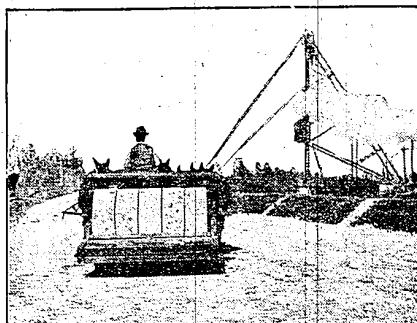


Permanent Features of the Road Bed

Foundations, Drainage and Grading a Permanent Investment

Prepared by the U. S. Department of Agriculture



Rolling Shell Road, New Orleans.

Rolling Shell Road, New Orleans.

In expending money raised by the sale of highway bonds, highway engineers should distinguish between the perishable features of the road and the permanent features of the road. Foundations, drainage, structures, alignment and grades are in general fairly permanent features which should be looked upon in the light of an investment. If these features do not comply with a certain standard, it will be necessary to spend money on transitory improvements.

Concrete, asphalt, macadam, and brick surfaces are sometimes regarded as permanent, but this is hardly safe. It is not yet definitely known how long the best concrete surface will last. The best vitrified brick surfaces may last a number of years, but even with them repairs will be required.

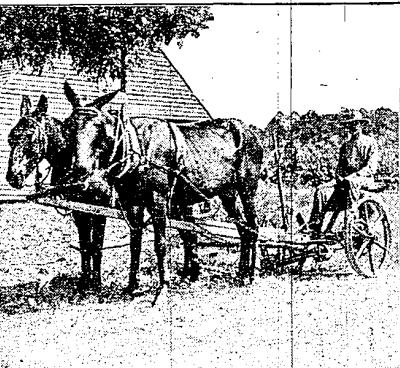
Even when much of the money expended upon a highway has gone into the permanent features, there is still danger that the cost of repairs and maintenance will be overlooked, or at least slighted, in the calculations of

about 62 per cent of the total cost of a well-built macadam road may be considered as spent for permanent features, and with bituminous macadam roads, about 50 per cent. This method of estimating cannot be applied to any gravel or natural soil road in which no part of the surfacing can advantageously be considered permanent, for under most systems of maintenance it steadily deteriorates.

Roads built with surfaces entirely of concrete, or of brick, or even a combination of concrete and brick, are sometimes regarded as permanent, but this is hardly safe. It is not yet definitely known how long the best concrete surface will last. The best vitrified brick surfaces may last a number of years, but even with them repairs will be required.

It should be born in mind by those charged with the expenditure of highway funds that the initial cost of a road is never the final one; that no surface is permanent, and that repairs will be required.

Even when much of the money expended upon a highway has gone into the permanent features, there is still danger that the cost of repairs and maintenance will be overlooked, or at least slighted, in the calculations of



Patrolman Cutting Weeds on the Road, Canton, N. C.

the road builders. When roads are built with borrowed money it is, of course, especially important to avoid this error. On the other hand, however, it is not necessary to regard the total cost of surfacing a road as a transitory improvement. Much of the money spent on a permanent investment must be carefully observed in order that the county may have something to exchange when the time comes to repay the loan.

A Few Ways of Saving Money. Saving money by not spending it for good roads is by saving it in refusing to improve stock.

It is like saving it by refusing to build a modern barn.

It is like saving money by doing away with a silo.

It is like saving money by using machinery beyond its period of usefulness.

It is like saving money by paying to the doctors instead of curing for the health of the family.



Congrete Road After One Year's Use, Chevy Chase, Maryland.

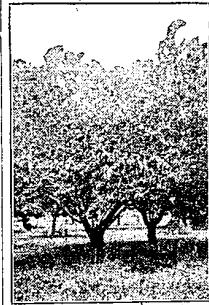
Horticultural Points

TILLAGE IN PEACH ORCHARDS

Do Not Resort to Commercial Fertilizers Until All Other Resources Have Been Exhausted.

The peach appears to be the most susceptible of all fruits to the influence of commercial fertilizers, says a writer in *Practical Farmer*. While results obtained by the various experiment stations on apples are contradictory, there appears to be a remarkable unanimity of results as far as the peach is concerned. Incidentally, many of the old theories regarding the proper feeding of peach trees have been overthrown.

Before entering into any discussion of fertilizers, it might be well to digest for a few moments upon the subject of cultivation of the peach. From my personal observations I am fully convinced that not one man in ten who grows peaches realizes the importance of thorough tillage in the peach orchard. In many cases where commercial fertilizers have been employed with good results, the same re-



Elberta Peach Trees.

sults might have been obtained, and far more cheaply, if better methods of tillage had been practiced.

The peach grower should not resort to commercial fertilizers until he has exhausted the resources of tillage and cover crops. I have in mind a large orchard in central Delaware where the tillage had been of the best possible care. In this orchard, above approach, yet the trees began to decline in fruit production. A single test during the past season has shown that this particular orchard needs nitrogen and that a small application of nitrate of soda will mean the rejuvenation of the orchard.

NOTICE TO BERRY SHIPPERS

Law Requires That Crates Shall Be Marked With Statement of Quantity of the Contents.

A recent scientific and regulatory announcement of the United States Bureau of Chemistry contains the following, which should be of interest to shippers of berries, peaches and tomatoes when ordering their crates for the coming season's shipments: "The department is of the opinion that berries, peaches, or tomatoes in small open containers which are packed in crates and arranged within the crates in layers or tiers, constitute for the purpose of marking, the quantity of the eighteenth amendment, and that consequently the law requires that the crates shall be marked with a statement of the quantity of the contents. Each such statement should include the number of small containers and the quantity of the contents of each."

THINNING AIDS FRUIT TREES

Overproduction of Seeds Exhausts Vitality—Orchardist Should Aim to Improve Quality.

Thinning makes trees live longer and produce more fruit in the course of time. The overproduction of seed and excess weight of a tree, and is the chief cause of over-lifted trees. Thin fruit hard, and keep the trees alive and productive.

Thinning increases the fruit growers' profits by increasing both the quality and the quantity of fruit produced within a space of a few years, because he will have practically as much fruit to sell, of large size and better quality, and hence at better prices, from trees that bear more nearly annually.

Handle Apples Carefully.

The growers who produce the finest and highest priced apples instruct their pickers to handle the apples just as if they were eggs.

Top-grafting Favored.

In unproductive orchards of but a single variety, top-grafting part of the trees with other varieties is recommended.

Dairy

RATION FOR DAIRY COWS

High Protein Concentrates Other Than Corn Must Supplement Roughage—Oats Are Favored.

With fodder alone as roughage cows must have some high protein concentrate and they must be other than corn. If corn is used, it will be well to make them a part of the ration. Rye is as harmless as any other grain to a pregnant animal when not affected with ergot. If it is worth no more per pound than corn it may well be used in part. Coated corn meal at the present time is a much cheaper source of protein than linseed meal, and with oats and rye or a wheat product in the ration, it will be needed to supply the deficit of protein. However, if oats appear to need a more laxative ration, better substitute linseed, at least in part, for the coated meal.

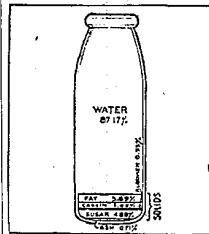
It matters little to the cow whether the corn is shelled before being ground, or even whether it is ground, so long as the cobs are soft enough to enable her to eat them readily.

But to compound a ration from the list submitted: Using the corn in the form of meal and grinding both oats and rye, use one part by weight of each of these and two of coated meal.

SOLIDS CONTAINED IN MILK

According to Best Authorities Fat, Casein, Sugar, Albumen and Ash Will Vary Somewhat.

The accompanying diagram shows that about 87 per cent of milk is water. Held in suspension therein is what is collectively known as solids. These are fat, casein, sugar, albumen and ash. It is generally understood that these milk solids vary more or less and it is impossible to make an accurate statement of the percentage.



Out of the Stats.

A disheveled citizen rushed into a police station and shouted for vengeance.

"The automobile that hit me five minutes ago was No. 41144," he spluttered.

"I can prove that he was exceeding the speed limit, and I want—I want—" "You want a warrant for his arrest?"

"Warrant, nothing! What good would a warrant do me at the rate he was going? I want extradition papers."

TAKE SALTS TO FLUSH KIDNEYS IF BACK HURTS

Says Too Much Meat Forms Uric Acid Which Clogs the Kidneys and Irritates the Bladder.

Most folks forget that the kidneys, like the bowels, get sluggish and clogged and need a flushing occasionally, else we have backache and dull misery in the kidney region, severe headache, rheumatism, gout, torpid liver, acid stomach, sleeplessness and all sorts of bladder disorders.

You simply must keep your kidneys active and clean, and the moment you feel an ache or pain in the kidney region, get about four ounces of Jad Salts from any good drug store here, take a tablespoonful in a glass of water before breakfast for a few days and your kidneys will then act the. This famous salts is made from acid of grape and rhubarb root and is astringent, antiseptic, food and a cure for constipation, fainting fits when it reaches the right people. It requires some business ability to work up a select trade for any home product, yet it is not at all difficult to create a demand for a certain brand of butter among those who know a good article when they see or taste it, and are willing to pay a little extra for what suits them.

DAILY NOTES

No Reason Why Farmer Should Not Compete With Creameries—Some Business Ability Needed.

There is plenty of room today for the private farmer who wants to sell his own in the form of butter. Because the creameries have nearly monopolized the retail city trade is no reason why butter made on the farm should not compete successfully with the best of the creamery butter. This class of butter, which is made from but one herd of well-bred cows and from separated sweet milk, should form one of the best articles of food and is harmless to the system, and is harmless to the body.

Sweet milk should form one of the best articles of food and is harmless to the body.

It requires some business ability to work up a select trade for any home product, yet it is not at all difficult to create a demand for a certain brand of butter among those who know a good article when they see or taste it, and are willing to pay a little extra for what suits them.

FRESH AIR FOR COWS, but no exposure to bad weather.

Corn silage, in the frozen stage, should not be fed to dairy cows.

The greatest contamination of the milk flow occurs at the time of milking.

Milking the cow clean will develop her udder and help to increase her milk capacity.

It never pays to kill the heifer calves from the best cows. Raise them to replace the poor cows.

Milk must be promptly cooled and kept cold. The growth of germs is checked by cold.

Too much cannot be said about the way in which cows are treated in the stable. Kindness must prevail.

Frequent attention to distribution of the cows' bedding is just as important as to supply a large amount of it.

The trouble with hitting the bottle is that it's apt to strike back.

Another Testimonial for

CALUMET BAKING POWDER

The President's Wedding Cake

was prepared by Mrs. Maria Cole Fisher and Miss Panay Bowen, both of whom are known throughout the United States as leaders in Domestic Science work. This Wilson Galt Wedding Cake was worthy of the occasion in every way. Calumet Baking Powder was used in its preparation, and both the above-named ladies heartily recommend Calumet Baking Powder for its purity, wholesomeness, economy and never-failing results. These ladies use Calumet exclusively in their work.

Received Highest Award World's Pure Food Exposition, Chicago, Paris Exposition, France, March, 1912.

MEN'S ALL WOOL SUITS Sold Direct From Factory to Wearer from Manufacturer, F. J. Wilson & Co., 111 S. 11th Street, Philadelphia, Pa.

Out of the Stats.

A disheveled citizen rushed into a police station and shouted for vengeance.

"The automobile that hit me five minutes ago was No. 41144," he spluttered.

"I can prove that he was exceeding the speed limit, and I want—I want—" "You want a warrant for his arrest?"

"Warrant, nothing! What good would a warrant do me at the rate he was going? I want extradition papers."

TAKE SALTS TO FLUSH KIDNEYS IF BACK HURTS

Says Too Much Meat Forms Uric Acid Which Clogs the Kidneys and Irritates the Bladder.

Most folks forget that the kidneys, like the bowels, get sluggish and clogged and need a flushing occasionally, else we have backache and dull misery in the kidney region, get about four ounces of Jad Salts from any good drug store here, take a tablespoonful in a glass of water before breakfast for a few days and your kidneys will then act the. This famous salts is made from acid of grape and rhubarb root and is astringent, antiseptic, food and a cure for constipation, fainting fits when it reaches the right people. It requires some business ability to work up a select trade for any home product, yet it is not at all difficult to create a demand for a certain brand of butter among those who know a good article when they see or taste it, and are willing to pay a little extra for what suits them.

BUTTER ALWAYS IN DEMAND

No Reason Why Farmer Should Not Compete With Creameries—Some Business Ability Needed.

There is plenty of room today for the private farmer who wants to sell his own in the form of butter. Because the creameries have nearly monopolized the retail city trade is no reason why butter made on the farm should not compete successfully with the best of the creamery butter. This class of butter, which is made from but one herd of well-bred cows and from separated sweet milk, should form one of the best articles of food and is harmless to the body.

Sweet milk should form one of the best articles of food and is harmless to the body.

It requires some business ability to work up a select trade for any home product, yet it is not at all difficult to create a demand for a certain brand of butter among those who know a good article when they see or taste it, and are willing to pay a little extra for what suits them.

DAILY NOTES

Fresh air for cows, but no exposure to bad weather.

Corn silage, in the frozen stage, should not be fed to dairy cows.

The greatest contamination of the milk flow occurs at the time of milking.

Milking the cow clean will develop her udder and help to increase her milk capacity.

It never pays to kill the heifer calves from the best cows. Raise them to replace the poor cows.

Milk must be promptly cooled and kept cold. The growth of germs is checked by cold.

Too much cannot be said about the way in which cows are treated in the stable. Kindness must prevail.

Frequent attention to distribution of the cows' bedding is just as important as to supply a large amount of it.

The trouble with hitting the bottle is that it's apt to strike back.

Landlord—hate to remind you of your board bill.

Mr. Slowpay—Don't mention it.

ALLEN'S FOOT-EASE FOR THE

Many war zone hospitals have ordered

Allen's Foot-Ease. The antiseptic powder.

The shoe and used in the foot-bath.

Allen's Foot-Ease gives relief and comfort to those who have been in the heat and cold.

Allen's Foot-Ease is the best foot bath.

Allen's Foot-Ease is the best foot bath.