

Contour Canal Details-after rehabilitation

	0.165km	12.56km	25.10km	49.20km
Bed width	6.14m	4.36m	6.10m	4.36m
Bed fall	12mm in 30m	12mm in 30m	12mm in 30m	12mm in 30m
Length of left side slope	vertical	3.96m	vertical	2.94m
Length of right side slope	vertical	3.92m	vertical	2.94m
Depth of water	3.62m	3.89m	2.85m	2.05m

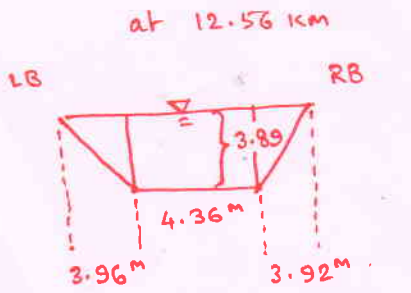
$1.2 \text{ in } 3000 = S_b$

The inflow to the canal is tail race water of a power house. The currentmeter is recently calibrated and the Velocity eqn is  $V = 0.6621R + 0.0059$  which is used for LS 12.56 & 25.10km. Yet another calibrated instrument with the equation  $V = 0.6664R + 0.0047$  is used for LS 0.165 km & 49.20km.

Currentmeter reading in comparison with old chart

.165		12.56		25.10		49.20					
Depth	discharge(currentmeter)	chart	Depth	discharge(currentmeter)	chart	Depth	discharge(currentmeter)	chart	Depth	discharge(currentmeter)	chart
3.62m	1036	901	3.89	950.69	1000	2.85	839	809	2.05	836	830

The issue is the difference between 12.56km and 25.10 km is 191c/s as per old chart, currentmeter difference is 111.69 c/s @ 0.165 km the discharge is 1036c/s but in the tail end it is 836 c/s. The contour canal empties into another dam.

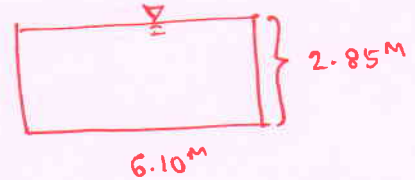


$Q = 950.69 \text{ m}^3/\text{sec.}$   
 $\text{velocity} = 1.5 \text{ m/sec.}$

$\text{Area} = \frac{950.69}{1.5} = 633.8 \text{ m}^2.$

$\frac{1}{2} (12.24 + 4.36) \times 3.89$   
 $= 32 \text{ m}^2$

wetted perimeter



$\text{Area} = 2.85 \times 6.10$   
 $= 17.4 \text{ m}^2.$

$\text{wetted perimeter} = 6.10 + 2 \times 2.85$   
 $= 11.8 \text{ m}$

$Q = 1.5 \times 17.4 = 26.1 \text{ m}^3/\text{sec}$

$1.5 = V = 0.6621R + 0.0059$

$R = 2.26$  rotations per sec.

$1.5 = V = 0.6664R + 0.0047$

$R = 2.24$  rotations per sec.

$V = \frac{1}{n} \cdot R^{2/3} \cdot S^{1/2}$

$1.5 = \frac{1}{n} \cdot \left( \frac{17.4}{11.8} \right)^{2/3} \cdot \left( \frac{1.2}{3000} \right)^{1/2}$

$n = \frac{1.297 \times 0.02}{1.5} = 0.0173$