All cement generates heat during setting, and if this heat can be conserved in the concrete, a satisfactory means of protection against frost is produced as long as it does not cause unbalanced internal stressing. This naturally-developed heat can be conserved in newly-laid concrete by covering the concrete with a tarpaulin or other material placed not only to exclude draughts underneath, but to leave a space between the concrete and the covering.

The protection of newly-laid concrete from heat and drying winds is as vital as protection against frost, as the concrete is not hard enough at an early age to resist without cracking the stresses set up by contraction. Timber shuttering is an adequate protection if left in position for at least a week; otherwise the concrete should be kept damp for a fortnight after being laid by being covered with wet sacks, damp earth, or by frequent watering.

Hardeners

Though several proprietary brands of concrete-waterproofing material or hardeners are available, the best means of waterproofing is by the use of additional cement and a consolidated mix. A good hardener that can be profitably applied to such work as milking shed floors or cattle yards is sodium silicate. This is not added to the concrete mix, but is applied as a solution to the surface after setting. It converts the inert lime set free from the cement during setting into silicate of lime, which is a strength-giving material, thus hardening the surface of the concrete.

Radio Broadcasts

THE following radio talk will be given to farmers from Station 1YA Auckland at 7.15 p.m.:—

December 7—"Current Farming Problems for the Month," by J. E. Bell, Fields Superintendent, Department of Agriculture, Auckland, A. J. Kerse, Fields Instructor, Department of Agriculture, Auckland, and H. Woodyear-Smith.

Other talks are given from 1YA Auckland on Tuesdays at 12.35 p.m., 2YZ Napier on Thursdays at 12.40 p.m., 2YA Wellington on Thursdays at 12.35 p.m., and 3YA Christchurch on Mondays at 12.20 p.m.

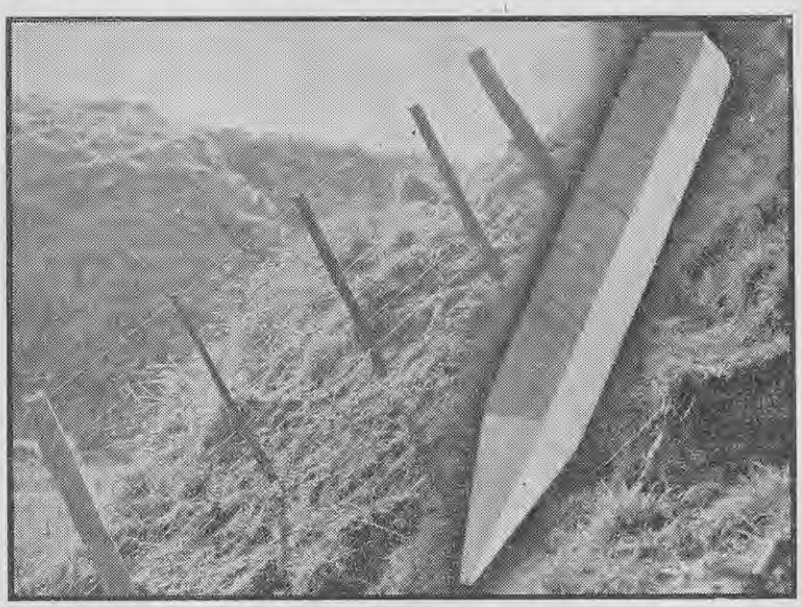
Pig Broadcasts

UNDER the auspices of District Pig Councils broadcasts will be delivered in December as follows:—

Auckland—1YA, on December 27, "Prevention of Seasonal Pig Ailments," by S. A. Morgan, Supervisor, Waikato District Pig Council.

Napier—2YZ, on December 9, "Increasing the Profit on Second-litter Pigs," by H. T. Donaldson, Supervisor, Tairawhiti District Pig Council.

DESTRUCTION OF SURVEY MARKS



THE heavy cost thrown on the community by the constant removal of or the destruction of survey marks is causing concern to the Department of Lands and Survey and to the New Zealand Institute of Surveyors, of which all practising surveyors are members. It is vitally important both from a national viewpoint and in the interests of individual landholders that survey marks should be retained.

WORK done by practising surveyors preceded all early settlement and the surveys and plans made continue to be required for an ever-increasing number of purposes. Surveys still precede the subdivision of either town lots or farms; still control all national development work; and, possibly most important, they still safeguard all titles to land.

The New Zealand system of land marking has been very carefully built up over the years and today has a world-wide reputation for accuracy. Every farmer or other land owner knows that the title to his land is guaranteed by the State, that all particulars of his boundaries are carefully recorded in the Department of Lands and Survey offices, and that, should any dispute arise, or his boundaries need redefinition, it is possible to have his corners marked out on the ground at any time. And not only marked, but reproduced in the right place. There is no guesswork about survey; the position of every survey mark is tabulated officially and recorded with reference to central fixed points—in Auckland, Mt. Eden; in the Manawatu, Mt. Stewart; and so on—and when a peg is re-established for any reason it is put back to all practical intents and purposes in the same place it was in originally.

If one or more old marks have been destroyed or removed, the surveyor must find others sufficient to check the accuracy of any new ground marking. That is why a surveyor brought in to fix a point on one property sometimes has to spend hours searching for old marks on another place, perhaps a mile down the road, which obviously leads to extra expense and often to considerable misunderstanding.

Actually the extra cost resulting from peg destruction amounts to a very considerable annual loss, much of it unnecessary. If a survey peg is moved at all, the work of replacing the peg will be difficult and expensive. The farmer who takes out a peg to place a post and then puts the peg back "in the same spot" would be better advised to leave it out of the ground; he would be far wiser not to move it in the first place, not just to please surveyors but as a matter affecting him closely. There are few occasions when it is essential to have a post in the exact position occupied by a survey peg and with a little care it is possible to place a post very close to a peg without moving it. In any case there are many necessary survey marks which are not actual boundary corners. If there is risk of a plough, mower, or heavy cattle destroying a peg, it should be driven straight down deeper into the ground.

The survey marks in most general use are 3in. x 2in. or 2½in. x 2½in. totara pegs 21in. long, or 1in. diameter iron spikes or galvanised-iron tubes 24in. long. In rural areas particularly, many prominent hill tops have trigonometrical stations on them, generally made of iron tubes up to 3in. in diameter. These are part of the original framework of the whole survey system and are most important.