Installation of a Livestock Line through an existing dam

See diagram on back for visual reference

Stage 1

Excavate a level work area down to approx. ½ ft higher than existing waterline large enough for the excavating equipment to operate.

Stage 2

Excavate into pond as far as the excavating machine will allow (15-20 ft. at least) and down 6 ft. or greater to a suitable depth based on pond site conditions. **Note:** The deeper the inlet placement the more water is available for use during dry times and to create head pressure. Create a pooling area where the Inlet pipe site will be located. Excavate back into the dam 2-3 ft. Assemble Inlet Pipe with 15-20 ft. of gasketed SDR 21 pipe female bell at the downstream end. Make sure all excavation maintains grade towards the valve.

Install inlet assembly by sliding it into the water and allowing it to fill with water. Install capped plug into gasketed female end that is made of 12" of pipe and a cap that is vented with a 1/4" hole to allow trapped air to escape. Attach rope to mark pipe end's location and sink assembly to the bottom of the trench.

Back fill trench while removing its straight sides to allow better compaction (1.5:1 sides). Compact fill with bucket while adding additional fill as needed above existing waterline by at least 1 ft.

Stage 3

Excavate trench on backside of dam down to where the pipe plug that is marked with rope is located and also to the valve box location. Assemble pipe from the plug location to the valve box and install anti-seep collars. Install the valve and leave valve open to allow the pipes pressures to equalize when joining them together. Quickly remove the plug and slip the downstream assembly into the pipeline that is assembled in the dam. Allow the water to flow through the valve for 10 to 30 seconds to clear it of air and debris. Slowly turn valve off to prevent water hammer from pushing the gasketed pipe apart. Apply bentonite along the inner most trench walls to aid in leak prevention. Backfill by removing the straight sides to allow for better compaction (1.5:1 sides). Add fill as needed while compacting with the bucket and machine.

Stage 4

Dress top of dam and side slopes. Install valve box.

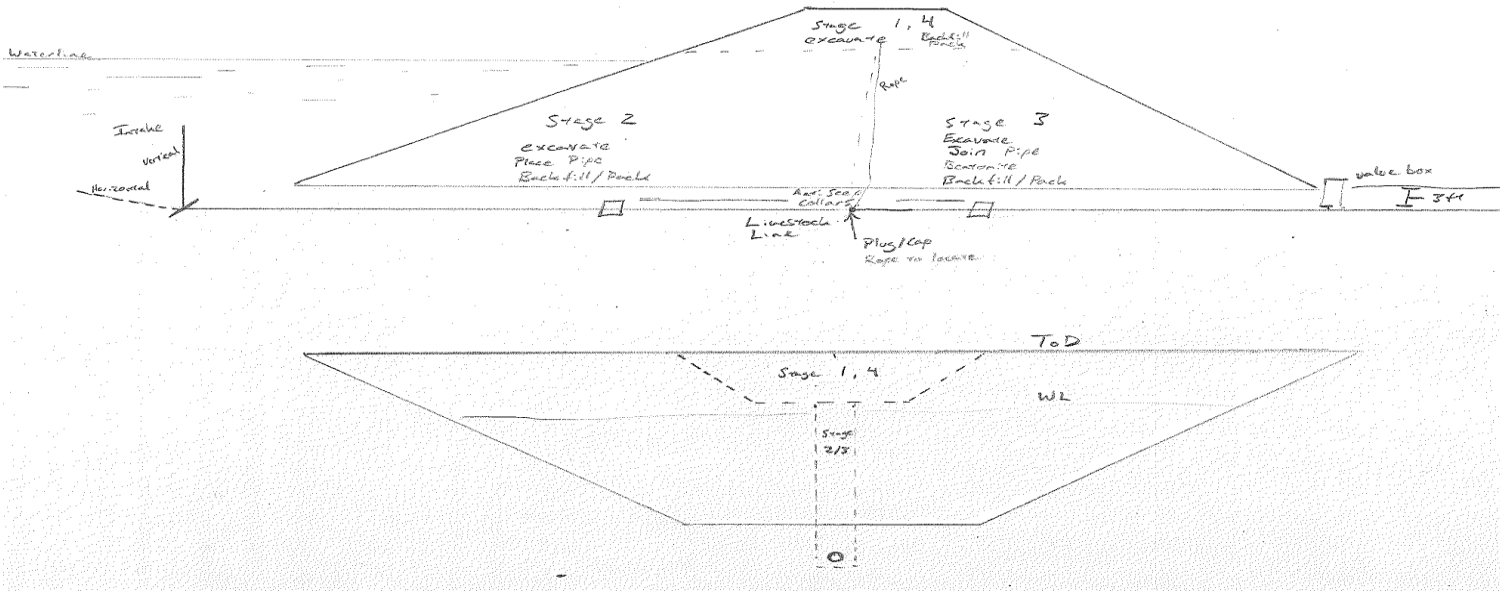
Potential problems

High points in pipeline must be avoided due to chances of an air lock developing in the pipeline. Pipeline must be installed on grade. Inlet floating can be prevented by creating holes in base to prevent trapped air. Should the inlet float; it may need sunk with additional effort from a boat or swimmer.

Improper soil compaction due to in adequate soil moisture. Water may need to be added to fill material by pumping from pond.

Improper inlet hole diameter or number or holes can reduce flow and plug. Recommended to be perforated with 4 rows 3/8" every 1 ½" c-c offset ¾"

Leaks or seepage behind dam after installation. This can be due to improper compaction in trench caused by trench side not being excavated to at least 1.5:1 sides or improper soil moisture. No anti seep collars. Sometimes the seeps may reduce themselves over time.



Livestock Pipeline Pond Inlet

Materials needed:

PVC Glue and Cleaner

1 – 5 ft. 2” PVC SDR21 or SCH40: Perforated with 4 rows 3/8” every 1 ½” c-c offset ¾”

2 (Legs) – 1 ft. 6 in. 2” PVC SDR21 or SCH40 equivalent thickness

2 (base) – 1 ft. 2” PVC SDR21 or SCH40 equivalent thickness

2 (base) – 1 ft. 4 in. 2” PVC SDR21 or SCH40 equivalent thickness

2 (connectors) – 4 in. PVC SDR21 or SCH40 equivalent thickness

4 – 2” PVC Tees **Do not use DWV fittings**

1 – 2” PVC 90 degree elbow **Do not use DWV/Sanitary fittings**

1 – 2” PVC Cap

Directions: Clean and Glue all fitting together. Glue center section and legs approx. 6” from ground to make the bottom base approx. 3 ft. wide. Place a strip of duct tape on each of the leading base skids with enough gap to allow air to vent.