

PROJECTS TO BE TAKEN UP DURING THE YEAR BY
THE DEPT. OF AGRICULTURAL ENGINEERING IN COOPERATION WITH THE
----- COUNTY AGENT. -----

1. LAND RECLAMATION

- (a) Drainage
- (b) Terracing
- (c) Land Clearing.

11. DOMESTIC ENGINEERING

- (a) Farm water supply and sanitation.
- (b) Farm lighting plants and home labor saving equipment.
- (c) Farm Hydro Electric Development.

111. POWER FARMING

- (a) Farm implements.
- (b) Gas engines and tractors.

1V. FARMSTEAD PLANNING

- (a), Farm Buildings.
- (b) Efficient arrangements of farmstead.

V. MISCELLANEOUS ENGINEERING PROBLEMS.

1. (a) TILE DRAINAGE DEMONSTRATIONS (Individuals farms)

Object -- To demonstrate the methods of drainage on farm wet lands.

The County Agent should select good reliable and progressive farmers in the different districts of his county who have wet land that can be improved by proper drainage. To make the demonstration worth while the acreage should consist of not less than 5 acres. A good size demonstration would be 20 to 30 acres. When the Agent has selected his demonstration and has agreed to follow instructions the dept. of agricultural engineering will send an engineer to survey the land to be drained, and will prepare a map showing the location, size and amount of tile needed, together with an estimate of the cost of tiling. After the farmer has purchased his tile and has it ready to start work - the engineer will return and stake off the tile line giving the grade and cuts, etc. He will also instruct the farmer how to grade his ditch and lay his tile, spending as much time with the farmer as is necessary to get the work started right. It is during this second trip and when the work is actually being done that the County Agent should advertise the demonstration and have as many farmers from the immediate neighborhood present as possible. If the agent is located in a section where a large amount of drainage is needed the dept. will assist in organizing a ditching machine company for the purpose of getting the ditching work done for the farmers. Wherever

these machines are located the farmers are doing a lot of tiling as a machine is the most efficient means of doing the ditching. When a machine does the work the farmer is assured of getting his ditch dug true to grade, and the whole success of tiling depends upon a proper grade.

2. (a) DRAINAGE OF LARGE AREAS

Many counties have large sections of land that have been rendered useless by the overflowing of streams, etc. In most of these cases the land is owned by many parties and in order to accomplish anything in regard to the reclamation of these large areas all the land owners have to join in a cooperative movement. In cases of this kind the dept. will give the agent assistance in making a preliminary survey of the areas in question so as to report on the possibilities of drainage, etc. After this preliminary survey, if it is found advisable to proceed a drainage district will be organized under the state drainage law. The drainage div. of the U. S. Dept. of Agriculture will aid in the organization work and will cooperate in putting the project across.

(b) TERRACING DEMONSTRATIONS

Object - To demonstrate the method of preventing the loss of soils through erosion or (soil washing).

In counties needing terracing the Agent should select ten or twelve farms distributed throughout his county for the demonstrations. Arrangements should be made to hold ~~two~~ demonstrations a day - ~~one~~ in morning and one in afternoon. The active work should be given over exclusively to these demonstrations and the Dept. will send an engineer to the county to assist for the work. The engineer will lay off a number of terraces on each farm and will construct one complete terrace to each farm so as to demonstrate how the terraces are made. The agent is to advertise the demonstrations and have the farmers from the immediate neighborhood present at the demonstration. Instruction will be given with instruments that are practical for every farmer so that he can carry out the work himself. The agents conducting these demonstrations should get complete instructions from the Dept., as to just what each farmer will have to furnish and as to the nature of the land to terrace, etc. (Terraces are not practical on land having over 15% slope.) This is a work that is very badly needed in a number of our southern counties. Terracing is very inexpensive, the only cost being the farmer's own labor. Some of the southern states have been using terraces for a number of years with uniform success. It is very important that we get this work started in Virginia at once. We are arranging for this terracing work this fall. Terracing demonstrations will be conducted this fall and not again until the fall of next year.

(c) LAND CLEARING

Object - To demonstrate most practical means of clearing land of stumps.

where A limited number of stump clearing demonstrations will be given when needed most. The Dept. will get the cooperation of the Dynamite and Stump pulling machine companies for these demonstrations. It would probably be advisable to demonstrate tractors in this work also. A series of several demonstrations should be arranged for so that the companies cooperating with us will get enough out of the demonstration to pay them for their time. These demonstrations should be advertised well. The farmers will be shown how to blow a stump with dynamite, the best way to use the pullers and a combination of the two.

11. (a) FARM WATER SUPPLY AND SANITATION

Object - To demonstrate the most economical and practical method of getting running water in the farm home and improving the sanitation.

The agent should select a number of farmers that wish to put water in the home and the dept. will send an engineer to make an examination of these farms and advise on the best and most economical system to install. The engineer will get all necessary data in regard to the available water supply etc., and make an estimate on the cost of installing the system. Where it is necessary to construct septic tanks for water disposal the dept. will furnish plans, etc. for these tools and will assist in installing a limited number to each county.

(b) FARM LIGHTING PLANTS AND HOME LABOR SAVING DEVICES

The department will assist the county agents in getting labor saving devices and lights installed in the farm home. Probably one of the best means of doing this work is to select a few farmers' wives who wish to put in appliances and take these women on a tour of inspection of other farm homes which have the modern equipment wanted. *Also to hold meetings at which illustrated lectures will give given on various types of systems etc.*

(c) FARM HYDOR ELECTRIC DEVELOPEMENT

Object - To demonstrate the installing of farm Hydor-electric plants.

Many farms have large streams with ample head to commit this water power into electric energy. Where these conditions exist the Dept. will make surveys and prepare plans and specifications, etc., and assist with the installing of a hydro-electric plant. / This is a good project for a community for-instance several farmers can join in the cost of installing a plant and all of the m get this power and light from the one plant. *then*

111. POWER FARMING

(a) Farm Implements.

Object - To demonstrate the use of some improved farm implements that are needed in a certain section.

Many sections are still using old one horse implements when they could cut down the expense of cultivation etc., by using a modern implement that will do more work. The Agent should select the type of implement which he wishes to demonstrate and the Dept., will furnish a man and get the cooperation of the implement manufactureres in putting on the demonstration.

(b) Gas Engines and Tractors

Object - To demonstrate the use of engine power on the farm.

When the Agent believes there is need for the more general use of farm tractors and gas engines, the Dept. will arrange for demonstrations when a number of companies will be invited to join and demonstrate ~~this~~ machinery. In sections where the engine and tractor is in fairly general use the dept. will hold short courses on tractors and engines of about 3 days duration. At these schools the farmers will be taught the principles of the gas engine and the proper care and repair of his engine or tractor so that he can get more efficient use out of it, and he will be able to make his own minor repairs. Tractor and gas engine short courses will be held at the College and each agent will be asked to send one or two men from his county.

1V. FARMSETAD PLANNING

(a) Farm Buildings.

Object - To demonstrate the use of modern farm buildings.

The Dept. has a large assortment of farm building plans and is constantly adding to this collection. These plans will be sent to the farmers upon request. Agents should advise the farmers of this plan of service and have them make use of it. Our booklet of plans will be ready in a few weeks now and each county agent will be supplied with a copy. When a farmer wishes to build you can have him go thru this booklet and select the plan that he likes and then send to us for the large detail drawings.

Each agent will be supplied with an farm like plan booklet containing samples of all our large detail plans.

the dept.
In some cases we will send an engineer to assist the farmer in getting his building laid off and started. *Especially in cases where community buildings are to be erected such as lime storage houses, warehouses, fruit + potato storage houses etc.*

(b) EFFICIENT ARRANGEMENTS OF THE FARMSTEAD.

Object - To lay out and rearrange a farm so as to enable the farmer to handle the largest possible amount of work with the least amount of labor, etc.

The agent should select a farmer who is willing to follow instructions and whose farm affords a good opportunity to carry out the arrangement of bldgs, fields, etc.

A map will be made of the farm by one or our engineers and will show acreage, fences, location of buildings, and suggested rearrangements so as to make the farm an efficient lay-out. The Agronomist and other specialists interested will be consulted in regard to their lines.

This should be a project in which all forces of the extension division would be consulted and the farm made demonstration farm in every way. A good type of man to get interested in this project is the business man who wishes to start farming. If a man can be selected who is just starting we can lay out the farm from start to finish.

V. MISCELLANEOUS ENGINEERING PROBLEMS.

Our dept will handle any problems of an engineering nature with which the farmer has to deal. Farmers are invited to write us for information of my division.
~~Have your farmers with us for any advice on problems of an engineering nature. If we can't answer them we will call upon the aid of other engineering departments of the College. We want you to know that we are here for service and will do the best we can to handle the problems that come to us.~~

~~Our present arrangements makes it necessary that we do the bulk of our extension work in the fall months so we ask that you write us for assistance at once if you wish it this year.~~

- ~~Cooperating Building~~
- ~~Sweet Potato Storage buildings~~
- ~~Fruit " "~~
- ~~Warehouses~~
- ~~Lime Storage bins~~
- ~~Fair buildings~~
- ~~Sale Pavilions~~