bottom  $n = 0.022$   $S = 0.5\%$   
 $D = 1.5'$  Find  $Q$  &  $V$ .

USE CHART 19 For  $S$  &  $D$  GIVEN

$$Q_n = 1.95 \quad Q = \frac{1.95}{0.022} = \underline{\underline{66 \text{ cfs}}}$$

$$V_n = 0.11 \quad V = \frac{0.11}{0.022} = \underline{\underline{5 \text{ fps}}}$$