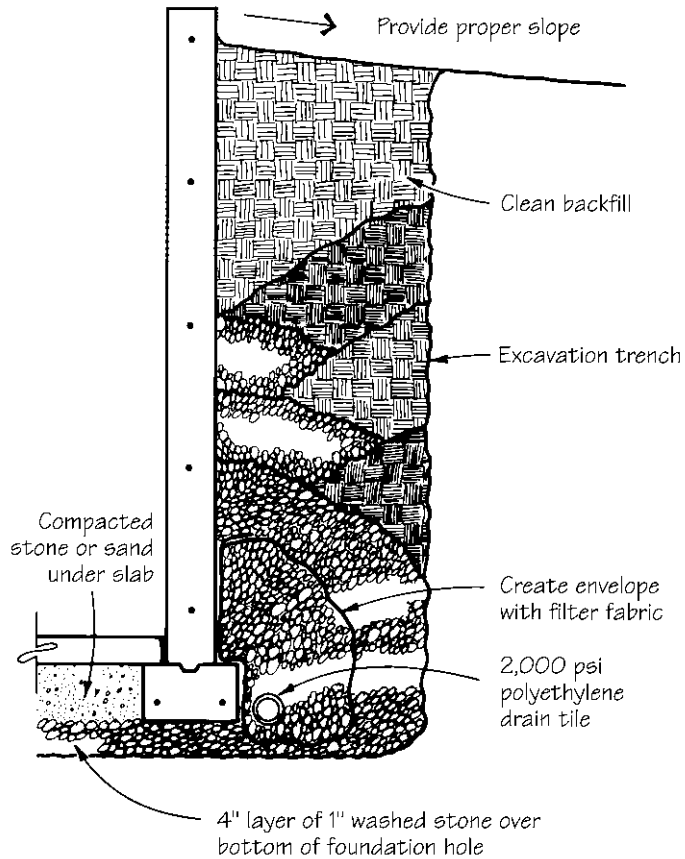
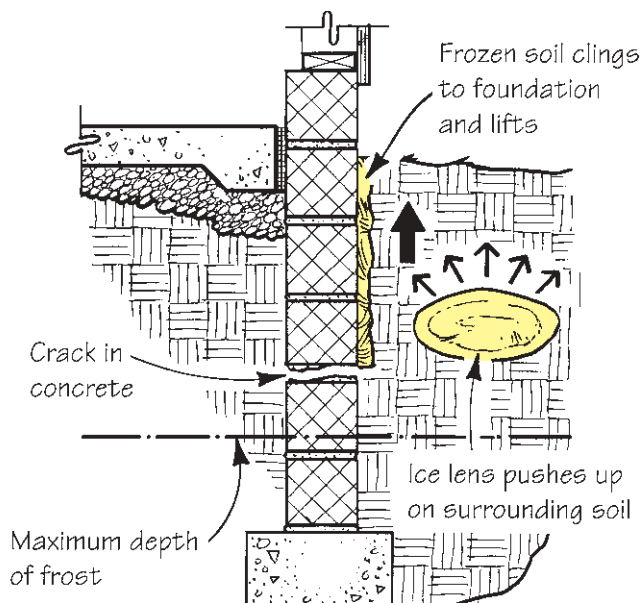


FOUNDATION DRAINAGE

Washed stone, heavy-gauge polyethylene drain tile, and high-quality filter fabric are the main ingredients in a long-lasting foundation drain. ("Laying the Groundwork: Tips From an Excavator," 3/92)



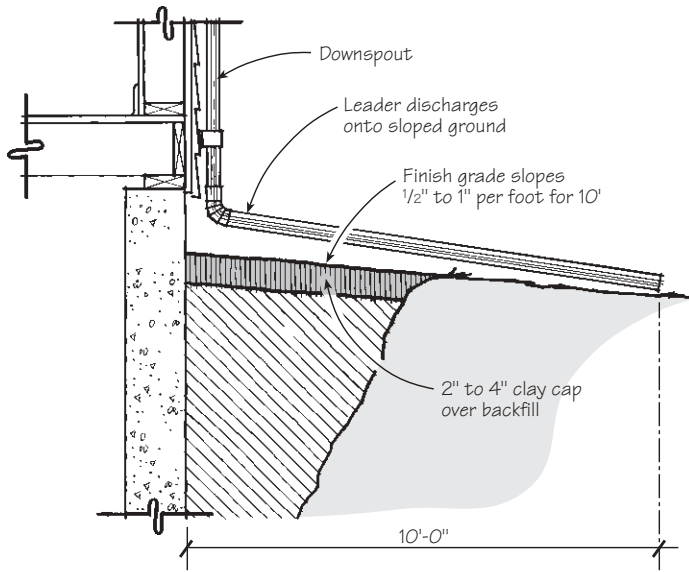
How Frost Cracks Foundations



As the soil around an unheated building freezes and expands, it can "grip" the foundation and lift the wall apart. Although block walls are particularly susceptible, poured concrete walls can also be damaged. Good drainage is the solution. ("Avoiding Foundation Failures," 7/96)

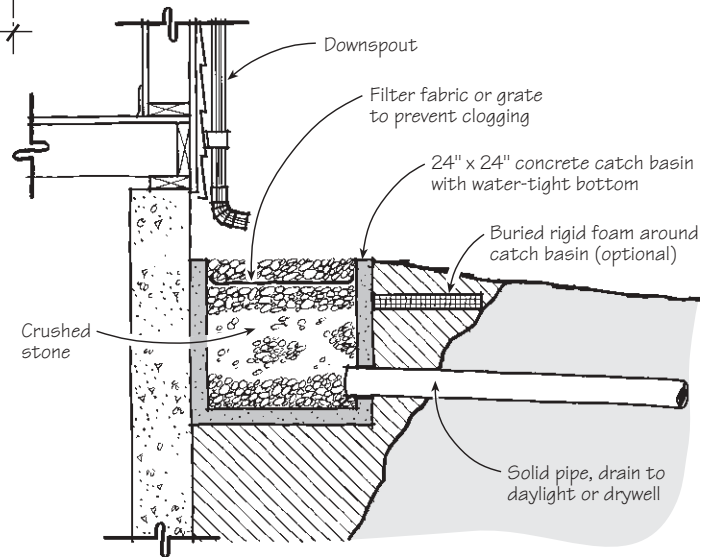
FOUNDATION DRAINAGE

Downspout With Sloped Leader

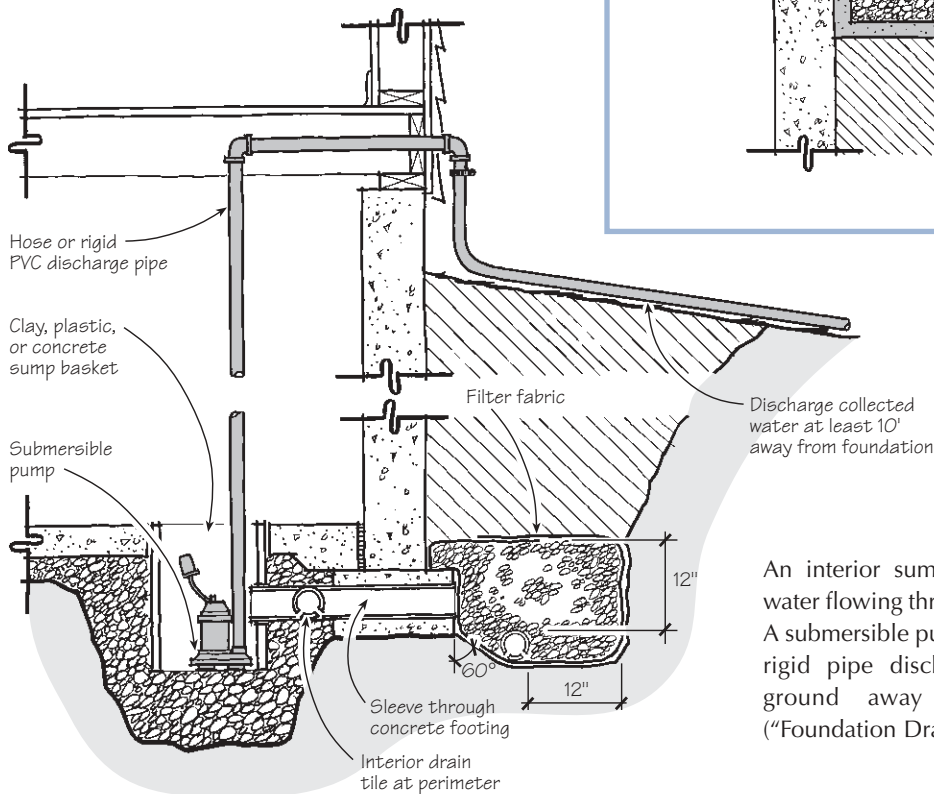


Sloped downspout leaders should discharge at least 10 feet away from the foundation wall (left). Use solid drain pipe to carry runoff from a concrete catch basin to daylight or a drywell (below). ("Foundation Drainage," 3/99)

Downspout With Catch Basin



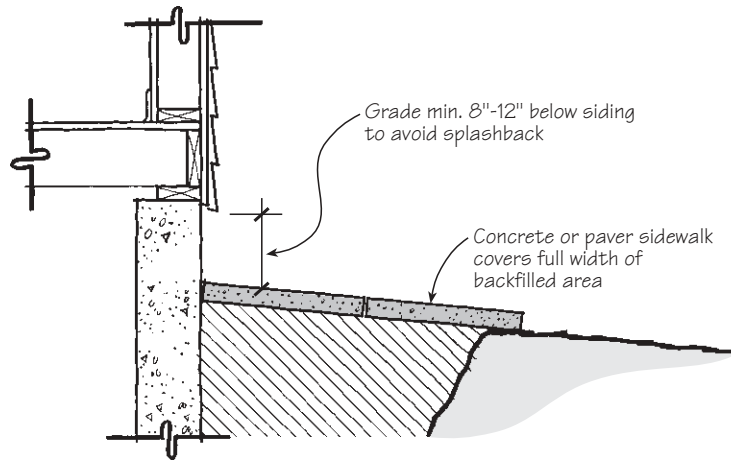
Interior Sump Basket



An interior sump basket picks up excess water flowing through sleeves in the footing. A submersible pump connected to a hose or rigid pipe discharges the water on the ground away from the foundation. ("Foundation Drainage," 3/99)

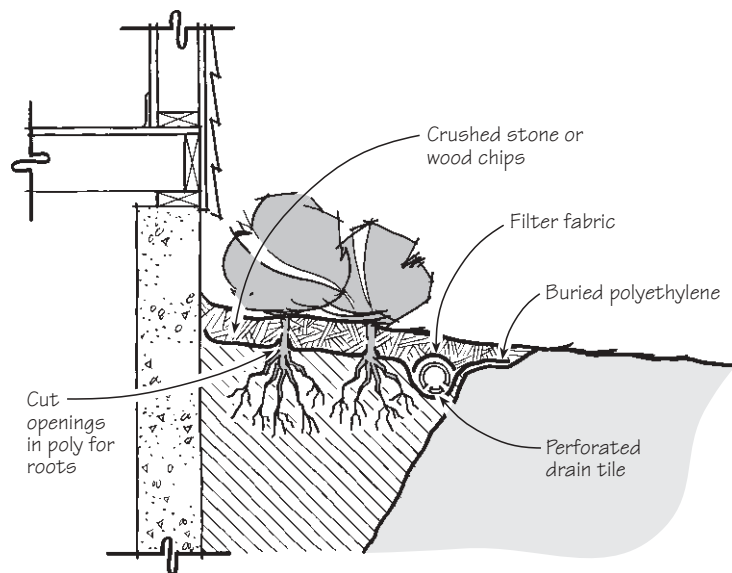
FOUNDATION DRAINAGE

Concrete or Paver Sidewalk



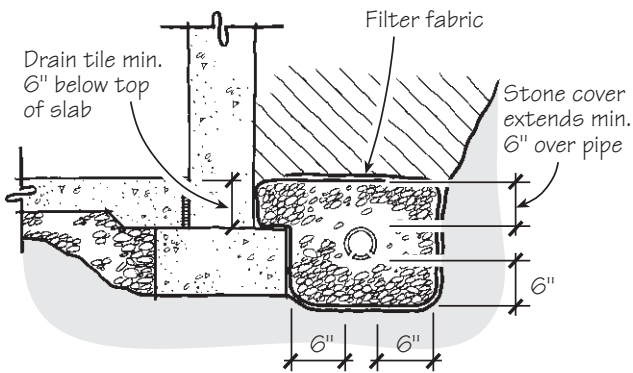
Plant Bed With Drain

A properly sloped concrete or paver sidewalk will reduce the amount of runoff that percolates through the backfill (above). Where perimeter plantings are used to landscape, improve drainage by burying a sheet of polyethylene below the plant bed, with openings cut out for roots (right). Tie shallow perforated drain tile to solid pipe to carry water to daylight or a dry-well. ("Foundation Drainage," 3/99)

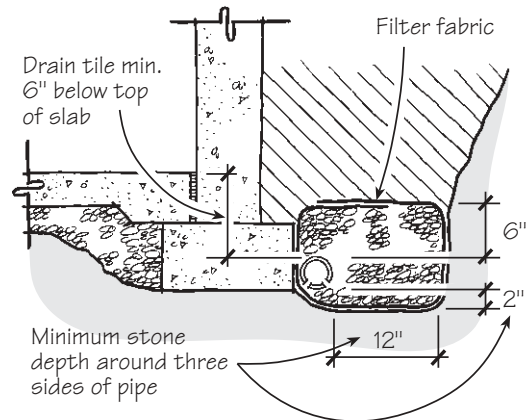


FOUNDATION DRAINAGE

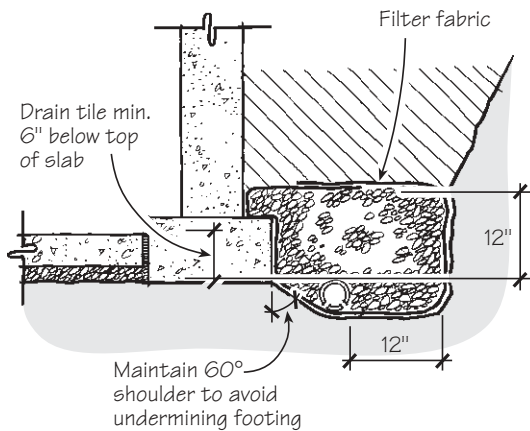
Pipe Even With Top of Footing



Pipe at Bottom of Footing



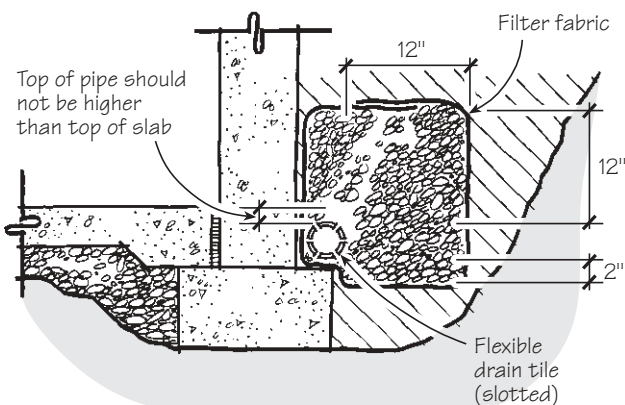
Pipe Below Footing



The best location for rigid drain tile is alongside the footing. Minimum requirements for stone cover depend on whether the tile is flush with the top of the footing (top left) or the bottom (above). In either case, the top of the interior slab should be at least 6 inches above the top of the drain tile. The pipe can be laid level or pitched slightly.

Where drain tile must be located lower than the bottom of the footing (left), avoid undermining the footing by keeping the pipe outside of a 60-degree angle measured from the corner of the footing. This location also requires more stone cover for the pipe. ("Foundation Drainage," 3/99)

Pipe Resting on Footing



To keep flexible drain tile from developing low spots that will collect silt, place it on top of the footings, making sure that the top of the pipe is not higher than the top of the interior slab. ("Foundation Drainage," 3/99)