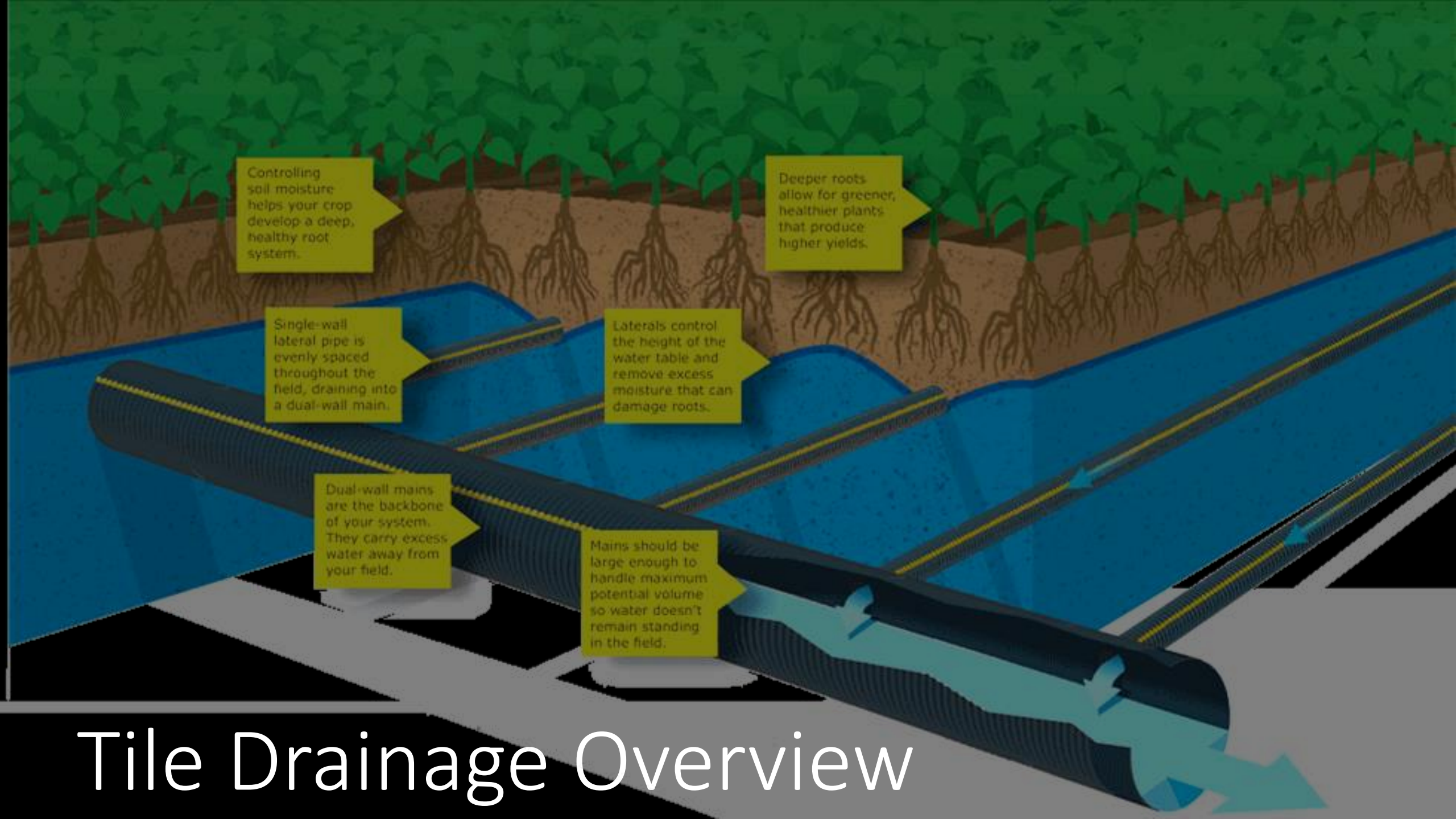




Subsurface Farm Drainage

Installing Field Tile and How it Works



Controlling soil moisture helps your crop develop a deep, healthy root system.

Deeper roots allow for greener, healthier plants that produce higher yields.

Single-wall lateral pipe is evenly spaced throughout the field, draining into a dual-wall main.

Laterals control the height of the water table and remove excess moisture that can damage roots.

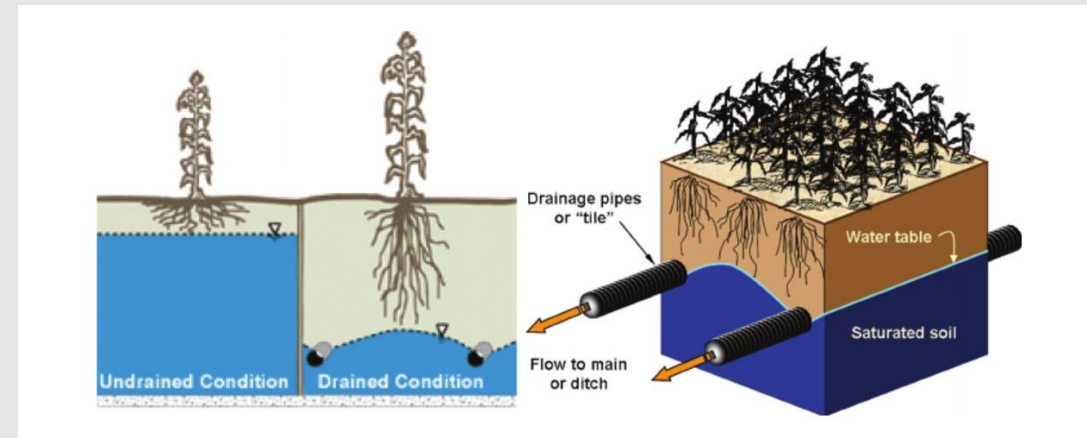
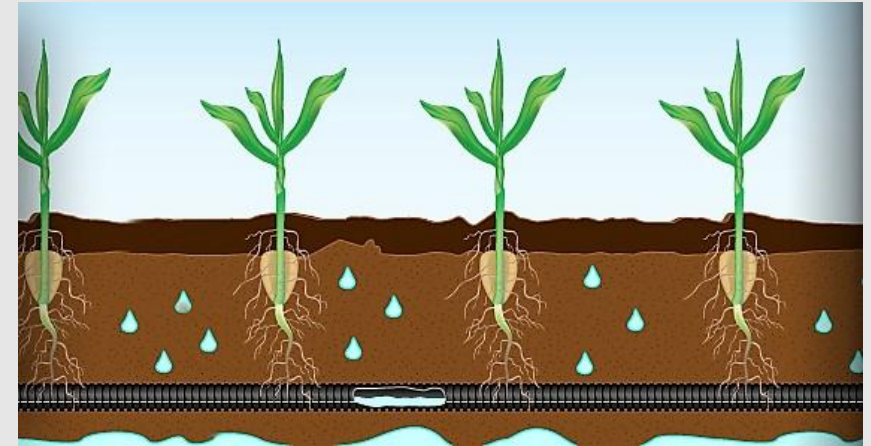
Dual-wall mains are the backbone of your system. They carry excess water away from your field.

Mains should be large enough to handle maximum potential volume so water doesn't remain standing in the field.

Tile Drainage Overview

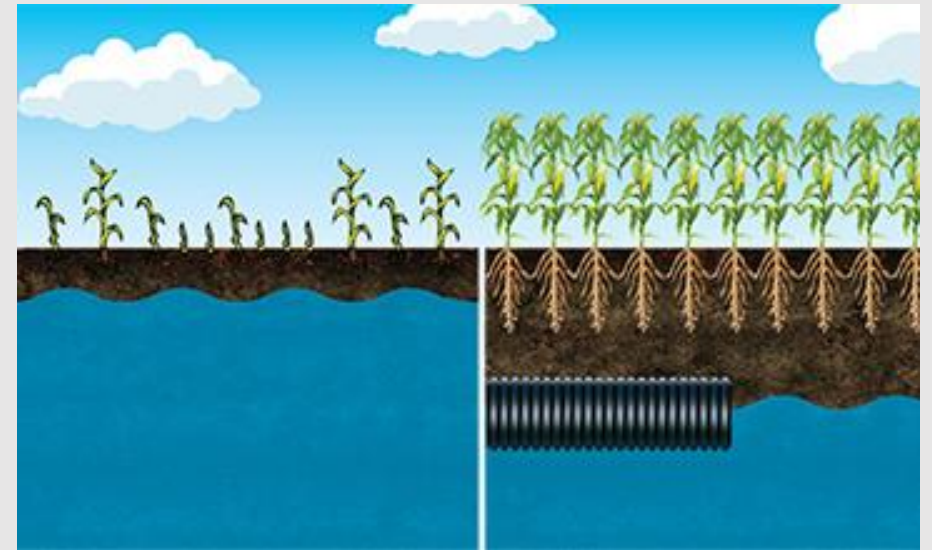
Subsurface Drainage

- Water flows from the surface through the soil and into the “tile” drainage pipes
- This water is carried from the “Laterals” to the “Main” which dumps into an outlet such as an open ditch.
 - Laterals range in size from 2”-5”
 - Mains are larger and vary greatly from 8” all the way up to 24”+
- The drainage process changes the speed at which water is removed from the root zone. System projects can lower the water table throughout the field, while tailored projects can eliminate concentrated problem areas.



Why Is It Important?

- Better Working Conditions
 - Tile allows fields to warm up and dry out earlier in the spring so that planting windows can be maximized
 - Working farms in the right (dry, warm) conditions helps maintain the long term health of the farm
- Field Consistency
 - Tile can eliminate problems in the field that might effect nutrient availability, plant health, stand emergence, and compaction
- Let's the Soil Breathe
 - Almost as important as getting rid of the water, tile introduces much needed oxygen to the growing environment



Installation

- Professional Tile Contractors often use a large, self-propelled tile plow to install tile (Bottom Left)
- Tile that is installed by the farm operator is usually done using a tractor mounted plow (Top)
- A “stringer cart” follows the plow to carry the rolls of tile. A roll of 3” tile is almost 1 mile long.
- Excavators are used to dig in where the laterals will be hooked with a main.
- Plows are capable of installing many of the mains that are used, but these are sometimes put in with an excavator or with a large “wheel machine”.



In The Field

- Top
 - A main outlets water into a large open ditch
- Center
 - A pattern system is used to drain an entire field
- Bottom
 - A close up of the field tile showing the perforated slots that allow water to enter the pipe



Subsurface Tile Drainage is a great, and often needed addition to any farm. FarmFirst, LLC works closely with owners and operators to analyze the economic, agronomic, and environmental effects of tile drainage on a farm.