

Runoff calculations

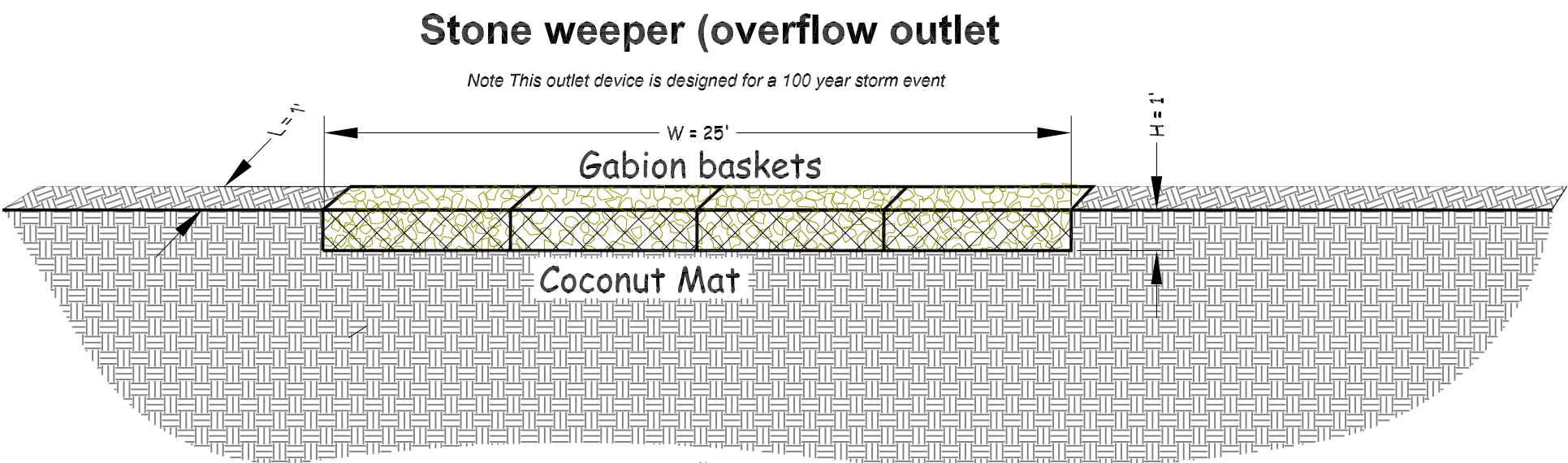
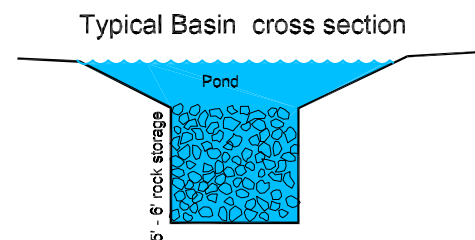
Q = D x A
Q = Total runoff 25 yr event
D = Direct runoff x Curve No. = 5.31" x .98 = 5.2"

Basin 1
D = 5.31" x .98 = 5.2"
A (Roof and walk) = 9550 sq ft
Q= 5.20" x 9550 sq ft = **4138 cu ft**

Basin capacity = pond + rock storage
Pond = 3018 cu ft
Rock storage = 1200 cu ft
Total storage = **4218 cu ft**

Basin 2
D = 5.31" x .98 = 5.2"
A (Road & parking) = 19,480 sq ft
Q= 5.20" x 19480 sq ft = **9110 cu ft**

Basin capacity = pond + rock storage
Pond = 6500
Rock storage = 3000
Total storage = **9500 cu ft**



$$Q = \frac{H^{3/2}W}{(L/D + 2.5 + L^2)^{1/2}}$$

Q = Total flow through dam (cfs)

H = Ponding depth = 1'

W = Total width of weeper = 25'

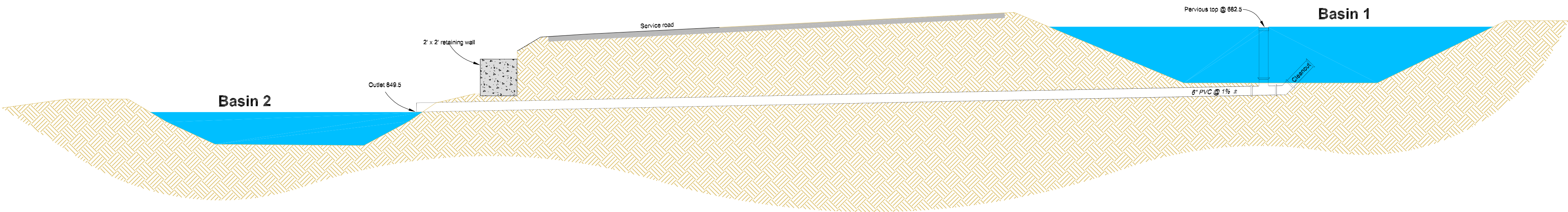
L = Horizontal flow path width = 1.5

D = Average diameter of rock = .5'

$$Q = \frac{1^{3/2} \times 25'}{(1'/.5 + 2.5 + 1^2)^{1/2}} = \frac{1' \times 25'}{(2 + 2.5 + 1)^{1/2}} = \frac{25'}{2.34} = \mathbf{10.68 \text{ cfs}}$$

Existing CFS (100 yr. storm) as per TR-55

11.04 cfs



La Crosse Veterinary Clinic Site Plan
Details and calculations