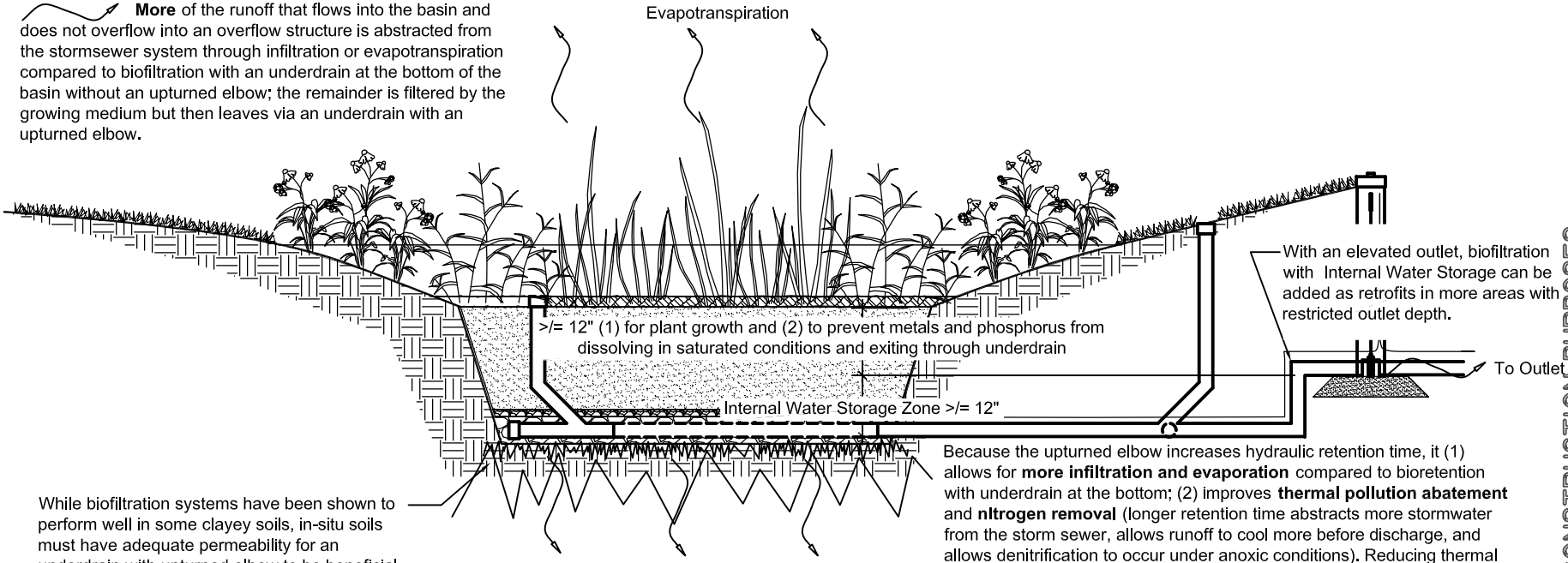
Biofiltration with Internal Water Storage

More of the runoff that flows into the basin and does not overflow into an overflow structure is abstracted from the stormsewer system through infiltration or evapotranspiration compared to biofiltration with an underdrain at the bottom of the basin without an upturned elbow; the remainder is filtered by the growing medium but then leaves via an underdrain with an upturned elbow.



While biofiltration systems have been shown to perform well in some clayey soils, in-situ soils must have adequate permeability for an underdrain with upturned elbow to be beneficial.

Because the upturned elbow increases hydraulic retention time, it (1) allows for **more infiltration and evaporation** compared to bioretention with underdrain at the bottom; (2) improves **thermal pollution abatement** and **nitrogen removal** (longer retention time abstracts more stormwater from the storm sewer, allows runoff to cool more before discharge, and allows denitrification to occur under anoxic conditions). Reducing thermal pollution is especially beneficial for temperature reductions in trout waters.

Figure 2-4: Biofiltration with Internal Water Storage

Not To Scale

NOT FOR CONSTRUCTION PURPOSES

NO.	REVISION DESCRIPTION	DATE	BY

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Print Name:

Sign Name: License No.

Date

Date

Designed By

Drawn By

Sheet No. of Sheets