

Twice a day, trail cameras email Luke Perman photos so he can see if his cattle's water tanks have water.

## Trail Cams Monitor Water Tanks

Instead of watching game with his trail cameras, Luke Perman uses them to monitor his cattle's water tanks. Twice a day, after sunup and before sundown, the 3 cameras email him photos so he can see if the tanks have water. He can also check anytime in between.
With three herds in different pastures spread out in a 5 -mile radius, that saves the Hoven, S. Dak., rancher time and fuel. Whenever he moves a herd to a different pasture, he moves a camera with them.
"I have about $\$ 350$ into each camera, which includes solar chargers. Cellular data rates are really reasonable," Perman says. He pays about $\$ 6 /$ month per camera.

The system is less expensive than other monitoring systems, but had higher upfront costs than the first system he set up. Perman experimented with used waterproof Android smart phones and inexpensive cables and battery packs to power them with solar. Using Skype software he could see live video with a $\$ 10 /$ month plan on his cellphone. Though
it was inexpensive, he spent a lot of time keeping everything working, and cell phones aren't designed to be in hot or cold weather.
"The smart phone was good because I had a live video to look at the cattle. And I still use the old phones for security - set in a window in the house looking at the yard," he says. He uses "Alfred", a surveillance app, on the phones.

The game cameras have a higher upfront cost, but are more dependable and designed to be outdoors. Perman purchased cameras from Barn Owl and has been happy with the service and tech support (www.barnowl. tech). He adds there are other companies with trail cameras that would also work.

This summer, Perman plans to install a mobile solar pump and may use a camera to monitor it as well.
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Fire station garage was made by setting a pair of 40 - ft. shipping containers 32 ft . apart and installing a steel roof over them.

## Fire Station Garage Made From Shipping Containers

We were interested when FARM SHOW reader Percival (Mark) Lowell, Jr., told us his local fire department was using shipping containers as a fire station garage.
He and his wife, Marita, lived in Tonopah, Arizona, when a fire station was approved for the community. The Lowells donated one of their commercial acres to build the fire station on, anticipating it would take about half a year to build. Meanwhile, they already had fire trucks that needed to be stored under cover according to the insurance policy.
Lowell had one container and had seen buildings made with them. So another $40-\mathrm{ft}$. shipping container was purchased and leveled up 32 ft . from the first container. Because it was considered "portable" no permits were required to build the temporary fire station garage. A contractor installed a steel roof over the containers and built a partial back wall.
"It stopped about 4 ft . above the ground and we put in a loose plywood panel," Lowell says, adding the front was left open. Winds with speeds up to 120 mph are common in the area, so the design allowed wind to blow through and not damage the building.
Besides serving as side walls for the buildings, the shipping containers provided storage for supplies and equipment. Fortunately the structure proved to be very sound.
"We figured the new permanent fire station would take a maximum of 6 months to build, but it took $21 / 2$ years," Lowell says.
The shipping container building was still in good condition after the fire department moved into its new buildings.
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"It's a lot of work to build a gate like this. But it's eye catching and a lot of people marvel at it," says Bill White about his timber "pole gates"

## He Builds Beautiful Timber "Pole Gates"

"Forty years ago an old friend taught me how to build eye-catching pole gates entirely from lodgepole pine or Douglas fir trees, and I've been putting them up on my ranch ever since. A lot of people marvel at them," says Bill White, a cow-calf operator from Twisp, Wash.

He recently sent FARM SHOW photos of a $20-\mathrm{ft}$. gate made from 4 horizontal bars, which are nailed to a $12-\mathrm{ft}$. high, $6-\mathrm{in}$. dia. vertical pole that serves as a hinge. The hinge pole swivels on a short length of 5/8in. rebar mounted vertically in the center of a 2 -ft. high section of telephone pole, which is buried in the ground. White drilled a $6-\mathrm{in}$. deep hole into the telephone pole section and a corresponding hole into the bottom of the hinge pole, then placed a couple of big washers over the rebar (to reduce friction) and set the pole down over it. The gate is reinforced by a pair of $4-\mathrm{in}$. dia. poles, nailed at a 45 degree angle to the top of the hinge pole and to all the bars on the gate.

The top part of the hinge pole swivels inside a pair of long diagonal braces and a 2-ft. long horizontal support that's nailed onto their top ends to keep the hinge pole rigid. The braces are also nailed to both sides of a big telephone pole located next to the hinge pole, and to a wooden fence.
"It's a lot of work to build a gate like this to cut the trees down, cut the trunks to length, peel them, and then drag them to where you want to build the gate. But it's eye catching and will last for about 30 years before the wood rots," says White. "There's very little expense - just big helix nails and bolts or timber lock screws used in the gate's various


Gate's hinge pole swivels on a short length of rebar mounted vertically in center of a 2-ft. section of telephone pole that's buried in the ground.
joints.
"Such gates are very heavy, but with this kind of hinge setup they're extremely easy to open and close. Even a small kid can open a $20-\mathrm{ft}$. gate."
White says that one time he even made a double gate by placing two $16-\mathrm{ft}$. gates together to make a $32-\mathrm{ft}$. wide opening. "I built it so that a big grain truck could easily fit through when delivering grain to my ranch," he notes.

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