

Tile Drains – Minimizing Manure Transport

- What's in the drain water?
 - Nutrients
 - Bacteria
 - Sediment
 - Water
- Stop discharge and beneficial re-use.
 - Irrigated crop systems
- Maintain CAFO Permit compliance



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- Reclaim Systems
 - Seasonal
 - Requires infrastructure and active management
 - Recycle all drain water and constituents back to crop system
 - Enhance declining water resources ***
 - Allows crop / soil system to utilize / filter
 - Mitigates too dry soil conditions / wider application window
 - Mitigates no-till or perennial crop soil structure issues
 - Return system to drainage function after crop growth
 - Stops direct discharge to surface waters

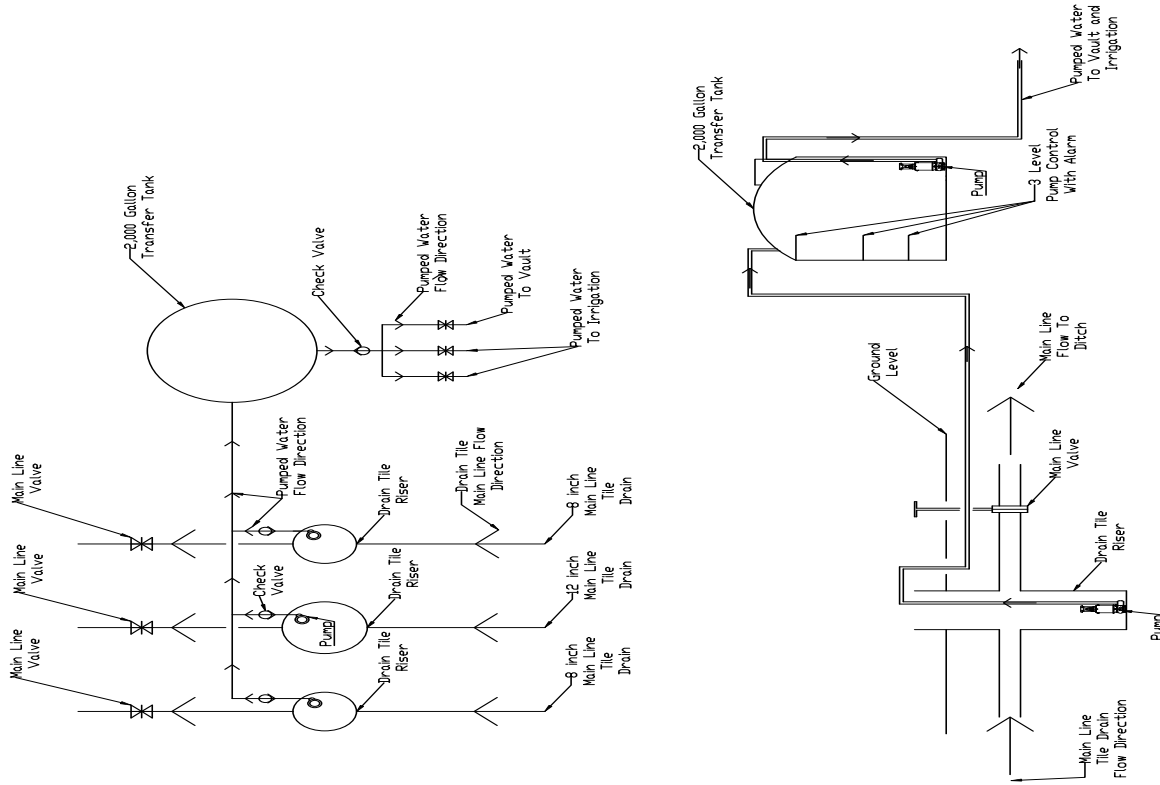


Tile Drains – Minimizing Manure Transport

- Valve Systems
 - Seasonal
 - Requires minimal infrastructure and active management
 - Retain most drain water and constituents in soil matrix
 - Enhance declining water resources ***
 - Allows crop / soil system to utilize / filter
 - Mitigates too dry soil conditions / wider application window
 - Mitigates no-till or perennial crop soil structure issues
 - Return system to drainage function after crop growth
 - Stops direct discharge to surface waters



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The 8 inch main line pump- submersible float control --- ½ hp 60 gallons per minute each
 The 12 inch main line pump- submersible float control --- ¾ hp 80 gallons per minute
 The transfer tank pump - submersible 3 level control --- 3 hp 250 gallons per minute
 Alarm level will give visual indication and prevent tile drain pumps from pumping.