

## **CATTLEGUARDS**

Morgan County, Colorado

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### **Problem Statement:**

How to construct CHEAP cattle guards that were heavy enough as to be immune to road graders, farm machinery, oilfield traffic, blowing sand, and were wide enough for all the aforementioned, but would be relatively maintenance free or easy to maintain. The problem was meeting all those requirements and also keeping cattle from walking across the open gateway.

### **Discussion of Solution:**

We designed a cattle guard using scrap 2 -3/8" oilfield pipe, pieces of 16 x 42lb per foot bridge girders. The base is constructed of the girder steel welded into a rectangle 24 feet long and 8 feet wide, with two separate grates constructed from the oilfield pipe that are supported from inside the base and may be removed separately.

### **LABOR, EQUIPMENT, AND MATERIALS USED:**

30 - 2-3/8" x 11'-4" pipe

86 - 16" x 42lb Steel I-beam

Approximately 160 man hours

Cutting torches, angle grinders, arc welders

### **Cost:**

Zero materials cost! The materials we used were all scrap from our bridge construction. Our only cost was the labor involved. We only worked on this project when there was inclement weather or we had slack time between other jobs. We probably used \$50.00 of cutting torch gases and \$50.00 worth of welding rod.

### **Savings & Benefits:**

We got price quotes from different sources that were in the five to six thousand dollar range. Their durability was possibly equal, but not superior to what we built. We have been building and using these cattle guards for over fifteen years and have only repaired one. The removable grates allow us to leave half of the roadway open to local traffic while we are cleaning accumulated trash and gravel out of the base box, or under the grates. They are wide enough that most farm machinery can fit through without tearing up the machinery. Thus, making the taxpaying landowners happy! They are strong enough to support any type of legal truck load. We have had numerous houses moved

across these cattle guards and none the worse for it. Building cattle guards when the weather is bad allows us to keep our employees occupied. The cost is minimal and the product is superb!

