Artificial Wetlands for Storm Water Treatment

Pete Wood - DNR

Natural Wetland

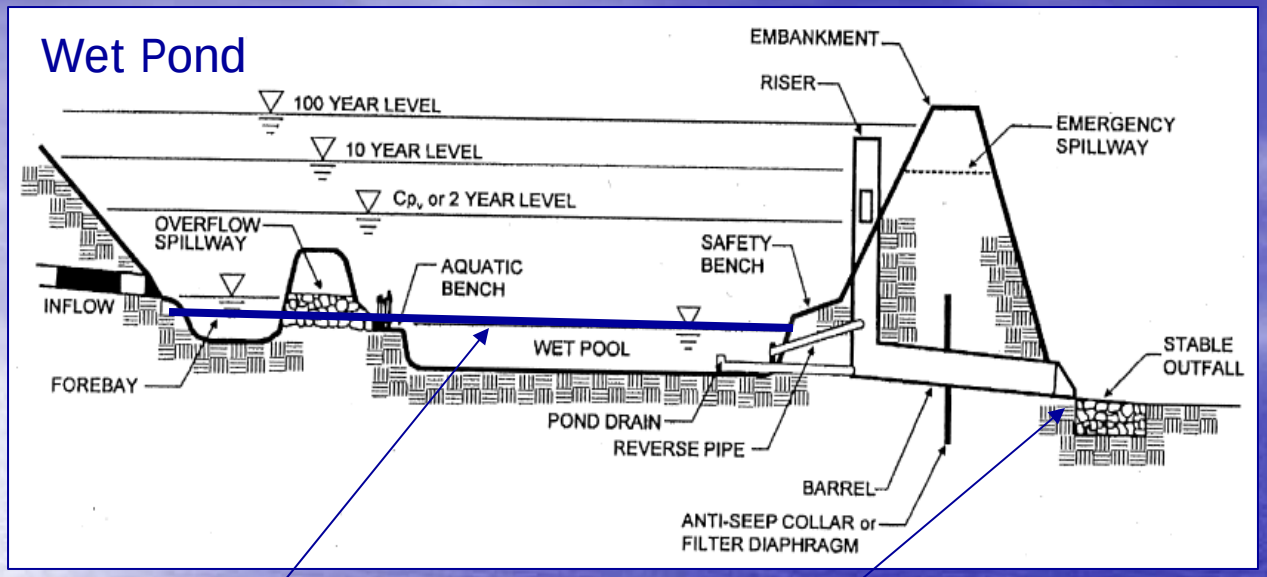
Artificial Wetland

Wet Storm Water Pond

Wetland Storm Water Pond

Pollutant Removal

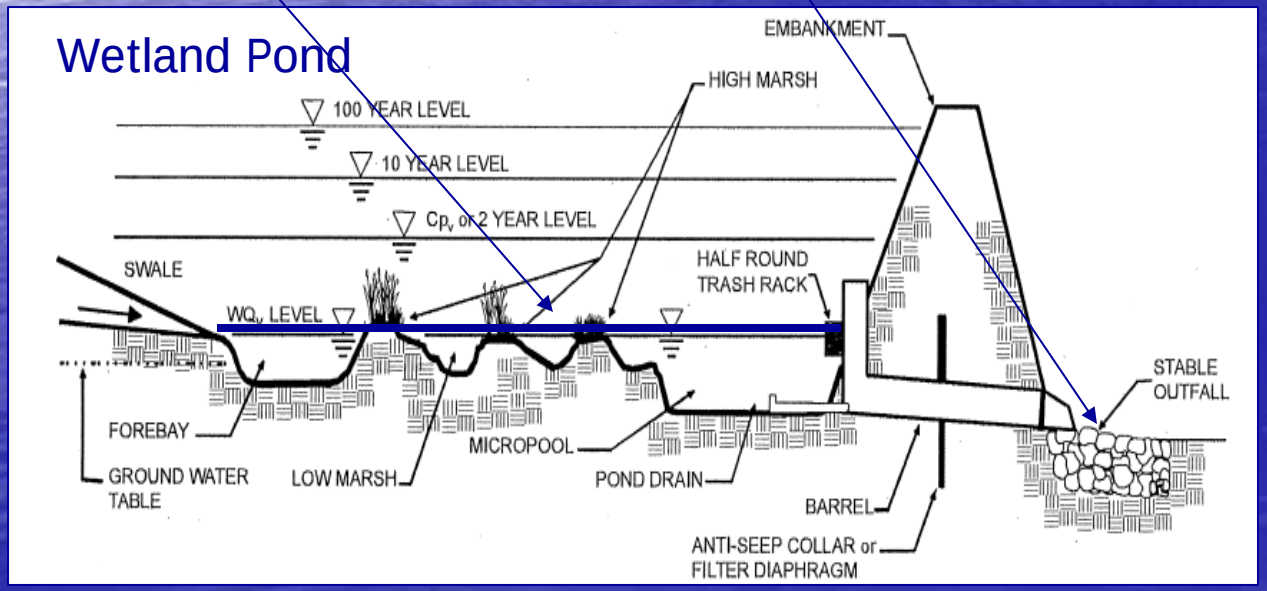
Wet Pond



- Surface Area (Sa)
- Outflow Rate (Qo)

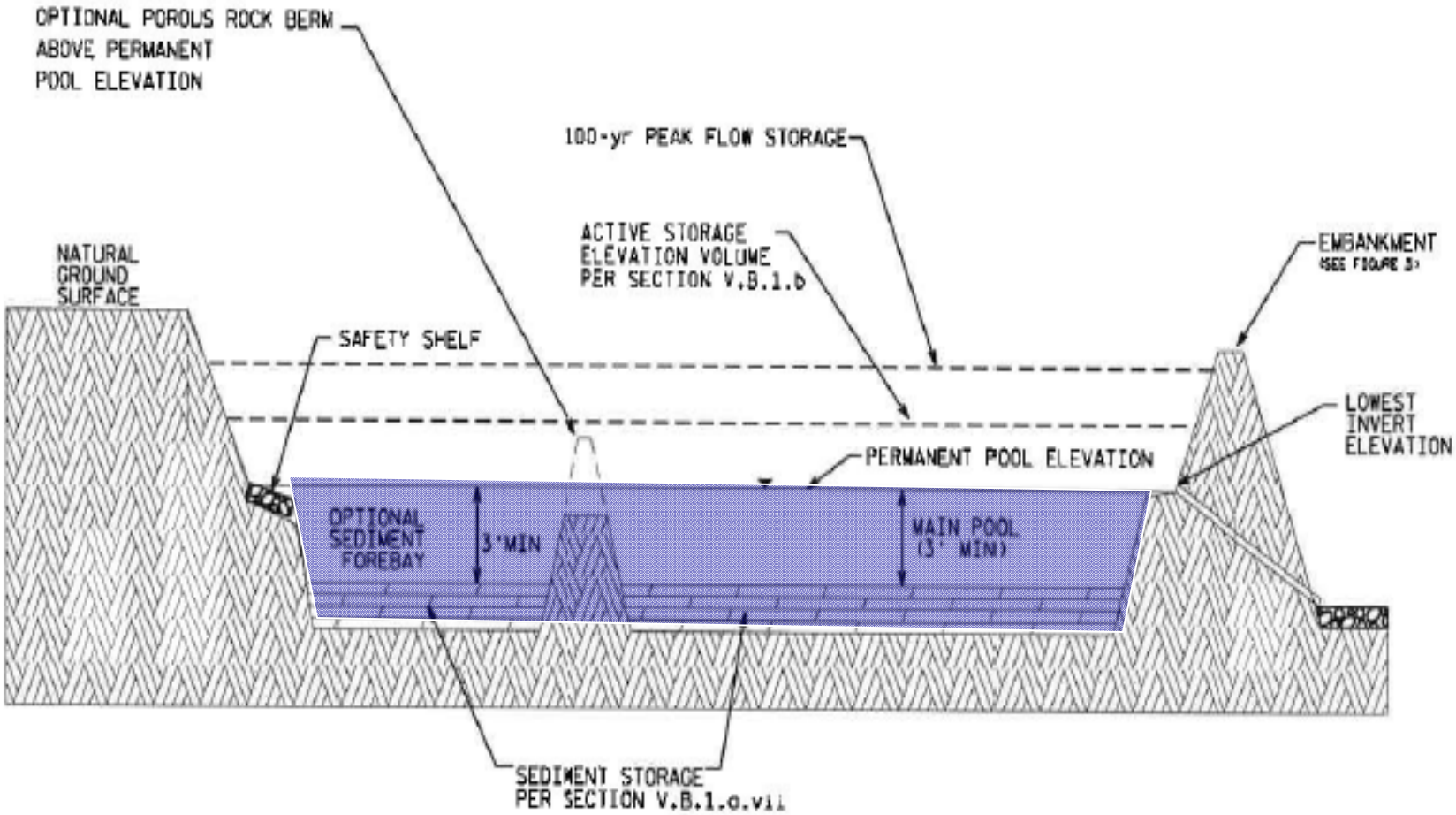
$$Sa = Qo/Vs$$

Wetland Pond



Vs=Particle settling velocity

Pollutant Scour – Wet Ponds

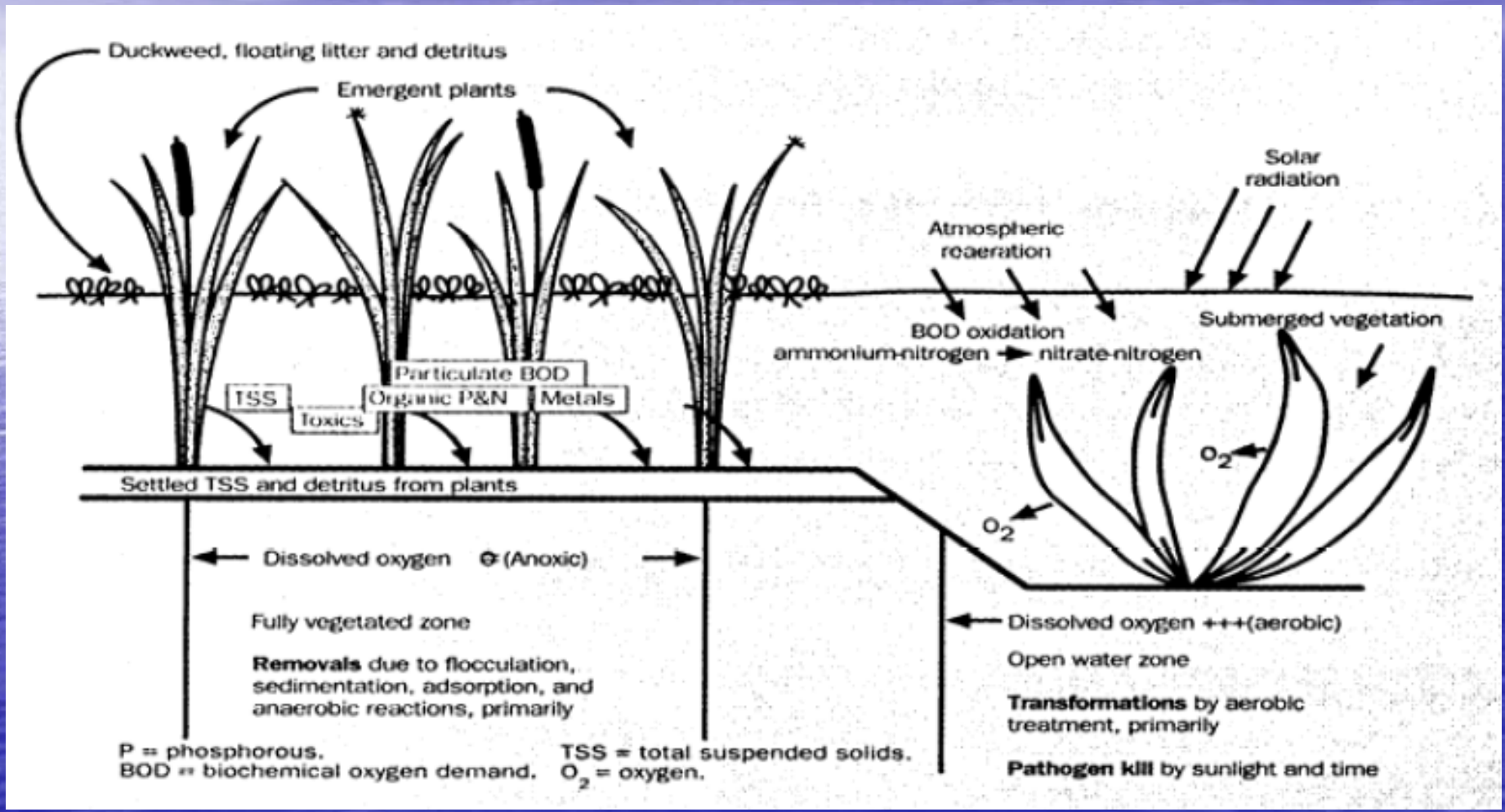


Pollutant Scour – Wetland Ponds

- WinSLAMM v9.3
  - Scour reduction function added for ponds less than 3-ft deep
- Example: 100 acre residential development with 1-acre pond

Pool Depth (ft)	***TSS Reduction***
0.5	11%
1	24%
2	48%
3	73%
4	73%

Why Wetland Ponds?



- Aesthetics
- Site Constraints

Do Wetland Plants Prevent Pollutant Scour?

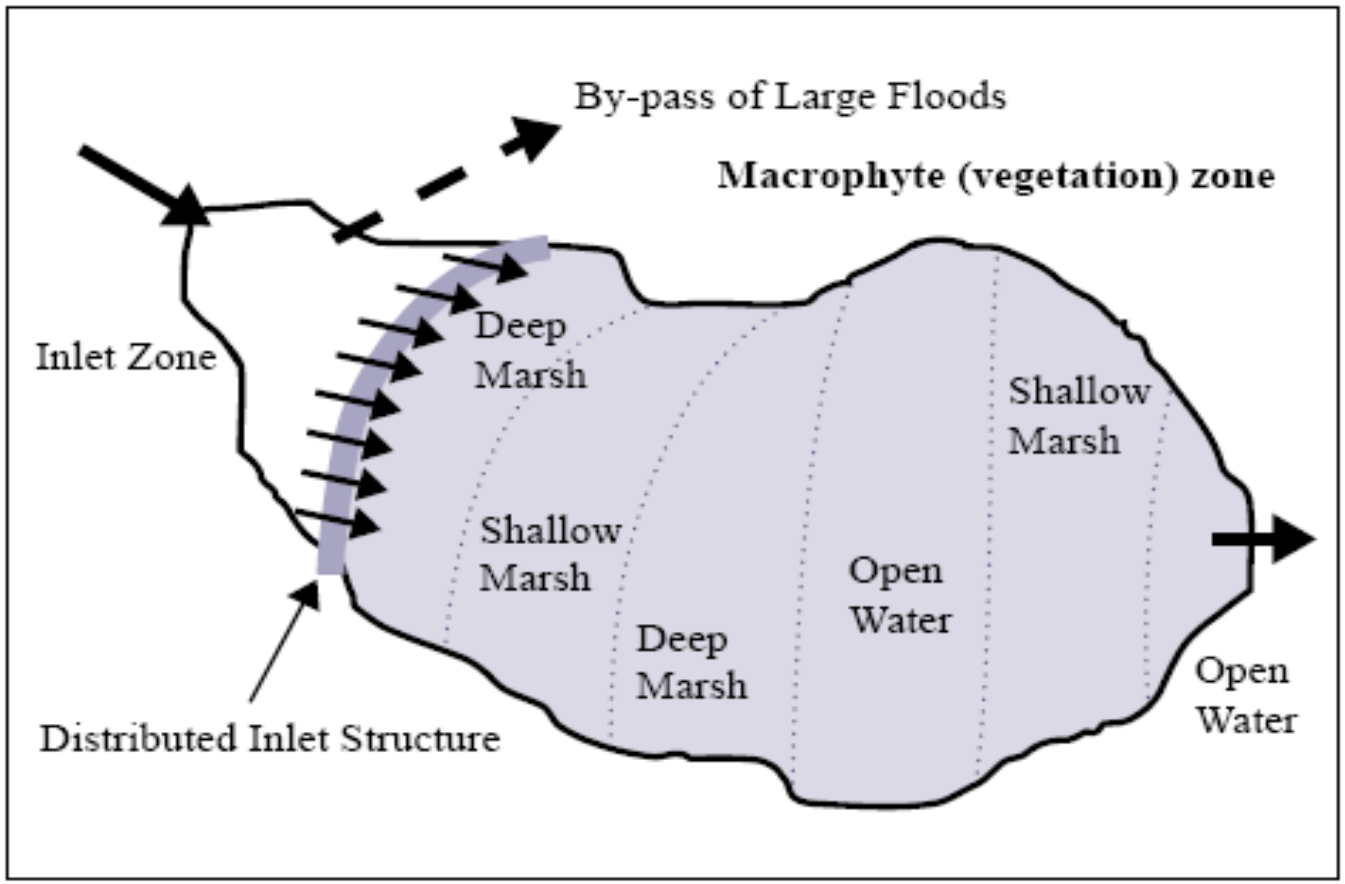
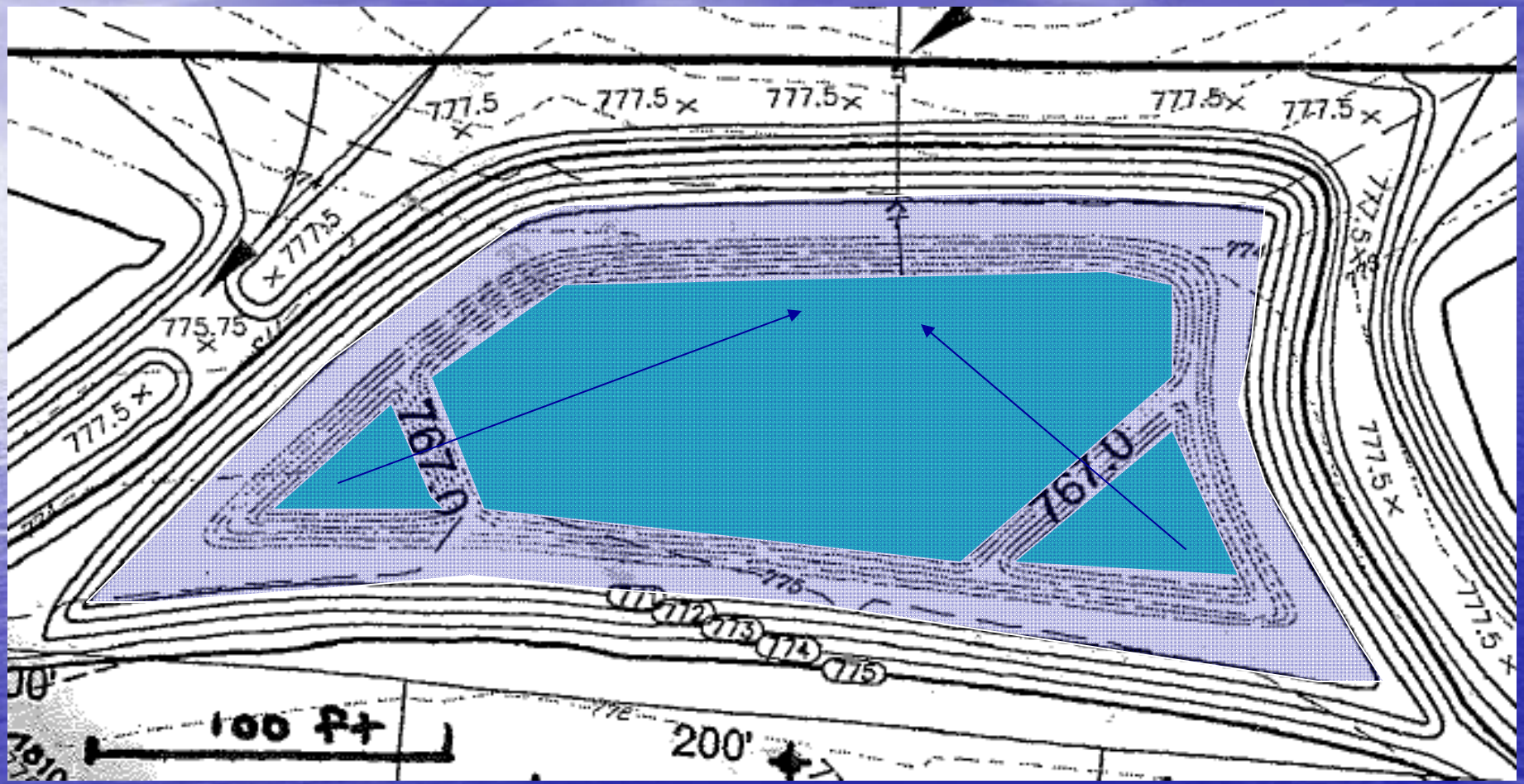
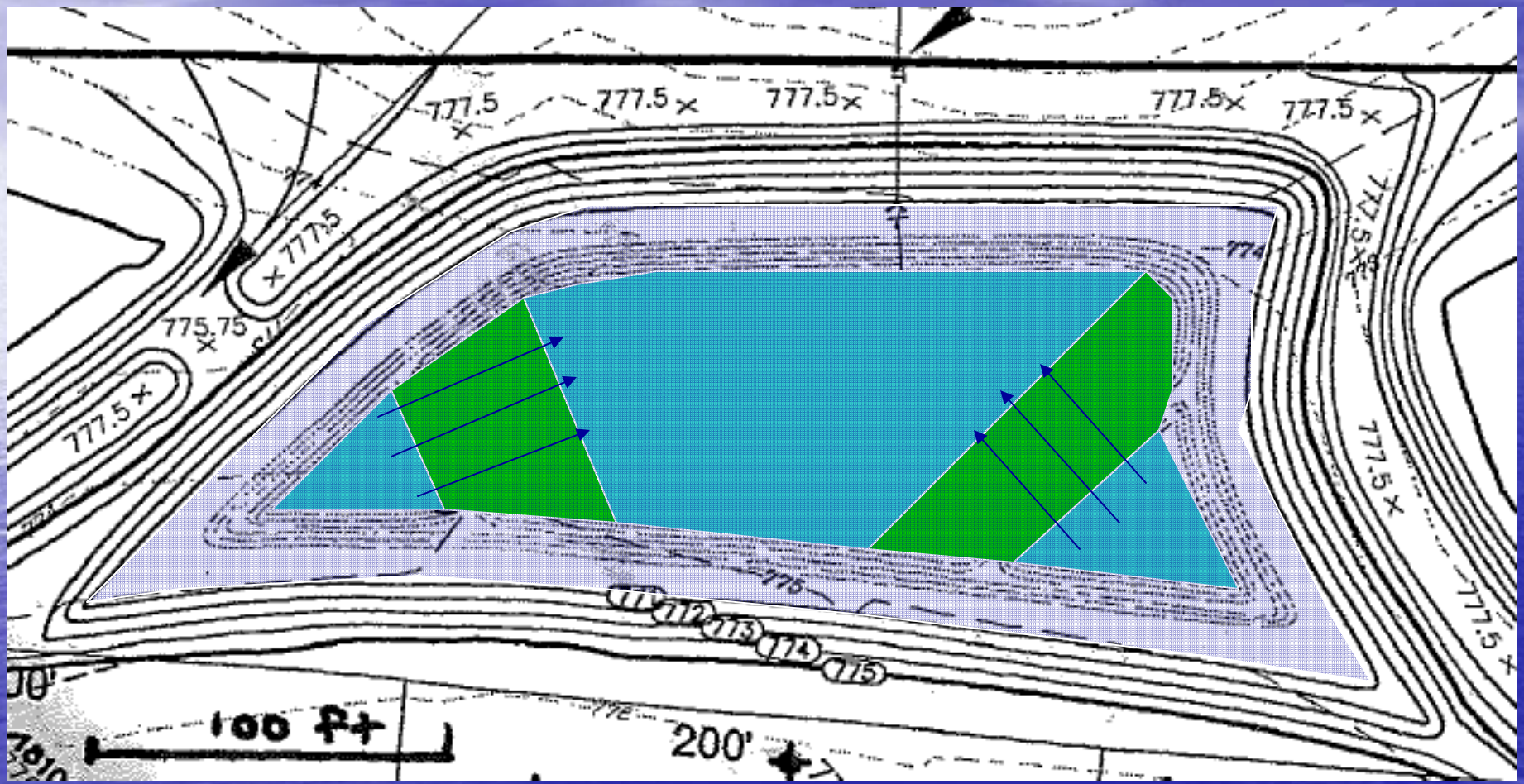


Figure 4: Illustration of a typical constructed wetland system layout


777.5
777.5
777.5
777.5
777.5
777.5
775.75
777.5
767.0
767.0
776
111
112
113
114
115
100 ft
200'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100 ft
200'

Wetland Plants

Maintenance