¾" RAM PUMP PLANS
AS BUILT BY ROD LAVOIE
USING ALL STOCK PARTS FROM THE HOME DEPOT

1. 1 ¼"x100FT ROLL PVC PIPE
2. 1 ¼" MALE PIPE ADAPTER
3. 1 ¼" GALV COUPLING
4. 1 ¼" x 1" GALV BUSHING
5. (2)-1"x ¾" GALV BUSHING
6. (4)- ¾"x2" GALV NIPPLE
7. (2)-¾" GALV TEE
8. (2)-¾" BRASS SWING CHECK VALVE
9. ¾"x6" GALV NIPPLE
10. 1 ½"x1" GALV BUSHING
11. ¾"x ½" GALV BUSHING
12. ½" HOSE SPIGOT
13. 1 ½" FEMALE PIPE ADAPTER-SCHED 40
14. 1 ½"x10' SCHEDULE 40 PIPE (I USED 5')
15. 1 ½" SCHED 40 GLUE CAP
16. 4"x12"- ¼" MESH GALV SCREEN

ASSEMBLY NOTES: View is from top. Inlet pipe has red stripe. Screen is over inlet of drive pipe. Inlet pipe starts between two rocks in stream where water flows fastest. Outlet hose is green. Top check valve arrow points down, bottom points right. White air chamber is 5 feet long, and pitched up, but not necessarily vertical. Entire unit lays in stream bed. Pump is pitched up slightly to help bottom check valve close. Swing check valves have a flapper swinging on a pin. They have no spring. For normal operation, they must be mounted with the large hex cap up. Mounting it upside down allows water to flow backwards through it, until the velocity picks up the flapper and slams it closed. This creates the pressure pulses. Start pump by opening waste valve with finger. All air must be removed from drive pipe for proper operation. Removing the waste valve may help. Do not use wrenches to tighten fittings. Rotating the tee with the waste valve adjusts flow. The delivery hose can be removed for

flushing. An inlet valve may be added if no rocks are expected to be available to stop flow for service, but I haven't tested the valves with shock waves. Showers are healthy and refreshing ,too. Pressure is not too high. If part substitutions are necessary, just remember that you are trying to create and use the shock waves created when you suddenly stop a column of flowing water. Bigger parts make a bigger pump. Lighter parts make a lighter pump.

PERFORMANCE DATA:

HEAD- 40 INCHES OVER 100 FEET, LIFT- 10 FEET ABOVE PUMP, FLOW- 27 GALS PER HOUR, WILL VARY WITH LIFT, PRESSURE AT 10 FEET- 15 PSI, WILL ALLOW WATER TO BE PUMPED HIGHER.

COST- ABOUT $80.00 FOR PUMP, $24.00 FOR 3 LIGHT DUTY 50 FOOT DELIVERY HOSES.