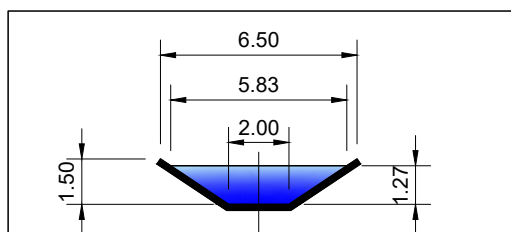


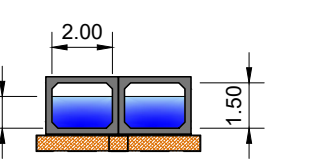
CONFIGURAÇÃO P/ PLOTAGEM		
Nº DA COR	Nº DA PENNA	ESP. DA PENNA
1	7	0.10
2	7	0.20
3	7	0.30
4	7	0.50
5	7	0.70
6	7	0.90
7	7	0.25
20	1	0.20
21	7	0.15
30	7	0.30
50	2	0.20
100	3	0.30
150	5	0.25
170	5	0.50
182	182	0.20
251	251	0.20
ESC. P/ PLOTAR 1:500		



```

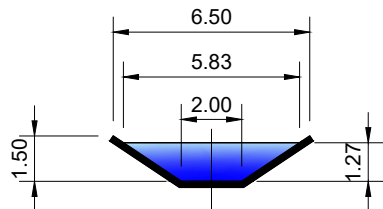
MANNING FORMULA : TRAPEZOIDAL )
- v = (k/n) * r^(2/3) * i^(1/2) (manning formula)
- k = conversion factor = 1.49
INPUT
-B(m) : bottom breadth = 2.0
-H(m) : height = 1.5
-z : side slope = 1.5
-h : slope = 0.005
-n : roughness coefficient = 0.023
-r : relative depth (h/H ratio) = 0.85
OUTPUT
-h : normal depth = 1.27550m
-a : area of flow = 4.98644m^2
-p : wetted perimeter = 6.53708m
-R : hydraulic radius = 0.758616m
-b : width of open surface = 5.82500m
-hm : hydraulic mean depth = 0.85638m
-vm : mean velocity of flow = 2.55172m/s
-q : flow rate = 12.72908m^3/s
-q : flow rate = 17.36759m^3/s (FULL)
-fr : frroue number = 0.88055 (subcritical flow)

```

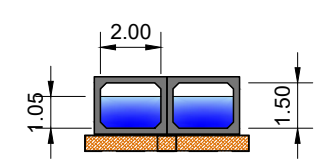


BUEIRO 2
L= 8.00 m

[MANNING FORMULA : RECTANGULAR]
 FORMULA
 $v = (k/n) \cdot R^{2/3} \cdot i^{1/2}$ (manning formula)
 - k : conversion factor = 1.0
 INPUT
 - B(m) : breadth of box = 2.0
 - H(m) : height of box = 1.5
 - barrel = 2.0
! : slope = 0.004
 - n : roughness coefficient = 0.013
 - r : relative depth(h/H ratio) = 0.7
 OUTPUT
 - a : area of flow = 1.05000m²
 - a : area of flow = 4.20000m²
 - p : wetted perimeter = 8.20000m
 - R : hydraulic radius = 0.51220m
 - b : width of open surface = 4.00000m
 - hm : hydraulic mean depth = 1.05000m
 - m : mean velocity of flow = 3.11442m/s
 - q : flow rate = 13.08058m³/s
 - q : flow rate = 18.15478m³/s (h/H= 90%)
 - fr : flow number = 0.97059(subcritical flow)



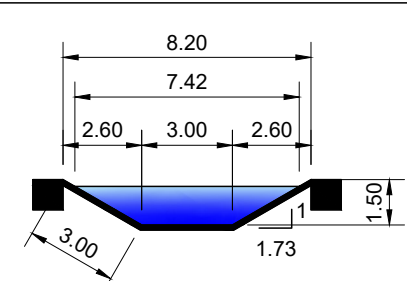
MANNING FORMULA : TRAPEZOIDAL]
FORMULA
v = (k/n)*r^{2/3}*(2/3)*1/(2)(manning formula)
k : conversion factor = 1.49
n : roughness coefficient = 0.023
B(m) : bottom breadth = 2.0
H(m) : height = 1.5
z : side slope = 1.5
l : slope = 0.005
n : roughness coefficient = 0.023
r : relative depth(h/n ratio) = 0.85
OUTPUT
h : normal depth = 1.27500m
a : area of flow = 4.98844m²
p : wetted perimeter = 6.93708m
R : hydraulic radius = 0.75616m
b : width of open surface = 5.82500m
hm : hydraulic mean depth = 0.86263m
v : mean velocity of flow = 2.55172m/s
Q : flow rate = 12.72309m³/s
q : flow rate = 17.36759m³/s (FULL)
fr : froude number = 0.88055(subcritical flow)



BUEIRO 3
L= 8.00 m

2.00
 1.50
 0.50

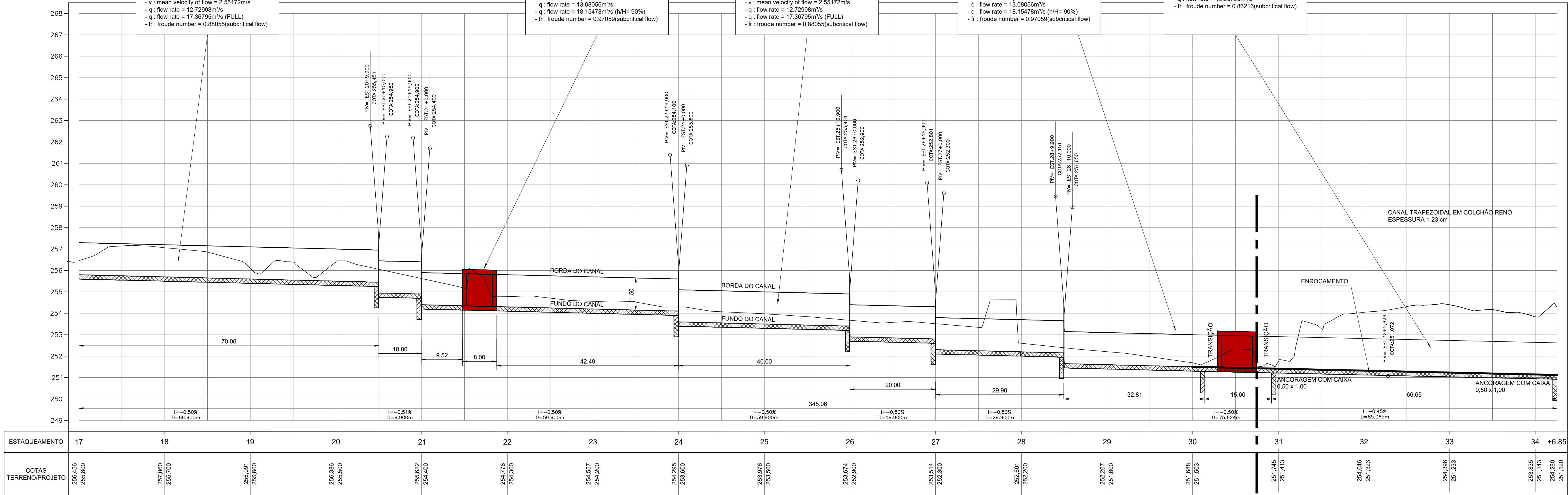
[MANNING FORMULA : RECTANGULAR]
 FORMULA
 - v : $Q \cdot n / (R^{2/3} \times 1 \times (1/2) \cdot (\text{manning formula}))$
 - k : conversion factor = 1.0
 INPUT
 - (B-m) : breadth of box = 2.0
 - (H-m) : height of box = 1.5
 - barrel = 2.0
! : slope = 0.004
 - n : roughness coefficient = 0.013
 - r : relative depth (h/H ratio) = 0.7
 OUTPUT
 - h : hydraulic depth = 1.05000m
 - a : area of flow = 4.20000m²
 - p : wetted perimeter = 8.20000m
 - R : hydraulic radius = 0.51220m
 - b : width of open surface = 4.00000m
 - hm : hydraulic mean depth = 1.05000m
 - v : mean velocity of flow = 3.11442m/s
 - q : flow rate = 13.98095m³/s
 - q : flow rate = 18.15475m³ (h/H= 90%)
 - fr : frume number = 0.97059(subcritical flow)



CANAL PROJETADO

L= 66,65 m

[**MANNING FORMULA : TRAPEZOIDAL**]
FORMULA
 $v = (k/n) R^{2/3} (2/3 \pi)^{1/2} (1/m)$ (manning formula)
 - k : conversion factor = 1.0
 - N/P :
 - B(m) : bottom breadth = 3.0
 - H(m) : height = 1.5
 - z : side slope = 1/3
 - l : slope = 0.0045
 - r : roughness coefficient = 0.023
 - r : relative depth(h/H ratio) = 0.85
 OUTFLOW
 - h : normal depth = 1.27500m
 - a : area of flow = 6.63733m²
 - P : wetted perimeter = 8.09547m
 - R : hydraulic radius = 0.81908m
 - b : width of open surface = 7.41150m
 - hm : hydraulic mean depth = 0.89545m
 - m : mean velocity of flow = 2.55493m/s
 - q : flow rate = 16.9573m³/s
 - fr : friction number = 0.86216 (subcritical flow)



SEGUNDA ETAPA EXECUTADA TERCEIRA ETAPA PROJETADA

[illegible]