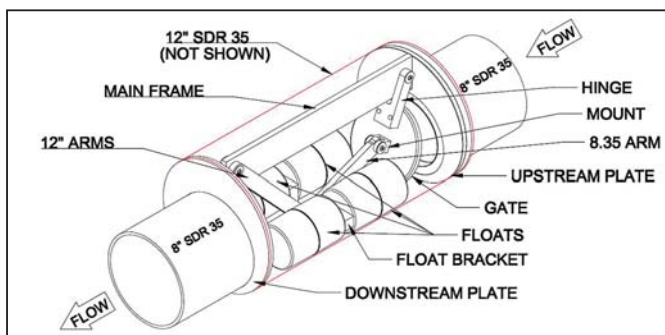




Float-operated Water Gate is designed to replace hand-operated flow controls by automatically controlling water movement at 1-ft. elevation intervals in drain tile.



Unit opens and closes based on water levels downstream.

## Underground Water Gates Provide New Way To Manage Drainage

Keep needed soil moisture and nutrients in tile-drained fields with the new Water Gate from Agri Drain. The stainless steel and plastic float-operated units automatically control water movement for higher yields.

"The Water Gates open and close based on water levels downstream at the lowest outlet in the field," explains Charlie Schafer, Agri Drain, Inc. "We expect them to have a very long life in the ground as they have been tested with more than a million repetitions without any wear."

The Water Gates replace hand-operated

flow controls, which require manual access through above-ground structures that have to be farmed around. With the Water Gates, flow control is underground at 1-ft. elevation intervals in the drain tile.

They are activated by manually opening and closing a single Water Level Control Structure (WLCS) at the lowest point in the field. Up to 10 Water Gates can be installed above a single WLCS. Flexible couplers attach the Water Gates to the tile lines.

To retain water in the field, the WLCS is adjusted to hold at least 24 in. of water, and

water backs up in the first section of tile. The float rises at the first Water Gate upstream and closes the upstream plate for the next section of drainage tile. As water backs up, successive upstream plates are closed, stair stepping soil moisture throughout the field.

"The Water Gates can control the amount of water that leaves a field at a given time," says Schafer. "They provide an opportunity to be more responsive to the needs of the crop and the environment."

Agri Drain is working closely with the Natural Resources Conservation Service on

cost sharing the installation of Water Gates. Cost sharing is already available in many areas. The company is offering training for drainage tile contractors.

Water Gates are list priced at \$750. They are currently sized for 8-in. tile lines or smaller. The company is working on smaller and larger models.

Contact: FARM SHOW Followup, Agri Drain Corp., 1462 340th St., Adair, Iowa 50002 (ph 641 742-5211; toll free 800 232-4742; info@agridrain.com; www.agridrain.com).

## Trailer Ramps Double As A Tailgate

"I built this 6 by 10-ft. trailer for my son Joe, who uses it to haul 4-wheelers and other equipment. Two ramps form the tailgate, which makes it very easy to set up no matter what the trailer is being used for," says 83-year-old Larry Zenz of Parks, Ark.

The ramps are attached to each rear corner of the trailer on hinges made from 3/4-in. pipe and 9/16-in. dia. pins. Where the ramps come together at the middle they intermesh on angle iron brackets and are held secure by dropping a single pin through holes drilled into both brackets. To load something onto the trailer, Zenz removes the ramps from their hinges and hooks them over an angle iron lip at the back of the trailer.

"The ramps swing open like gates and hang

open on each side. I welded an angle iron bracket on the front end of one ramp, and on the back end of the other so the 2 ramps intermesh when they come together. It makes for a strong connection," says Zenz.

He built the trailer itself entirely from scratch. It's equipped with a cedar floor and sides, which he treated with a mixture of waste oil and thinner (1 gal. waste oil and 1 pint thinner). He bought a trailer house axle and cut out 30 in. to narrow it down. He cut old tires in half to use as fenders.

"I also built a similar trailer for my son-in-law in Texas," notes Zenz.

Contact: FARM SHOW Followup, Larry Zenz, 5779 E. Hwy. 28, Parks, Ark. 72950 (ph 479 577-2677; zle7@ipa.net).



A pair of ramps also form trailer's tailgate. To the trailer's fenders, Zenz used tires cut in half.

## How To Build An Electric-Powered "Worker Bee"

For less than \$1,000, you can build a piece of equipment that you can use all year around the farm. It tills up gardens, mows the grass, moves dirt, plows snow and operates a self-dumping power wheelbarrow. And with its quiet electric motor, the neighbors won't even know you are working.

Lonnie Green designed and built the Worker Bee, an electric walk-behind tractor, and he has detailed do-it-yourself plans for it. (His do-it-yourself mini backhoe was featured in Vol. 34, No. 3).

"We have chickens and a garden and I needed something to use year round; I also wanted it to be electric."

Basically, the power unit is a battery pack sitting on a transaxle, he says, noting that the transaxles from riding mowers work great for the project.

The Worker Bee turns on with a key and has a switch to go forward and reverse. Another switch on the handlebar operates the bucket. The motor is 1 hp continuous duty, comparable to a 3 or 4 hp gas engine.

Green and his wife use two versions of the machine. The heaviest Worker Bee weighs about 340 lbs. and has four-12 volt, deep cycle batteries that charge overnight and last through 4 hrs. of hard work. Green only used two batteries in his wife's machine, which is lighter and smaller to maneuver around the

chicken coop. Green installed a solar panel on the top of the motor box that fully charges the batteries in three or four days.

Combined with an inverter, the Worker Bee can also be used to power a plug-in weed eater and other electric tools.

Building a Worker Bee is a good off-season project, Green says, that takes about 50 hrs. to build.

He appreciates the fact that the Worker Bee is a quiet machine that doesn't require fuel. "You can work and carry on a quiet conversation with someone watching you," he says.

Green's 55-pg. plans include sources of where to buy transaxles, motors and other steel and auto parts – many of which farmers may already have. He explains wheel size options and how they affect gear ratios and how to build a bucket, and attach a mower and plow.

"The plans are so thorough you don't need to be an expert. You just need to know how to weld and a little about electricity," says Green, who is a certified welder and worked as an RV technician.

Contact: FARM SHOW Followup, The Greens Machines and Cycles, P.O. Box 441, Cedar Ridge, Calif. 95924 (ph 530 273-4208; www.thegreensmachines.com).



Worker Bee, an electric-powered, walk-behind tractor, is designed to do many different kinds of jobs.



Unit can be used with a bucket to scoop dirt or snow (left) or to operate a self-dumping power wheelbarrow.

