RECIRCULATING VERTICAL FLOW CONSTRUCTED WETLAND (RVFCW)

(GENERAL STEPS TO INSTALL THE WETLAND CELL)

Plan View
Wetland Pressure Dosing & Recirculation System
12’x12’ for Residence (300 GPD)
1. Dig the 4-foot (48") hole. Clear the area of roots, rock and big stones. The bottom can be leveled with sand if need it. Sometimes, and depending of type of soil, wood frame could be used to avoid cave in, or if part of the cell is above ground. Be careful with the elevations/grade.

2. Install the liner (20-mil (residential) or 30-mil (commercial) PVC or equivalent)

3. Install the inlet plastic chambers at the front of the wetland. Connect sewer line from septic tank to the plastic chamber. The sewer line can be connected to the center, to the side or the top of the plastic chambers. Install the 4” inspection/clean out ports with screw cap at the corner of the plastic chamber. Here you need the boots and metal clamps to go through the liner.
3.a. The plastic chambers can be installed following the flow. You need more inspections port but installing the chambers in this format probably increase the flow.

4. Install the 4” PVC pipe outlet, and the 4” inspection/clean out ports with screw cap. The 4” solid PVC pipe will be connecting the perforated pipe to the sump pump. Here you will be using the second boot and the clamps. The location of holes is 8-12-4 for 3-rows and 8-4 for 2-rows of holes.

5. Now, you have the liner, the inlet and outlet in place. The wetland cell is ready to receive the stone.
6. Add 24” of the river gravel/stone to the bottom of the wetland cell. Bigger stone can be added around the plastic chamber to improve the water flow.

7. After the cell has reached the 24” river gravel; the second PVC liner should installed. Usually; the 25% in the front inlet is uncovered.

8. After the second liner is on place; add 18” pea gravel leveling all around the cell.
9. Install over the top of the 18” pea gravel the 1” PVC pressure lines and cover it adding another 6” of pea gravel to complete 24” level. The pressure lines bed is connected to the sump pump using 1½” or 2” PVC pipe.
9a. Another option to the PVC pipe on top of the wetland cell is to use drip irrigation lines. This design using drip irrigation allows the sewage to use more efficiently the top aerated pea gravel to improve treatment.

10. Finish the wetland adding river gravel, bigger stone, concrete blocks or wood blocks around the perimeter to create a nice and appealing professional finish. The PVC inspection ports could be cut to the pea gravel level.
11. As soon as effluent is recirculating and weather permitting; the wetland cell should be planted. The idea is to create a conventional garden looking area using perennial plants.

12. This document describes the general steps to install the RVFCW cell. Additional information can be found in the document prepared by the LaGrange County Health Department and Purdue University (Recirculating Vertical Flow Constructed Wetland For Treating Residential Wastewater); which is also available in the LCHD webpage.