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WATER FOR THE

MODERN FARMSTEAD

PLENTY of water is essential both to productive farming and comfortable farm living.

Without electricity, an adequate supply of water on the average farm has meant heavy work—time and labor spent pumping and carrying water to livestock and gardens, to dairy barns and other outbuildings, and to the kitchen and the rest of the home to keep them supplied.

With electricity you can pump the water when you want it easily and cheaply. This means that rural people who have electricity can enjoy the kitchen and bathroom conveniences found in the city. More water helps cows to give more milk. With plenty of water hogs, cattle, and other livestock put on weight faster, the earth yields larger crops, hens lay more eggs, and poultry grows larger and faster.

An electric pump and a well-planned water-distribution system save valuable time. They do away with hours of back-breaking labor, increase production and profits, make life easier.

FACTS About Farm Water Needs



Milk is 87 percent water.



Vegetables are from 80 to 97 percent water.



Eggs are 65 percent water.

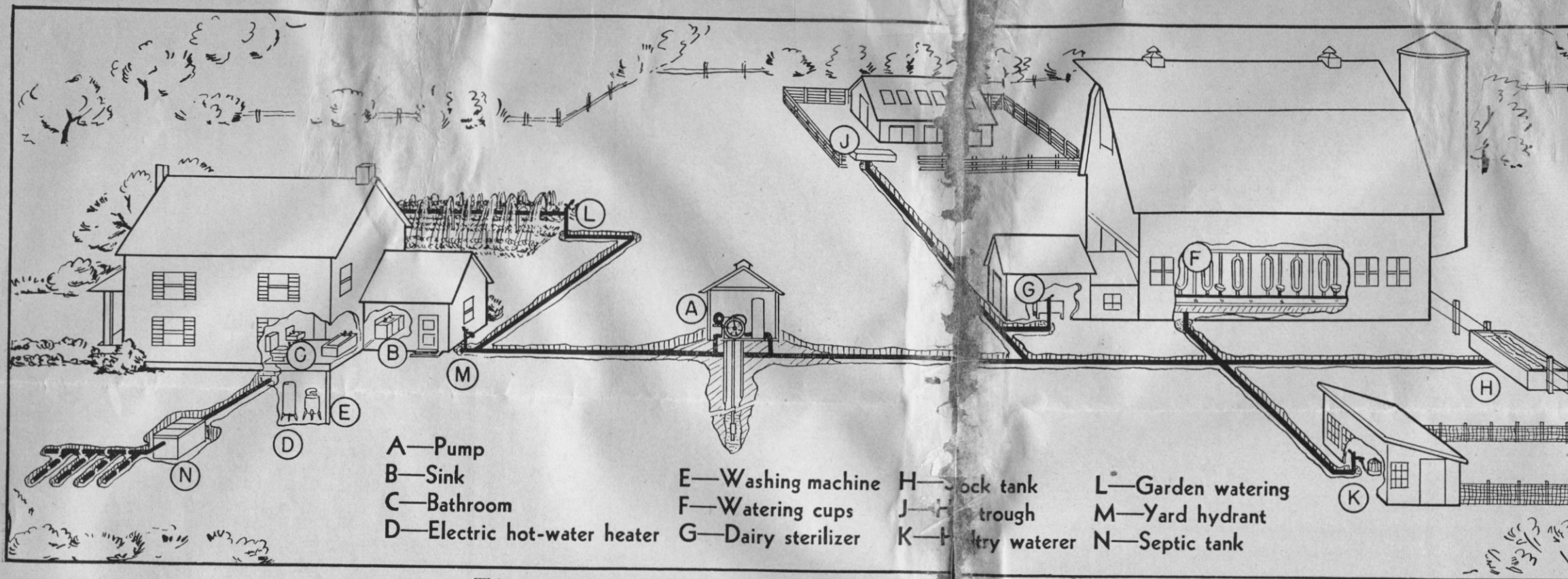


Meat is about 60 percent water.

A horse or fat steer needs 80 pounds of water a day—about 10 gallons. A cow needs about 25 gallons.

A pig needs 1,200 pounds of water to round out its weight—160 gallons.

100 chickens need 40 pounds of water a day—5½ gallons.



This system of water installation is easily adaptable to modern farmsteads

FOLLOW THIS WATER-SYSTEM PLAN

Home Needs and Installations

A properly-installed home water system should include a kitchen sink, water heater, complete bathroom, laundry facilities, and an extra washbasin and shower for farm workers.

Adequate piping for hot and cold water to your sinks, water heater, shower, bath tub, laundry and dishwasher should be provided.

A modern, up-to-date bathroom contains a lavatory, toilet, and bathtub or shower. To make room for the bathroom, you may utilize a section of your back porch, end of a hall, or parts of one or two bedrooms, or you may build a small one-room addition at the side of your house. Remember that bathroom fixtures need not all be in the same room. For convenience, some rural families place the lavatory and toilet under the stairway, with the tub or shower

elsewhere in the house, preferably near bedrooms.

The Farm Sewer System

Septic tanks have proved far superior, more sanitary and more healthful than cesspools. A sewage system, consisting of an underground pipe line from the bathroom to a concrete septic tank which empties into a tile-line disposal field, should be a part of every modern bathroom installation.

Farm Needs and Installations

Barn.—Water under pressure is used in the barn for livestock drinking cups and for cleaning the barn, as well as for fire protection. It is important to have sufficient hydrants for the latter two purposes. You may also want convenient connections for washing the truck, tractor, or auto.

Dairy house.—You'll need a hydrant inside the milk house for scalding vats, washing floors, and for other sanitation purposes. This installation will save many hours of valuable time and labor.

Stock tanks.—Be sure to bury below the frost line the pipe from the pump-house to stock tanks (as well as all other outdoor pipe lines). A frostproof hydrant should also be used for filling the tanks. An automatic-float control (which you can buy or make) can maintain the water level at sufficient height for stock to drink at all times. In freezing weather, a water heater may be inserted to prevent ice formation.

Poultry.—Bury the pipe below frost line and install shut-off valves and drains to prevent freezing. One automatic watering device is enough for each 50 hens in a laying house, as the hens will drink frequently but not much at a time. You may want a portable automatic drinking device which can be moved from one part of the hen house to another as needed, and which will give a steady supply of fresh water. In cold weather, an

electric water warmer will maintain high production. When flocks are outdoors, water can be piped to the range by a line overhead or on the ground.

Irrigation.—It has been found that overhead irrigation uses from 40 to 60 gallons of water per minute per 100 linear feet of irrigation pipe. The total amount of water needed depends upon the soil type as well as upon climatic conditions and crop, but about 28,000 gallons is required to put an inch of water on an acre. Sprinkler systems and porous hose are alternate types to overhead pipe lines.

Make Your System Large Enough

Just as a wiring system should be large enough to accommodate all future electrical loads and flexible enough that circuits may be added to it easily, a farm water system should have sufficient pumping capacity for all future needs.

A minimum pumping capacity for average farm use is 350 gallons per hour. At that capacity and with av-

erage use, the pump will run from 1 to 1½ hours daily, at a cost of a few cents per day.

A 42-gallon storage tank is usually the minimum size for a 350 gallons per hour pumping system. However, if the flow of the well is slow, it may be advisable to install a smaller pump and a larger tank. A small pump will take a longer time to fill a larger tank, but a larger reserve supply will be available.

Be sure that all pipes are large enough; too-small pipes may result in an inconvenience or injury—such as a bather being scalded when a person in another part of the house turns on the cold water.

What Kind of a Pump?

An important consideration in the development of a farmstead water system is the type of pump you install. Where the source of water is a well or body of water that stands at a depth of 22 feet or less below pump level when the pump is in operation, a shallow-well pump may be installed

to draw up water by suction. If the depth is greater than 22 feet, a deep-well pump must be used. The elevation of your farm must also be considered, although it makes little difference if it is not more than 2500 feet above sea level. To be sure you make a correct selection, consult your pump dealer or co-op manager on the proper type of pump to install.

Where the Pump Should Be Installed

Location of the water supply will in most cases determine the location of the pump in relation to the house. Many shallow-well pumps will be installed in the basement of the dwelling. This is advisable for weather protection. Deep-well pumps, because of their mechanical operation, must be installed directly above the source of supply, if they are of the plunger type. Jet pumps have greatly increased in popularity during the decade they have been used in domestic installations. They are suitable for both shallow and deep wells. A jet pump may be used for wells up to 120 feet or more in depth; however it is more practical at lifts of 80 feet or less. Shallow-well pumps should also be installed at the water source if the distance to the dwelling and buildings to be served is great. Consult your pump dealer on the size of pipe and location of the pump for proper installation.

Protecting the Pump

When your pump is installed at the well, a weathertight pump house

- Plan your system large enough in every detail for future needs—size of well, size of pump, size of pipe. Don't be caught with too small a water system.

Make sure that your system strictly meets all local sanitary requirements. Health of your family and livestock depends on it.

Make your pump house well insulated and large enough for you to work on equipment. Plan for a garden watering system.

should be provided, or a pit with

good drainage dug large enough to hold the pump, and at sufficient depth to be frostproof and weatherproof.

In many sections State health departments now advocate the use of well-constructed pump houses. Cost is low—equal to or slightly more than a pit. Other advantages are: (1) They can be well-ventilated. (2) They are easily drained. (3) The pump is readily available for oiling and repairs. (4) The well is easily protected from surface water. Pump

houses, in most regions, should be well insulated to avoid pump freezing.

Laying Out Your Water System

The most important thing to consider in laying out the pressure system is the uses to be made of the water—now and in the future.

When it is determined to what uses the water will be put, it is possible to total the amount needed to arrive at the capacity and size of the pump

to be used. Again, remember—*plan now* for the total future needs of your farm and home.

A Word of Advice

You can get valuable assistance in planning your farm and home water system from the state health department, county agent, vocational agriculture teacher, your local pump and plumbing dealer, or your REA cooperative.



Additional information can be found in REA leaflet, **Care of Your Electric Water System**, copies of which may be obtained from your co-op or from the Rural Electrification Administration, Washington 25, D. C.

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