

# Basin Design Criteria

New Federal Guidelines require all sediment basins over 1 acre to drain from the top of the water column. Below are Wake County's minimum requirements for sizing the sediment basin and the associated weir (if utilized).

## Sizing the Storage Area

Surface area requirements must be met for all sediment basins.

$435 \times Q^{10^*}$  = surface area required for ALL types of sediment basins.

\*Use minimum  $C=0.5$  for areas draining to basin.

Sediment Basin volume is determined by 1,800 cu/ft per Drainage Acre.

Wake County Custom Basin volume is determined by 3,600 cu/ft per Drainage Acre.

The maximum depth allowed is 4 feet. (from bottom of basin to weir)

The minimum depth required is 2 feet. (from bottom of basin to weir)

The floor of all basins should be roughly level.

Basin should dewater in 3 to 5 days.

Use required Sediment Basin volume (1,800 ft<sup>3</sup> per Drainage Acre) to size skimmer and orifice diameter.

**\*NEW\*** View the Wake County Hybrid Sediment Basin Design Spreadsheet [here](#).

## Sizing the Weir

Weir Equation: (Minimum weir length of 10')

$Q = CLH^{3/2}$ .  $C=3.0$  (max).  $H$  for  $Q$  is not to exceed 0.5'.

An additional 1.0' of weir capacity is required for the conveyance of larger storm events; therefore, the total weir depth will be 1.5'.

A minimum weir length of 10' is required.

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Show calculations for skimmer sizing and drawdown.

Show calculations for the sizing of the anti-flotation block.