The Warm Springs Watershed Association installed runoff diverters as a demonstration project on a steep access road in the Greenway Cemetery in Berkeley Springs. The diverters were constructed using repurposed conveyor belting donated by Mellot's Incorporated in Warfordsburg.

The diverters were based on the design described in the attached technical bulletin from The Pennsylvania State University. Two modifications were made to the original design. First, we decided to build using 2x6 treated lumber stringers the full length of both sides of the belting material, rather than on a single side with a shorter scab piece on the opposite side of the joints as shown in the bulletin. For each of our 20' diverters we used four 2x6x10s. One 10' piece was cut in half. The 2x6s were attached to the belting in this configuration: side A- two 10' pieces, side B one 5', one 10', one 5' piece. This configuration staggered the joints and increased rigidity in the assembled unit. We surmised that the extra rigidity would help prevent deformation of the unit when it was installed and also make them a little easier to handle during the installation.

The belting was relatively easy to cut to size using box cutters. We used our straightest piece of 2x6 lumber as a cutting guide. Cutting through the material using two or three successive passes proved to be the best technique.

The second modification was the use of lag screws instead of through bolts with nuts. This was made possible by the double 2x6 stringers. We think the assembly was made slightly simpler this way. We used 3/8" hot dipped galvanized lag screws 3-1/2" long.

Fabrication is straightforward:

Cut belting to desired width.

Clamp 2x6s on opposite sides of belting along one edge. We placed clamps at approximately 2' intervals. Working on several sawhorses will save a lot of bending and kneeling.

Drill clearance holes for lag screws every 2'. The holes should be the same diameter as the screw threads. Only drill through the first 2x6. Rubber particles in the emerging sawdust will indicate when the hole is deep enough. Don't drill directly over a joint, some are on the backside where they can't be seen.

Re-drill through the holes into the second 2x6. These holes should be the size of the shaft in the threaded part of the screws. Drill all the way through the second piece.

Install the lags before removing the clamps. Use washers under the screw heads.

We assembled our diverters in a central location, near to the installation site. The original plan was to manually carry them up the hill to each installation location. The assembled diverters proved to be quite heavy, mostly because the treated lumber used was very wet. Also, the 20' length made them ungainly. A better plan would have been

to prepare the materials at the central location, then do the final assembly at each installation location. Fortunately, a front end loader was available on site to help with moving the diverters.

Installation was straightforward, as described in the technical bulletin. A small power shovel was used to dig the trenches. The diverters were set in the trenches and back filled with crusher run limestone gravel. The back fill was tamped with a power compactor.