

# AGRICULTURAL ENGINEERING NEWS LETTER

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## WIRING FARMSTEAD FOR ELECTRIC SERVICE

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Of the 185,255 farms in Minnesota 23,342 have electric lights in the house. This is only one out of eight. Good lights in the farmhouse and other farm buildings contribute much to the comfort of the family and increase the efficiency of the workers. Other industries have found the use of electricity economical and essential and are using it almost universally. In studying the farm situation it has been found that many early wiring installations were made so cheaply that they could not carry the load and give the service that was later found necessary. As the user of electricity becomes accustomed to its advantages his requirements increase; therefore, it is important that the farm wiring system be planned and installed so that it will take care of the increased demand both in quantity of current consumed and also permit of extension of the system.

When it has been decided that the farm home is to be connected with a power line for light, heat, and power, a careful study of the service needed should be made in order to insure its adequacy, and, if a complete system is not installed at once, to so plan that the future additions can be made without tearing out what has already been done because it is not of sufficient capacity. It pays to make a sketch of the farmstead showing the location of the various buildings. With this sketch it is possible for the electrician to go over the contemplated job and make a record of what is necessary to furnish the farmstead and buildings with an adequate wiring job. Many power companies serving rural communities have a rural service department that gives assistance to its prospective customers in studying the possibilities of their use of electricity as well as how the farmstead can best be wired.

When the house is near the highway it has been customary to set the trans-

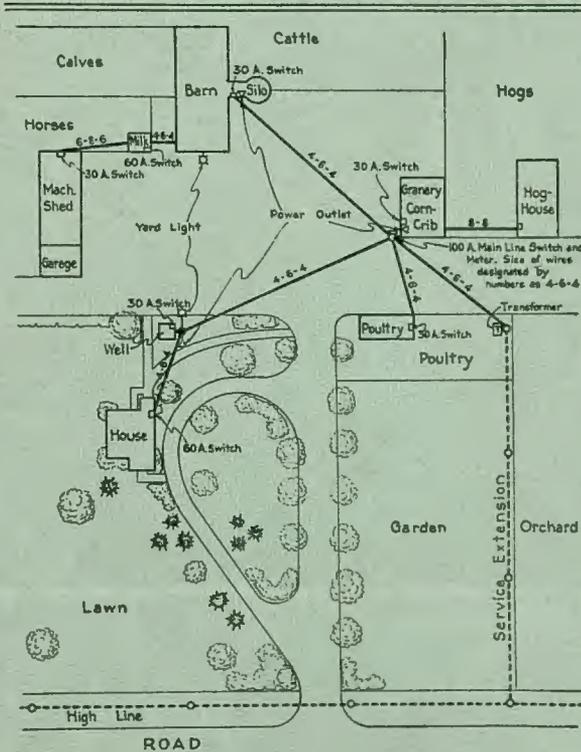
former on the pole carrying the high tension wires and run in the secondary or low tension wires to the house. If the wires are extended to other buildings, long secondary wires may have to be used with a resulting drop in voltage. In many cases it is better, even at additional cost, to bring in the high tension wires and locate the transformer near

where armored cable or conduit should be used will result in short life and frequent repairs. Weatherproof wire and lead covered wires are frequently a good investment and save short circuits and fire hazards. The electrician should keep informed as to the special requirements of farm lighting so that the lamps will be located where they will furnish light to best advantage for performing the various operations such as currying horses, milking cows, feeding poultry, etc.

On the farm of average size the three wire system is found economical. This permits of the use of 220 volts for motors of over one-fourth horse power and 110 volts for lights and small motors. The power company brings in its wires, sets the transformer and meter and connects to the farmstead wiring at a service entrance or at the weatherproof outdoor service switch. Until recently it has been customary to locate the meter in the house, but with the development of a weatherproof switch and meter box so that the meter may be read without entering the house, the change to a location on a pole has brought about a decided advantage in meter reading.

The electrician who does farm wiring jobs should be familiar with the requirements of the power company as regards height of poles, grounds, and fuses required. Usually the electrician can point out to the farmer that it will pay him to make the installation permanent and adequate as far as it goes and leave to a later date the least necessary branch circuits if finances do not permit of a complete system. Extensions may be easily installed later if they are considered when first laying out the system.

In almost every wiring job additional outlets will be required later. Where farmsteads have been wired it has been found that the following pieces of equipment should be considered as possible requirements for outlets; lights, washing machine, electric pump, flatiron, range, refrigerator, cream separator, milking machine, vacuum cleaner, fan, curling iron, and portable motor. It pays to have plenty of outlets in the various buildings and it is desirable that the yard light be arranged to turn on not only from the house and barn but also at the light pole or at the garage or some place easily reached when coming home after dark with a team. Satisfaction comes from an adequately wired farmstead, while a poorly wired one may be a risk and a disappointment.



A farmstead wired for light and power so that the owner will get real service from the installation.

the center of the electric load for the farmstead. The location of the transformer near the load center insures short wires and, consequently, better service when the wiring system becomes more heavily loaded as new extensions are made. Motors require proper voltage and long secondary wires cut down the voltage and cause loss of power unless larger wires are used.

Most attempts to do a cheap job of farm wiring will be unsuccessful. The use of small wires will result in poor service. The use of knob and tube work