

ONE MAN CULVERT LOADER

Gilpin County, Colorado

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Problem Statement:

Having the manpower and the equipment needed to load, transport, and unload culvert safely.

Discussion of Solution:

We originally purchased a 25 foot gooseneck trailer to transport our mini excavator and various other small equipment and products, including culvert. Thinking it usually takes two men, a truck with trailer, and a piece of equipment to load culvert, we began looking at adding a crane to our trailer. After looking at several types of cranes we purchased a N H Log Loader. This crane is equipped with a continuous rotation 39" grapple; it will lift 893 pounds at its maximum reach of almost 14' and is powered by a 16 hp electric start hydraulic power pack. The assignment to modify the trailer and make this an efficient piece of equipment was given to David Rich, an Equipment Operator II with an abundance of skills and talents. With many suggestions from almost everyone in the department Dave began cutting apart a brand new trailer and crane. The deck planks were cut and the crane was lowered and mounted between the main-frame beams. The power pack was removed from its original stand and fit under the decking. The outriggers were cut from the crane and fit to the trailer. The original fuel tank was replaced with a more suitable tank for our application. Access doors were fabricated for easy access to the power pack and lower crane. Deck plate was added to the section of deck the grapple will operate most times. An operator's station with all hydraulic controls, ignition switch, choke, and throttle, adjustable seat with seat belt and foot rests was all fabricated and mounted to the main upright boom of the crane. This allows a bird's eye view and a safe location for the operator. This project took about 160 total hours, including design, locating and obtaining parts and materials, and build time.

Cost:

Trailer: \$10,850.00
Crane: \$10,700.00
Steel and Misc. Parts: \$700
Total: \$22,250.00

Savings & Benefits:

One man can now safely load, transport to jobsite, and unload culvert saving us countless

man hours. This piece of equipment will also be a one man operation for log hauling, rip rap hauling, and ripping and hauling willows from road shoulders. More uses remain to be discovered and when not being used for crane operations it is still used to transport our equipment.



Photo 2



Photo 1



Photo 3