AMPS-Arched Mesh Pipe Drainage System

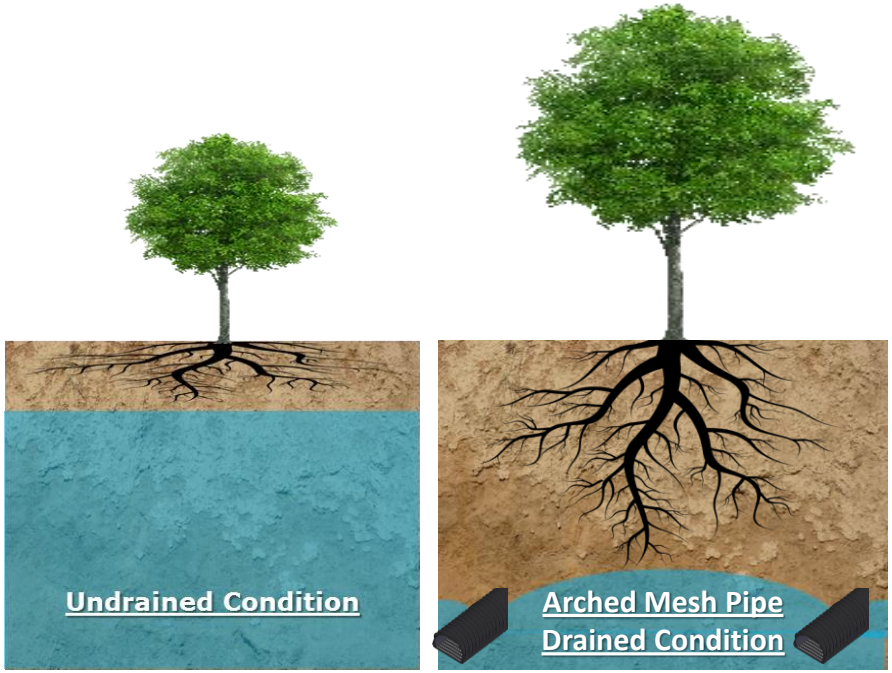
LWT- Lower Groundwater level

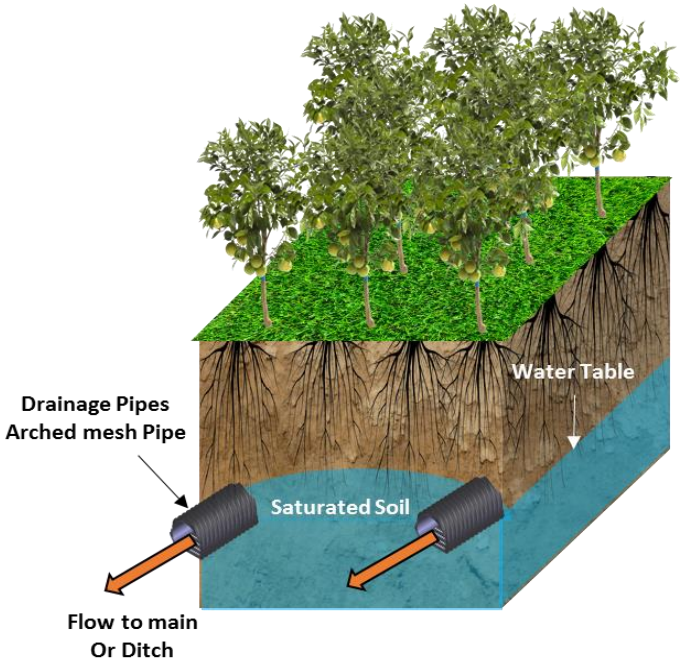
AMPS-Arched Mesh Pipe Drainage System Lower Groundwater Level

Farmers can increase yields and net returns by installing AMPS-Arched Mesh Pipe Drainage System on soils that have poor natural drainage. AMPS-Arched Mesh Pipe Drainage System can also increase land value, improve crop insurance coverage, and reclaim saline land.

When planning a drainage system, farmers should consider factors such as the types and functions of such systems, methods to detect drainage problems, design options, and the environmental effects of drainage installation.

Good drainage is essential for the success of irrigated agriculture: It ensures that the crop's root system has a good mixture of water and air and that the salt balance in the soil is favorable for plant growth.





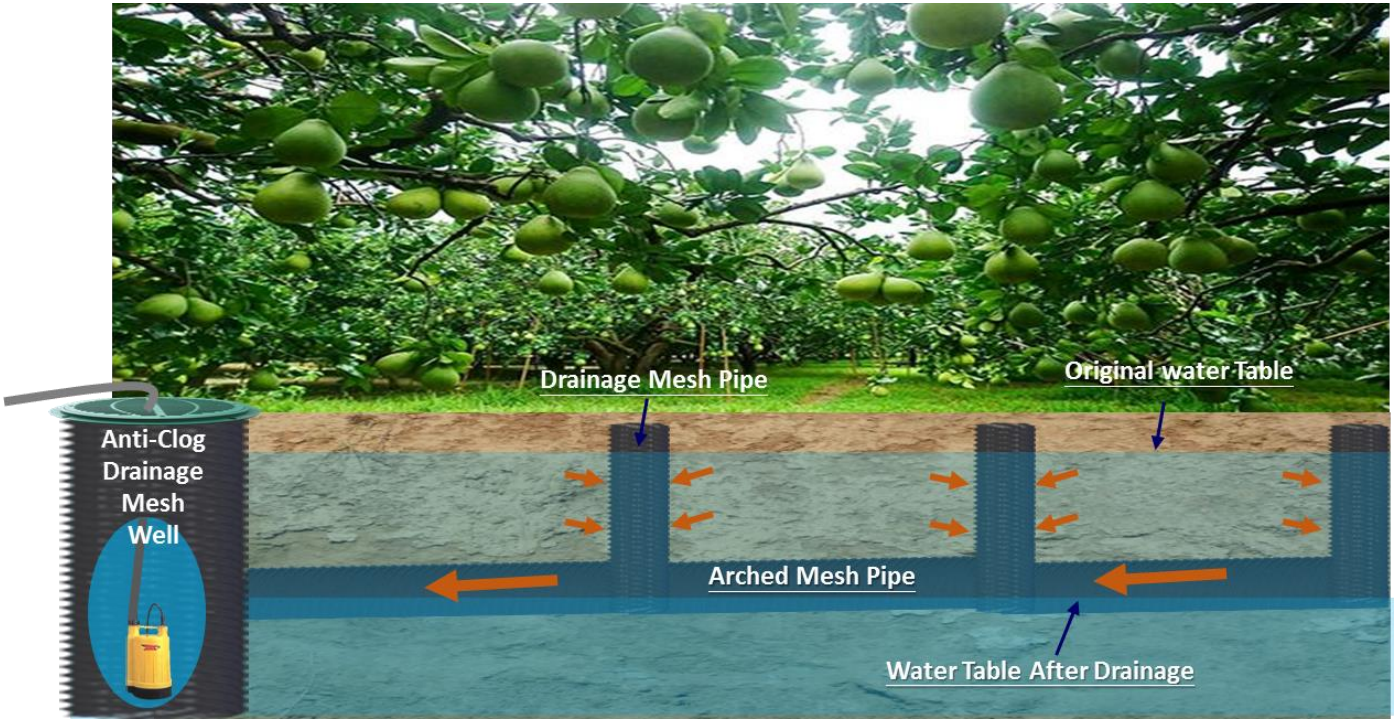
AMPS-Arched Mesh Pipe Drainage System
provides the most economical and simple way to reduce groundwater level

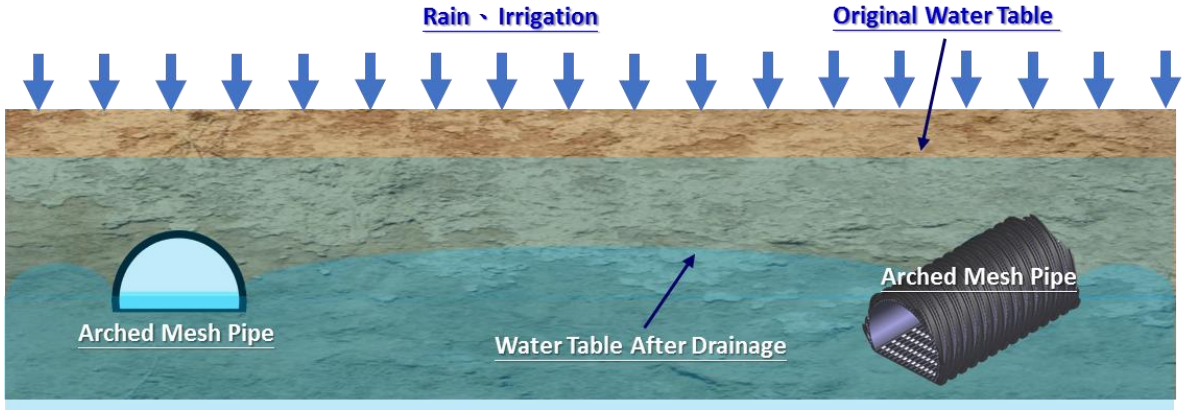
ECO-MESH
Water Solution

AMPS-Arched Mesh Pipe Drainage System

LWT- Lower Groundwater level

AMPS-Arched Mesh Pipe Drainage System Lower groundwater level-structure





AMPS-Arched Mesh Pipe Drainage System

LWT- Lower Groundwater level

AMPS-Arched Mesh Drainage System – Structure

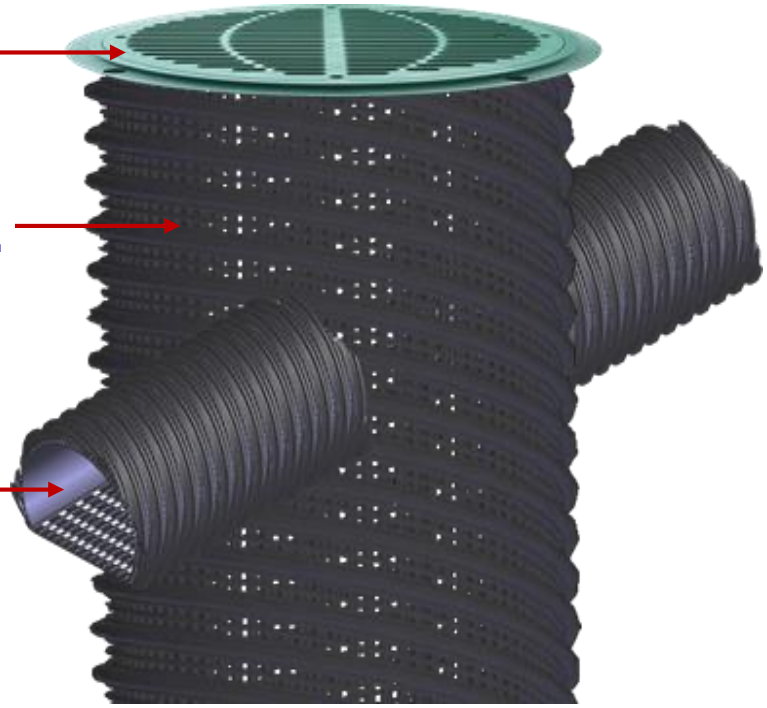
AMPS-Arched Mesh Drainage System **Composes of**

Vertical *Drainage Mesh Wells* and Horizontal *Arched Mesh Pipes*

Manhole Cover

DMW-Drainage Mesh Wells

AMP-Arched Mesh Pipe



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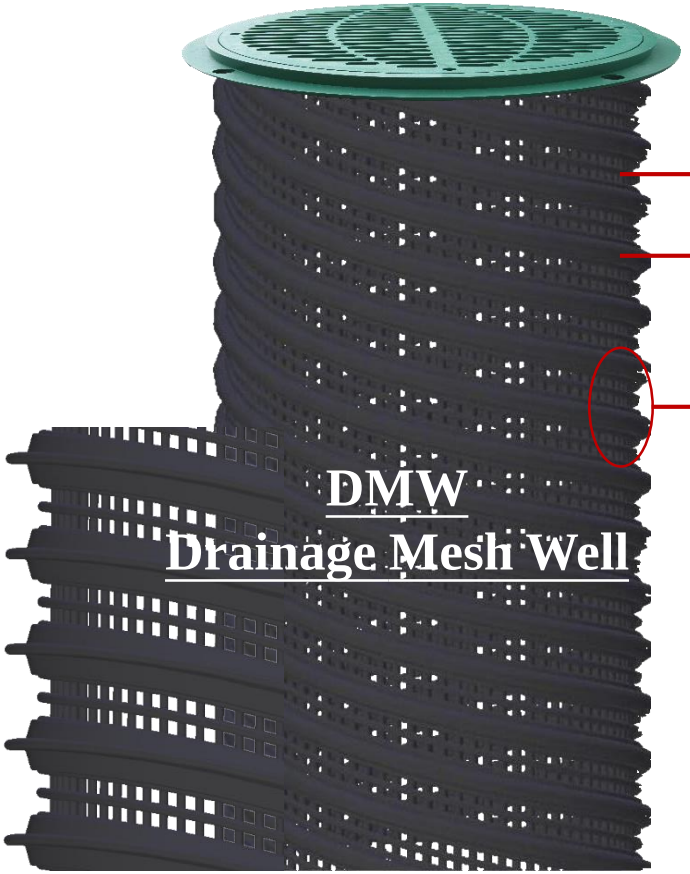
DMW-Drainage Mesh Wells–Unique Characteristics

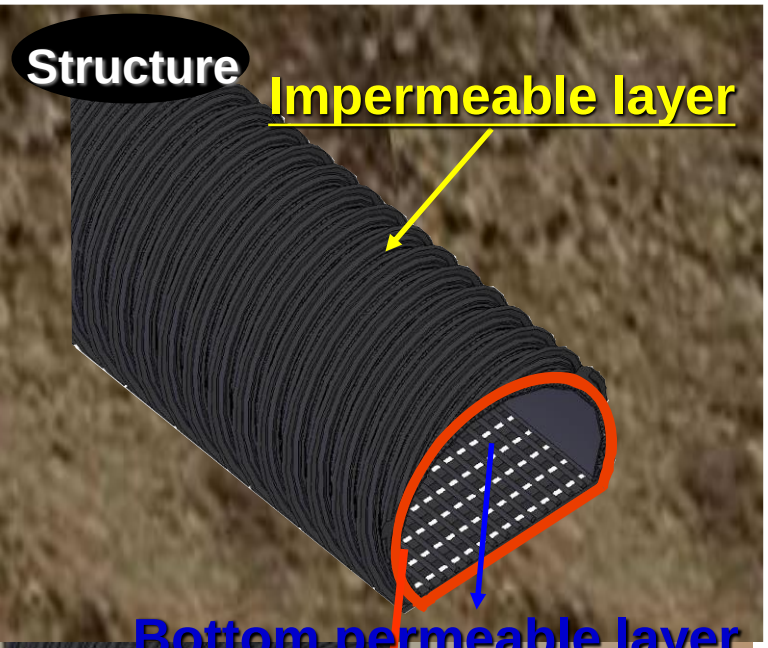
DMW-Drainage Mesh Wells does not need to use gravel, grading, non-woven fabrics and other filter materials, The Mesh Well is not blocked, and the ecological engineering method is the best underground collection and drainage material.



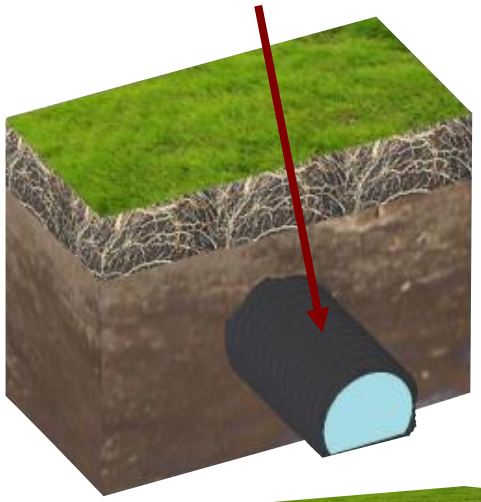
DMW-Drainage Mesh Wells–Unique Characteristics

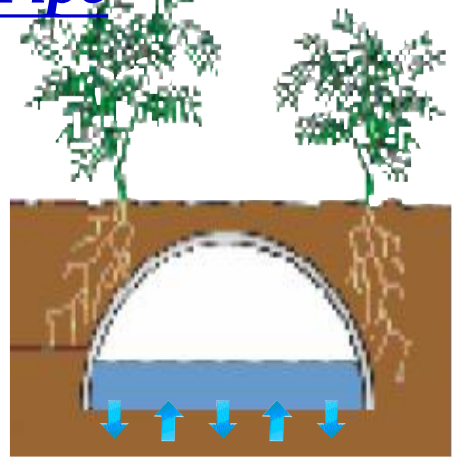
- The sidewall openings are high-density mesh design.
- The sidewall has T-type thread design and high compressive resistance.
- *Drainage Mesh Well sidewall is Anti-Clog and minimizes soil entry without extra filter material, such as non-woven fabric.*

Unique Characteristics of Arched Mesh Pipe



AMP-Arched Mesh Pipe





Traditional installation

Principle

Half round design

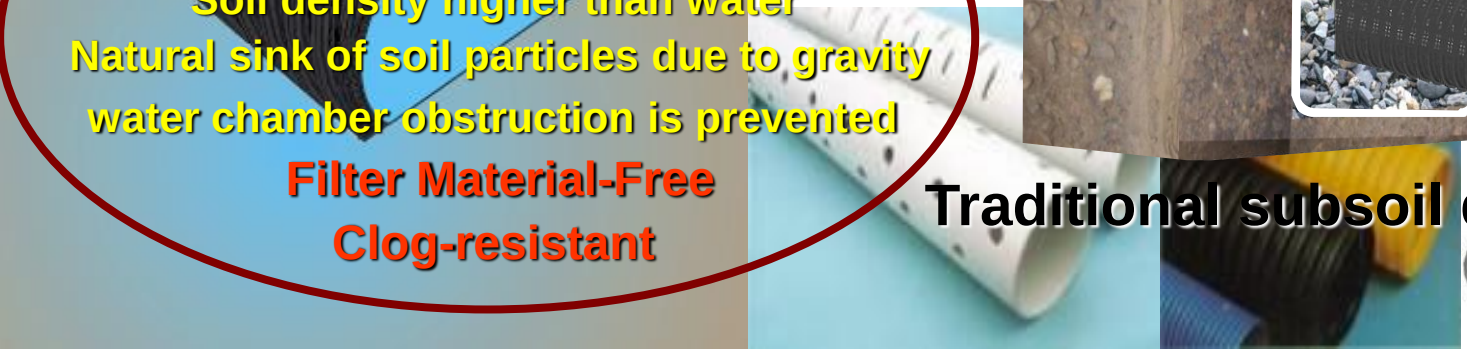
Soil density higher than water

Natural sink of soil particles due to gravity

water chamber obstruction is prevented

Filter Material-Free

Clog-resistant



Traditional subsoil drainage pipe

AMPS-Arched Mesh Pipe Drainage System

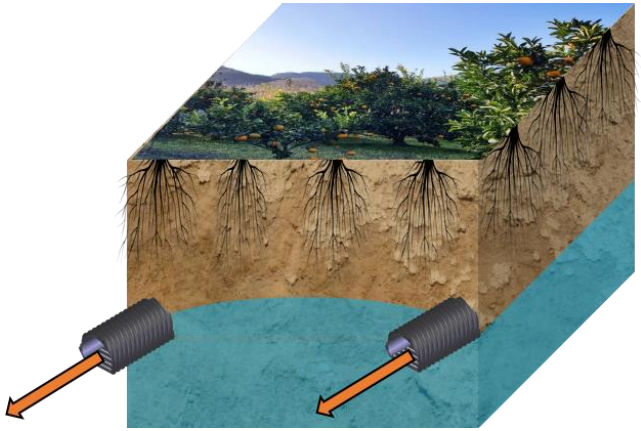
LWT- Lower Groundwater level

Why use Arched Mesh Pipe drainage system?

Where water stands on the soil surface or drains very slowly from the root zone, soil will remain too wet for a long time. Optimal root growth requires both water and air to be present in the spaces between the soil particles, often in equal proportions. If water fills all the soil spaces (saturated), there is no room for air. The major reason for installing AMPS-Arched Mesh Pipe Drainage System is to provide better conditions for crop root growth and improve the yield potential of the farm.

The advantages of Arched Mesh Pipe drainage systems can be:

- Improved root development and increased crop yield.
- Earlier and more timely planting.
- Better germination and crop stand.
- Less runoff.
- Less crop stress from waterlogged conditions.
- Higher spring soil temperature.
- More efficient use of nitrogen fertilizers.
- Reduced soil compaction.
- Making a better environment for plant health and growth.
- Increased land value.



Summary

Soils with poor natural drainage can reduce yields and profits for farmers. Those problems can be solved by installing a properly designed Arched Mesh Pipe drainage system. In addition to the agricultural factors, farmers need to consider the environmental effects of installing an on-farm drainage system.

AMPS-Arched Mesh Pipe Drainage System
LWT- Lower Groundwater level

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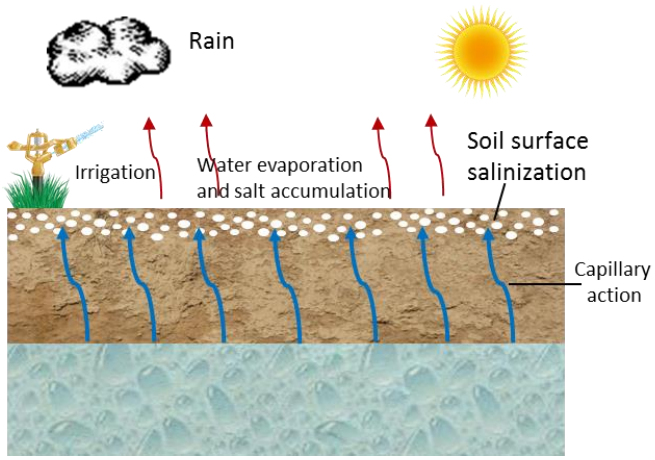
Water Solution

Salinity

Crop yields and production are affected by salinity. Soil salinity is the dissolved mineral salt content (Na2SO4) in the soil on a weight basis. Salinity can be caused by irrigation, left behind by precipitation or the soil itself can contribute to salinity.
Over time, as the soil minerals weather they release natural salts. These salts are removed from the soil profile by the soil's drainage. If the water table in the soil is too high, the salts will not be able to leach downward and can be brought closer to the surface by capillary action. Tile drainage can lower the water table and help leach the salts out of the soil profile, improving plant health.



Impacts & Ideas On Salinity

Subsurface drainage and irrigation used together can reduce salinity by 18-86%.
Whole plant response is stunting of growth, predisposition to infection by soil pathogens and reduced nutrient uptake and nutrient accumulation.
Reduces growth rate, primarily because it increases the energy that the plant must use up, to acquire water from the soil.
Total concentration of salts and various discharged ions has been decreasing somewhat logarithmically from the time the tile systems were installed.
With the use of irrigation, total salt load can decrease by 24%-43%.

AMPS-Arched Mesh Pipe Drainage System

LWT- Lower Groundwater level

AMPS-Arched Mesh Pipe Drainage System Lower Water level - Design

Planning and designing an effective AMPS-Arched Mesh Pipe Drainage System needs time and, of course, requires consideration of a number of factors, including:

- Water table level.
- Soil texture and class.
- Field elevation and slope.
- Current and future cropping system.
- Quality of the installation.
- Environmental effects (dry or/and wet year).
- The frequency of rainfall.

Depending on the design of the drainage system, a typical AMPS-Arched Mesh Pipe Drainage System has a number of small laterals — 2, 3, 4, 6, 8 or 10 inches in diameter — that drain water to larger diameter collectors and the main ditches.

Water collected from the AMPS-Arched Mesh Pipe Drainage System laterals and main lines flow into an outlet point on the edge of the field and are discharged into an open drainage ditch outside of the farm or other body of surface water.

AMPS-Arched Mesh Pipe Drainage System
LWT- Lower Groundwater level

AMPS-Arched Mesh Pipe Drainage System – Lower groundwater level Design

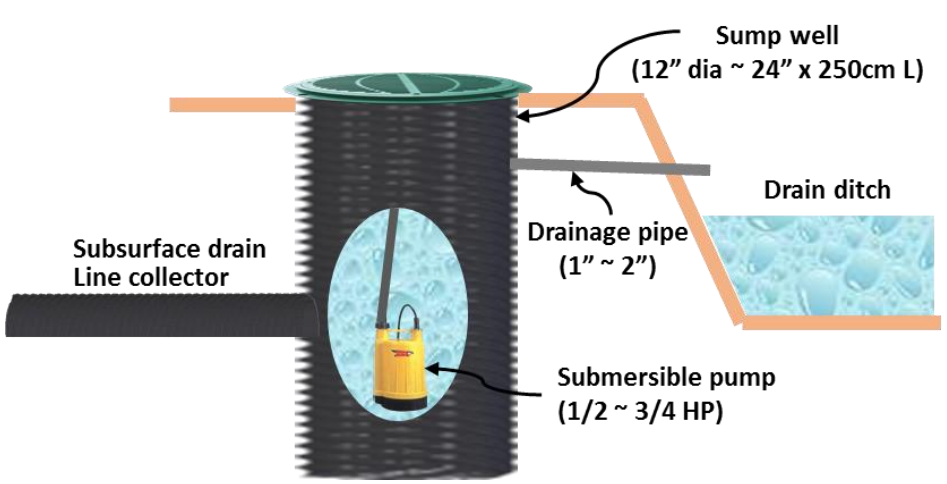
The collector drain receives the flow from all of the laterals and generally discharges into an open drainage ditch. If the outlet point is at lower elevation than the water level in the drainage ditch, a sump well must be installed to temporarily hold the ground water and pump it to the drainage ditch.

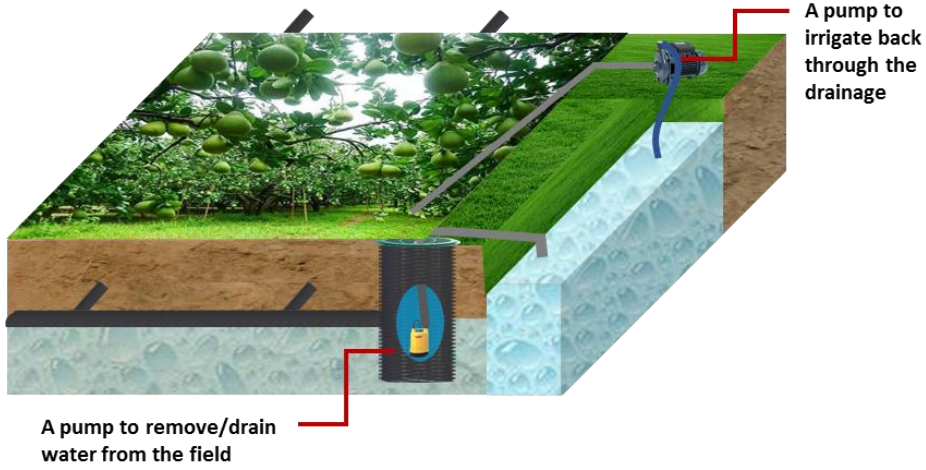
The intention is to maintain the ground water at a level below that of the root zone for a given crop. The Natural Resource Conservation Service requires that the installation be at least 5 feet deep.

Sizing pumps to remove/drain water from the field: In cases that land topography does not allow for free surface drainage outside the farm, using a pump station will be necessary to lift the water over a hill or rise that is between the field and the discharge channel or/and canal.

In such a case there is a need to refer to the "Drainage Coefficient (DC)" value which was selected to design the tile drainage system for the field. The drainage coefficient is the water draining capacity of the drainage system and is typically expressed as a depth of water removed from soil in 24 hours (inches/day). The whole drainage water in 24 hours is the multiplication of the drainage coefficient by the field area. The maximum pump flow rate for a given field area can be estimated with the following formula:

Maximum pump flow rate (gpm) = 18.9 * DC * Area





AMPS-Arched Mesh Pipe Drainage System

LWT- Lower Groundwater level

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Water Solution

Case - Green House Lower Groundwater Level

Soil with high humidity

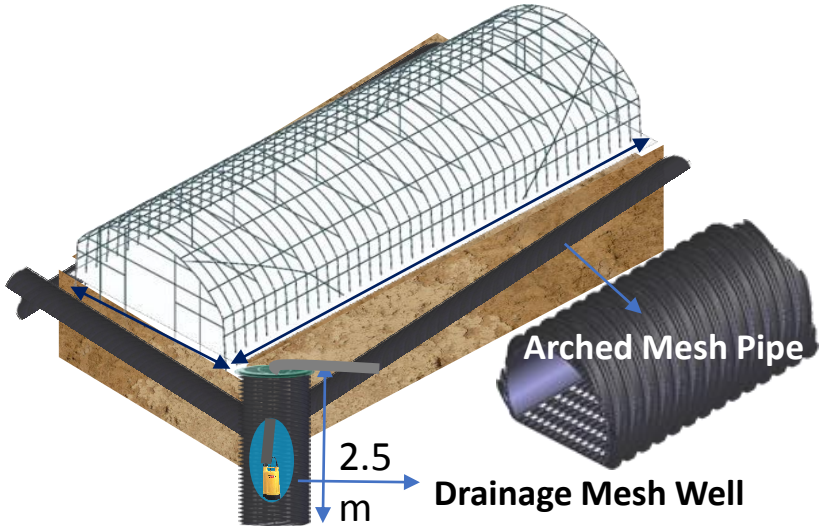
Paddy field flood irrigation, after heavy rain, the greenhouse soil humidity is too high, can not be cultivated and cultivated, buried Arched Mesh Pipe around the greenhouse to reduce excessively high groundwater level, the effect is particularly good.

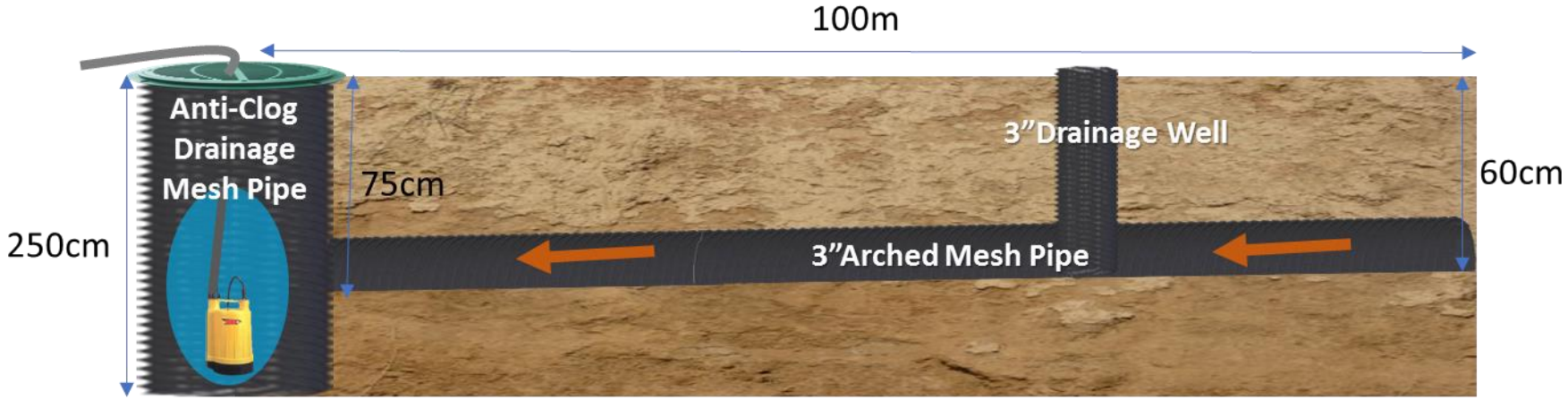
Excessively high water table

Pumping away groundwater to lower groundwater level

AMPS-Arched Mesh Pipe Drainage System
LWT- Lower Groundwater level

AMPS-Arched Mesh Pipe Drainage System – Green House Lower Water Level Design





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Water Solution

AMPS-Arched Mesh Pipe Drainage System

LWT- Lower Groundwater level

Lowering groundwater level in pomelo orchard or avocado orchard