

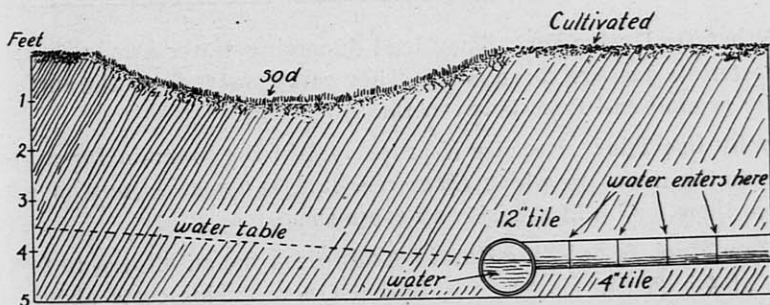
WISCONSIN BANKERS' FARM BULLETIN

Making Dry the Wet Places

By

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UNIVERSITY OF WISCONSIN



WIDTH, DEPTH, CONVENIENCE AND PERMANENCE.

The tile carry the underdrainage 365 days in the year. The surface run carries flood water a dozen days in the year, and raises hay for you the rest of the time. It does not cut up the land.

File this bulletin where you can find it

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Making Dry the Wet Places

In the State of Wisconsin there are seven million acres of mud. Much of this has been built up by the washings from the surrounding high lands. It needs drainage to make it productive.

DRAIN WET LAND

WHY?

Because it draws out the cold stale water and lets in the warm fresh air.

Because it makes the roots go deeper.

Because it makes the corn rows straighter.

BECAUSE IT PAYS.

What Do Drains Do? They lead damaging water around a field or hasten its passage through it. They carry water from the surface of the ground and from between the soil grains.

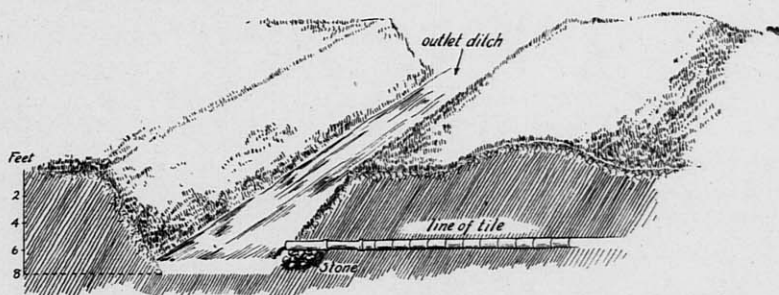
Why Use Tile? Because if properly laid they remain for a lifetime at the depth to which they were laid and you do not have to dodge them, or build a bridge to cross them.

How Much Does Tiling Cost? Aside from the outlet, ten to forty rods of 4-inch tile may be required per acre. This costs about 75 cents a rod for tile and labor if laid three feet deep. If laid four feet deep they cost more per rod but they may be eight rods apart where they would have to be four rods apart if only three feet apart.

How Much Is Tiling Worth? _____, _____, Wisconsin, wrote March 20, 1915: "A crooked muskrat slough spoiled 20 acres of land for me. Last fall I spent \$192.50 for tile and labor and tiled it. This spring it will be the first land I plow. Those tile are worth a thousand dollars to me."

What Is The Best Kind Of Tile To Use? Vitrified tile are probably the best, but they cost twice as much as the unglazed tile and are not twice as good, except at an exposed outlet. Unglazed tile may be made of clay or shale. The shale tile are the harder. Cement tile properly made are all right, but farmers are so apt to be careless in making them that it is unsafe to recommend them generally.

How Deep Should Tile Be Laid? Three feet in clay; four feet in muck or peat; at least one foot below the top of a sandy subsoil; but just at the top of a layer of hardpan, even though it be only two feet below the surface. Thus covered, they may freeze with safety, if they are empty when they freeze. Hence, keep the outlet open. Soft tile crumble at the outlet due to the sudden daily freezing and thawing. Tile laid only two feet deep in a wet peat heave in two years so that the plow strikes them in some places.



ALL A TILE ASKS FOR IS AN OUTLET.

In big valleys open outlet ditches are necessary, but wherever a ditch less than six feet deep and 15 feet wide at the top will take the flow; an 18-inch tile with a surface run is better.

How Large Should Tile Be? Nothing less than 4-inch tile, inside diameter, should be used for laterals. The size of the main depends on the fall, and the size and springiness of the area.

How Much Fall Do Tile Need? Two inches in 100 feet is good. The larger the tile the less fall they require. Many lines of 12-inch tile are level for 1,000 feet, but they must have a free outlet.

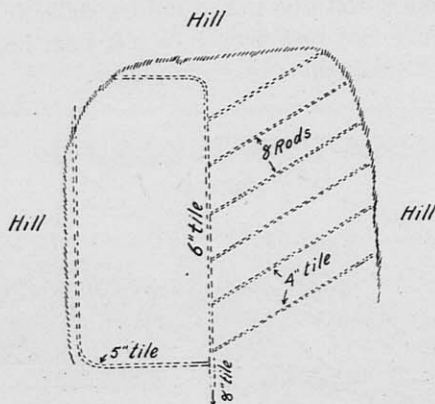
Can a Carpenter's Level Be Used for Surveying? Such a level will tell you whether you have a poor fall or a good one. Unless you have a fall of two feet in 80 rods in the surface of the ground to an outlet three feet deep or more, you should have an engineer set the grade stakes with a surveyor's instrument.

How Can You Get the Tile Laid? Either put a competent foreman who has some knowledge of engineering, in charge of a crew of ordinary laborers, or else let a tiling contractor do the work at so much a rod, furnishing his own tools.

Can Dead Furrows Be Used For Drainage? A good dead furrow for surface drainage with a line of 4-inch tile for under drainage is

better than a ditch made three feet deep with a capstan plow, and cost only half as much.

Will Sand Get Into Tile? Not if they are covered first with a protecting layer of muck or clay.



CUTTING OFF THE SEEPAGE, BEFORE IT DAMAGES THE LAND.

On the left, the line of tile intercepts the seepage and carries it to the outlet.
On the right, twice as much tile is used with poorer results.

How Do Tile Reduce the Surface Water? By keeping the soil dry enough to absorb the surface water.

When Should We Commence to Plan Our Drainage System? A year before you expect to start digging. That gives you time to engage a tiling contractor, to get quotations on a car-load of tile from several firms, and to haul the tile to a neat pile on a dry, convenient spot, when other team work on the farm is not pressing. If you let it go until the last minute, and then put in a capstan ditch in a hurry, you will be sorry the rest of your life.

What Land Should Be Tiled First? The wet spots in last year's cornfield, where the corn was drowned out. The most unprofitable land on the farm is the spot just dry enough to tempt you to plow it, but just wet enough that you lose two crops out of three. If it were a little wetter you would know enough not to plow it at all.

Why Is Partial Drainage Unprofitable? Because it may be sufficient to kill the native marsh grass, but not enough to permit anything else to grow there. A twenty-dollar line of tile often pays for itself every year by saving the crop on an acre of land.