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Runoff Reduction Plan

The Runoff Reduction Plan Set provides top views and cross sections of the rain gardens and rock infiltration pits to be installed.

Silt fence must be installed below any areas of excavation or where excavated or construction materials are placed.

All areas disturbed during construction to be seeded with a lawn grass mix suitable for shade.

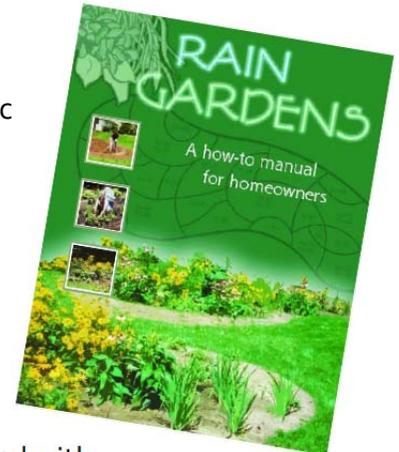
Rain garden and infiltration pit locations are indicated on the top view site diagram.

- **Confirm utility locations Diggers Hotline prior to beginning construction.**
- Be sure to avoid the use of heavy equipment in the proposed rain garden; it will compact the soil and decrease infiltration.
- Rain garden planting layouts and plant lists are found in the plan set.

Installing rain gardens

The process for installing the rain gardens is outlined in detail in the *Rain Gardens: A how-to manual for homeowners* publication. The basic steps are as follows:

1. **Locate Utilities.** They were previously marked for planning purposes but must be remarked for construction.
2. **Dig the rain garden** (page 12) The rain garden will be 9 inches deep and level at its base (allowing for 3 inches of shredded bark mulch), with effective depth of 6 inches. An extra foot is excavated at the rain garden bottom only then filled with a 70/30 sand compost mixture. The edges of the garden will slope from ground level to the garden's base.
3. **Construct a retaining wall** on the uphill side of the rain garden. The retaining wall will be 10 feet long and 24" tall (with 6" below grade) and 6" wide. Install filter fabric and drainage rock behind the wall. Construct according to manufacturer's directions.
4. **Level the rain garden** (page 12). It is essential that the base of the rain garden is flat in order to prevent uneven pooling of water within the garden. To maximize infiltration capacity, the water must soak into the ground evenly throughout the garden's base.



The top edge of the berm must be level as well; a low spot could cause channelization of the overflow.

5. **Making the berm** (page 14). See the cross-section diagram. Compact the berm in 4-6 inch lifts for added stability. The berm (top and downhill side) is seeded with shade-tolerant grass and covered with erosion control fabric. *Create a 3 foot wide rock-lined overflow 3 inches lower than the top of the berm. The rock overflow is lined with filter fabric.*
6. **Plant the rain garden** (page 16). Plant the garden with species from the lists and table provided.

Begin by laying down 3 inches of shredded bark or wood mulch. To plant, separate the mulch, dig a hole, sprinkle organic soil amendment, and place the plant in the hole. Press the soil gently around the plant roots and replace the mulch, being careful to keep mulch ½ inch from the stem of plants. Plant recommendations and spacing are included in the tables. You may make substitutions from the Polk County Maple Forest list if desired.

7. **Water immediately after planting.** Plan to water daily for the first few weeks or until the plants are well established. If plants wilt or droop, a repeated watering during the day may be necessary. Once plants are established, water only if prolonged dry periods occur.

Information for maintaining your rain garden is also included in the rain gardens publication (page 17). Like all gardens, it will require some weeding and watering. This is especially important during the first year or so after the garden is installed. Since the plants are native, however, they should require minimal care once established.

Rock Infiltration Pit Instructions:

1. Dig pit of the specified sizes as shown on site diagram. The bottom of the pit must be flat. Extra rock volume is need because of the slope (i.e., the pits are deeper on the uphill sides)
2. Scrape the surface where surface rock is to be laid uphill of the infiltration pits. Slope the surface to the pits.
3. Install a 24 foot, 6" wide trench drain where the driveway and the garage meet. Slope the trench drain to infiltration pit #1. Connect a 4 foot, 6" diameter flexible pipe to the trench drain and install below the filter fabric of infiltration pit #1. Install a 4 foot, 6" trench drain at the end of the sidewalk adjacent to the garage. Slope this trench drain to infiltration pit #2. Connect a 2 foot, 6" diameter flexible pipe to the trench drain and install below the filter fabric of infiltration pit #1
4. Line the sides only of the pit with filter fabric allowing for flexible pipe to enter the rock chamber of the pit. NOTE THE BOTTOM OF THE PIT IS NOT LINED TO PREVENT CLOGGING OF THE FILTER FABRIC.
5. Fill the pit with clean, ¾ to 2 inch washed rock, stopping approximately 6 inches from the top.
6. Add a horizontal layer of filter fabric on top of the rock. Add a layer of filter fabric on the area where surface rock will be placed.
7. Cover the filter fabric with rock to the surface.
8. Reseed and repair any damaged areas of lawn.