Run-off Box Design, Materials List and Assembly Instructions

(for demonstrating erosion, sediment & other pollutant transport & delivery and the importance of ground cover)

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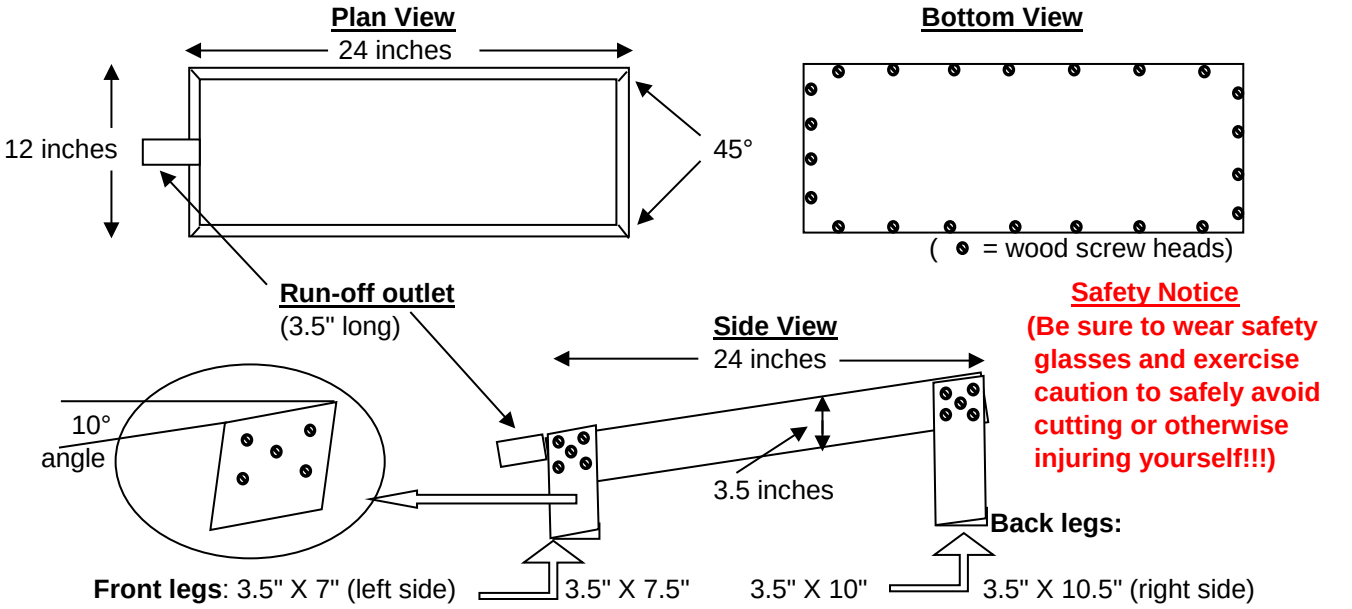

Safety Notice

(Be sure to wear safety glasses and exercise caution to safely avoid cutting or otherwise injuring yourself!!!)

Lumber & plywood needed:	Length in inches	No. Needed for 1 box	No. Needed for 3 boxes
1" X 4" lumber:	24	2	6
1" X 4" lumber:	12	2	6
1" X 4" lumber:	10.5	2	6
1" X 4" lumber:	7.5	2	6
1' X 2' piece of 3/8" plywood	24	1	3

Other Supplies Needed:	
Item	**Notes**
1 & ⅜s" wood screws	5/leg;22 for the plywood
wood glue	for all joints
2.25" (O.D.) Sch.40 PVC pipe, 3.5" long	1 piece 3.5" long cut in half length-wise to create drain outlet;
exterior grade window caulk	for all joints; around the pipe outlet where it joins the wooden box and over all screw heads;
ext. paint & a brush	for all surfaces
common watering cans & clear glass measuring cups	one for each run-off box (the cups are used to catch the run-off)

Notes: **1)** the total length of 1" X 4" needed for 1 run-off box is: 9.00 Ft. **2)** the total length of 1" X 4" needed for 3 run-off boxes is: 27.00 Ft. **3)** An angle must be cut on the top of each leg the bottom edge will remain level due to the difference in length between the front and back legs; **4)** When the boxes are completed it is highly **recommended** that they be stored without soil when not being used; **5)** Run-off boxes covered with sod will deliver sediment during initial use unless adequate time is allowed for the grass roots to get established into the base soil. So either allow for this or simply flush the fine sediments out with repeated "rainfall" events until the run-off is clear before conducting demonstrations in front of an audience. This will save you some embarrassment and a lot of explaining (☺).

Preparation and Assembly Instructions:

1) -cut all 1" X 4" pieces and the 3/8" plywood base for each run-off box you plan to construct; use either a bandsaw or table saw with a fence and a push stick to cut the PVC pipe lengthwise;
2) -cut 45° (mitered) angles on the ends of each 1" X 4" that forms the frame for the run-off box (an alternative would be to simply use lap joints, making sure that 2 of the screws used to attach the legs, are long enough to also secure the lap joints);
3) -mark & cut a 2.25" wide semi-circle for the run-off outlet using a coping saw, bandsaw or other means;
4) -cut a 10° angle on the top of each leg so that the bottom of each leg remains level when attached;
5) -pre-drill all screw holes with a bit smaller than the width of the screws; then dry-fit all pieces together;
6) -apply wood glue to all joints, then assemble with wood screws beginning with the frame, followed by the frame being connected to the plywood base; then attach each of the legs to the frame;
7) -sand if desired or needed and allow the glue to dry for at least 30 min.
8) -caulk all joints, knotholes and screw-heads, then allow to dry per instructions on the tube of caulk;
9) -paint with exterior grade latex paint; apply 2nd coat if desired then allow to dry per paint structions;
10) -fill one with bare soil (sub-soil), one with soil covered with a thick mulch of small grain stubble and one with soil covered by a layer of living sod; use watering cans to create rainfall (let the students make the rain) and run-off events (3-5 seconds of rain is all it takes) and teach soil & water conservation!!!