



SPRINGBOX WITH PUMP

PLACEMENT NOTES

Excavate within 15' of the observed outlet of the spring, but stay securely on solid ground. This drawing assumes that a major spring vein will be uncovered during excavation. If a spring vein isn't located, try moving the springbox hole. Should this fail, the springbox may still be placed where most convenient, and a 4" Schedule 40 PVC pipe installed underground from the spring outflow point, through the side wall of the springbox, to deliver water. Field engineering will be provided should a connector pipe be necessary.

QUANTITIES (SPRINGBOX ONLY)

- 12 Ft. Corrugated metal pipe, steel pipe or equivalent.
- 1 Ea. 1/2 horsepower shallow well pump
- 1 Ea. 12 to 20 gallon pressure tank
- 1 Ea. Springbox lid
- 1 Ea. Foot Valve
- 1 Ea. Pump mounting bracket (usually shop made)
- Lump Sum Backhoe for excavation, placement, backfilling
- Lump Sum Fittings, elbows, misc. for springbox plumbing
- ___ Ft. Wiring (Must be field measured at final selected site)

SAFETY NOTES

1. Electrical work and pump installation shall be done by a qualified person.
2. The electrical lines shall have a positive cutoff outside of springbox so the pump can be disconnected prior to any maintenance work.
3. Never enter the hole when installing the springbox. Soil near springs can cave in at any time.
4. Make sure that the springbox lid is secure and lockable to minimize vandalism and reduce danger to people and animals.

NOTES:

1. Springbox installations can be hampered by excessive water. Construction should be scheduled during late summer or early fall months, when water levels are low.
2. The springbox may be made of either smooth steel pipe or corrugated metal pipe, 36" diameter, 12' long or equivalent, as approved by NRCS.
3. The site should be over excavated with a backhoe, keeping sides as steep as reasonably possible to reduce excavation and backfill quantities. The springbox should be placed so that 10' of the box is placed below the ground level and 2' will stand above ground level. The springbox should have 3' or more of water after filling. Depth of the springbox will need to be adjusted if bedrock is encountered. The excavation and backfill shall be carefully done to ensure proper installation of springbox.
4. Before the springbox is placed in the hole, perforate one side with an acetylene torch, drill or grinder. Align the holes with the observed spring outflow. The holes should be circular and no more than 1/2" in diameter, (or slits, with a grinder) and the pattern should extend from the springbox midpoint to the bottom. The holes shall not be larger than the D₈₅ size of the gravel. A minimum of 25 holes is recommended. These holes, if placed correctly, will all be covered with gravel during backfilling.
5. The pump should initially be set at a 45/35 pressure setting. The pressure setting may be adjusted after initial performance is observed. The pump should be able to pump a minimum of 5 gpm against 40 psi of pressure. A 1/2 horsepower shallow well pump with a 12-20 gallon prefitted pressure tank is recommended.
6. A springbox lid can be constructed from a 4'x 4'x 3/16" steel plate. Weld handles to the lid to allow removal with a tractor. The entire structure may be painted, if desired.
7. For ease of installation, match the internal pipe, elbows and fittings with the pump/tank fitting size. Most 1/2 horsepower pumps use 1" fittings, but check the pump box. Install a foot valve at the inflow pipe base, and keep the foot valve 6 inches above the springbox floor.
8. Backfill initially with clean coarse gravel until the hole is filled at least 2' above the observed spring vein uncovered during excavation. Backfill the remainder of the hole to within 6 inches of the top with soil.
9. The gravel shall be clean, well graded with a maximum size of 3 inches. The D₈₅ size shall be same size as pipe perforations or larger.
10. For additional details see Missouri Construction Specification 574, Spring Development.

DRAFT
NOT FOR
CONSTRUCTION

Date	
Designed	
Drawn	
Checked	
Approved	

SPRING DEVELOPMENT
WITH PIPE TYPE SPRINGBOX



File Name	
Drawing Name	29-N-77
Sheet	of