

Part 2: Blueprint to Basin – Preparing and Digging Your Rain Garden (published 2026-05-16)
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Welcome back, gardeners! Now that we've mapped our yards, it's time to move from the drawing board to the yard. In this second installment, we are digging into the "how-to" of construction. While it is tempting to view a rain garden as just another flower bed, it is actually a high-performance piece of backyard engineering. Unlike a traditional "water garden" designed to stay wet, this basin is a transition zone. It captures water, filters it, and the water vanishes within a day.

In Northeast Tennessee, our terrain is rarely flat, but hydrology remains simple - water flows downhill. To protect your home's structural integrity, your garden must be placed downslope from your house. Building a basin upslope is like aiming a loaded water gun at your foundation; gravity will eventually push that water into your basement or crawlspace.

Critical Site Constraints:

- **The 10-Foot Rule:** Place your garden at least 10 feet from the foundation to prevent seepage.
- **Slope Limits:** Your site should have a slope between 3% and 10%. To check this, place two stakes 10 feet apart (the "run"). Tie a string level between them. Measure the vertical distance from the string to the ground at the downhill stake (the "rise"). A 6-inch rise over a 10-foot run equals a 5% slope—perfect for a basin.
- **Septic and Wells:** Stay 25 feet away from septic tanks, drain fields, or wellheads.
- **Utilities:** Avoid public rights-of-way and drainage ditches.

Proper sizing ensures your garden isn't overwhelmed by a sudden Appalachian downpour. We size the garden based on the impervious area (roofs or driveways) draining toward it.

- **Drainage Area:** Multiply length by width (e.g., a 20' x 43.5' roof section = 870 sq. ft.).
- **Apply the Rule:** Use the 20% rule (Area x 0.20) or the 1/6th thumbprint (Area x 0.17).
- **The Result:** For an 870 sq. ft. roof, your garden should be roughly 145 to 174 sq. ft.

Our sticky clay is excellent for making pottery but terrible for drainage. For a rain garden to work, we must replace it with a best management practice soil mix to ensure a 24-hour drawdown.

- **The Recipe:** Use a ratio of sand to topsoil between 1:1 and 4:1, depending on how much clay you started with. Add a layer of compost to boost filtration.

- The Ribbon Test: Squeeze a moist ball of soil and push it out between your thumb and forefinger. If it forms a ribbon longer than two inches without breaking, it has too much clay and needs more sand and topsoil.
- The Goal: Your mix should allow the garden to empty within 24 hours, keeping our local mosquitoes from moving in.

To keep the water in its place, your basin requires specific structural elements:

- Ponding Depth: Your finished basin should have a flat bottom, 6 inches deeper than the surrounding lawn.
- The Inlet: This is where water enters. If it arrives as sheet flow (spreading over grass), no special armor is needed. If it is confined flow (from a pipe or downspout), you must line the entry point with stones to prevent the water from carving a trench through your new soil.
- The Berm: On the downhill side, use your excavated native clay to build a compacted berm—a sturdy earthen rim that holds the water like a bowl.
- The Overflow: Every garden needs a Plan B. Create a small notch or indentation in the top of your berm. This ensures that during extreme weather, excess water exits safely toward a lawn or storm drain rather than eroding your garden walls.

You’ve done the heavy lifting! By mastering the math and the mix, you’ve built a foundation that protects your home and our landscape.

Join us for Part 3: The Greenery, where we’ll pick the best native plants to turn your functional basin into a backyard beauty.

Resources

“Rain Gardens for Tennessee: A Homeowner’s Guide,”

<https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2023/10/W1137.pdf>

“Rain Gardens,” <https://tnyards.utk.edu/raingardens/>

How do I ask a question?

If you have questions for the Master Gardeners, submit them to us on our website at www.netmga.net. Click the link at the top of the page, “ASK A MASTER GARDENER” to send in your question. Questions that are not answered in this column will receive a response from a Master Gardener to the contact information you provide.

The Master Gardener Program is offered by the University of Tennessee Extension. The purpose of the Master Gardener program is to train people as horticultural-educated volunteers. These

volunteers work in partnership with the local Extension office in their counties to expand educational outreach, providing home gardeners with researched-based information.