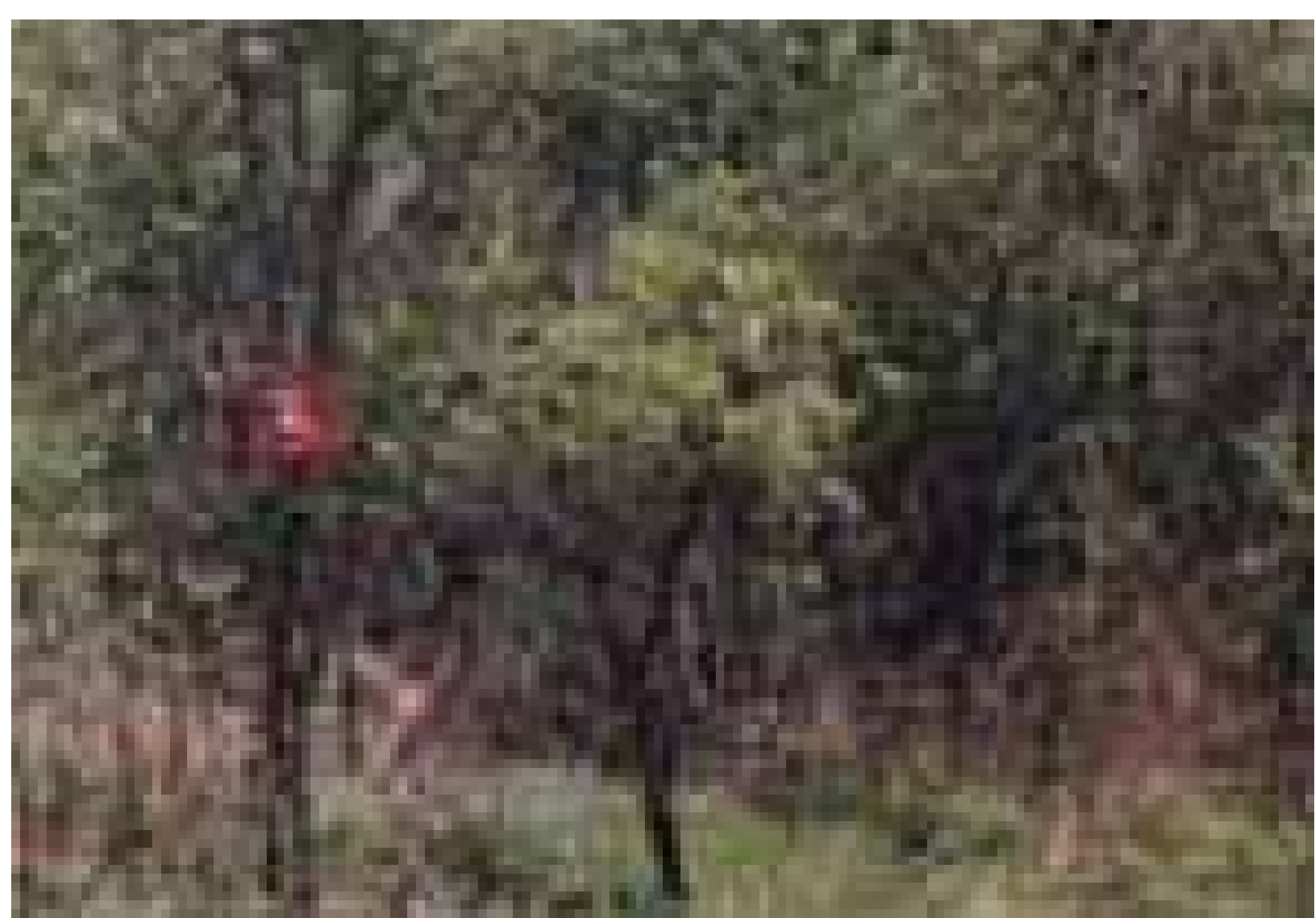


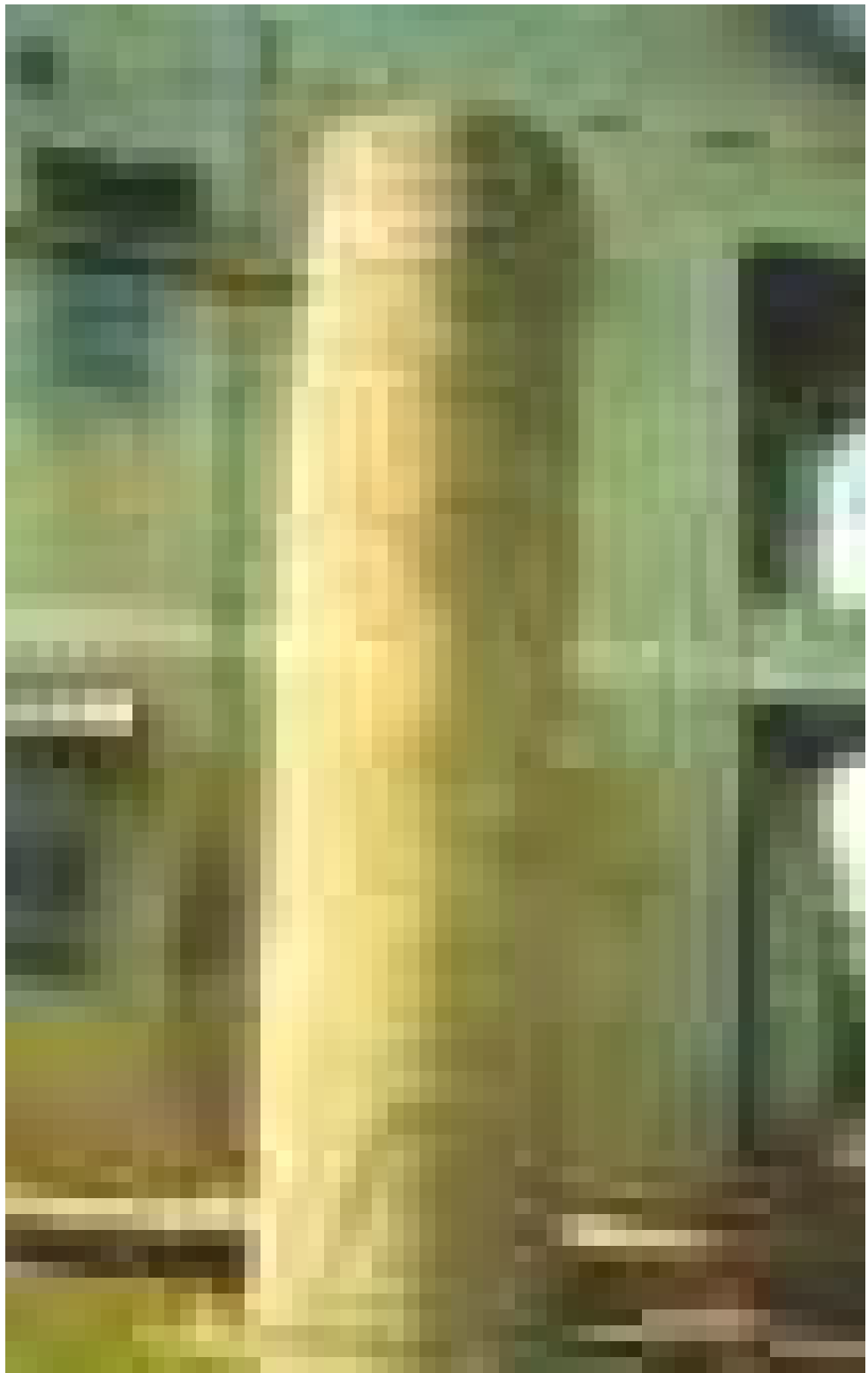
United Nations
Operation in Mozambique













































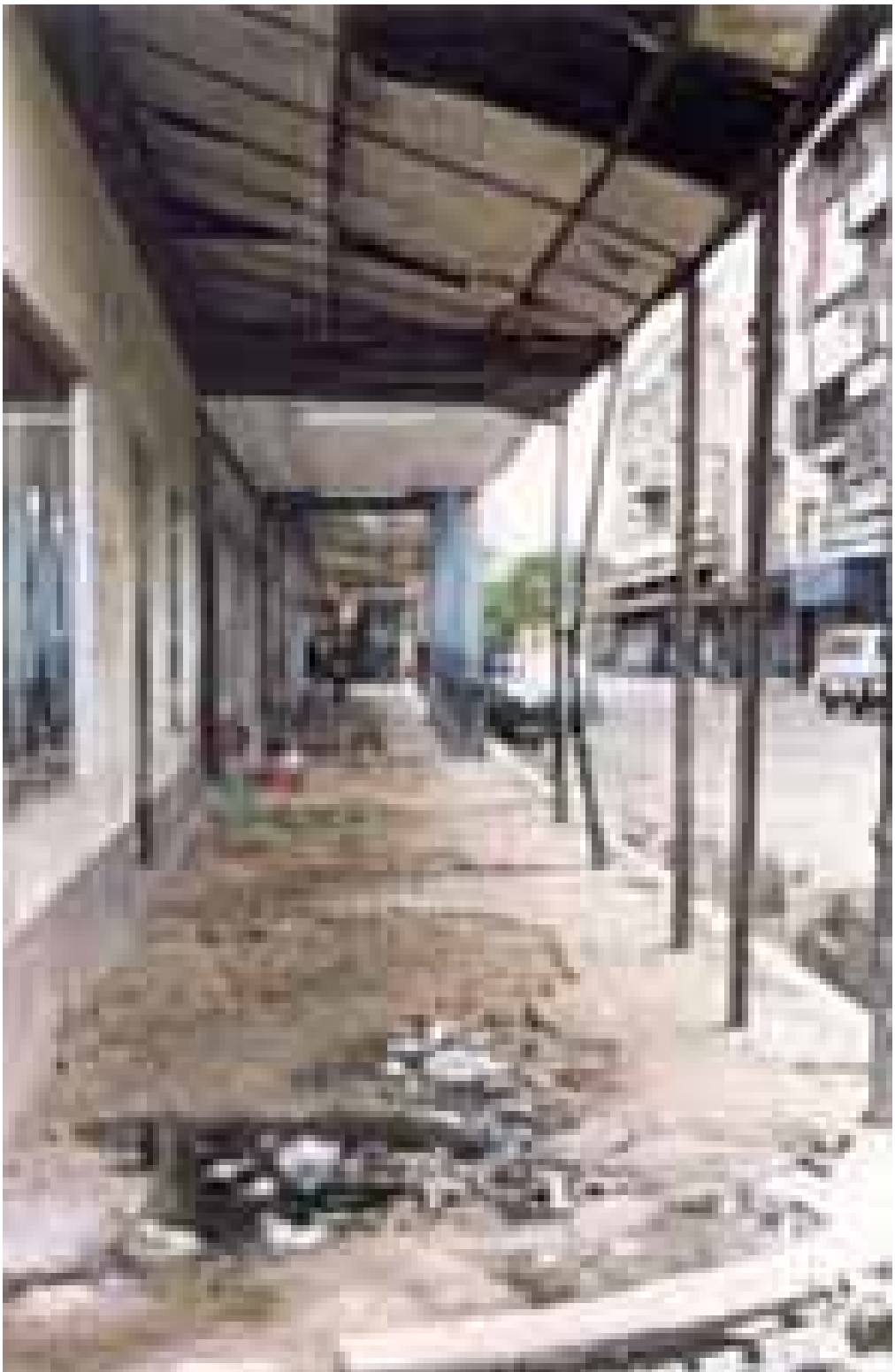






















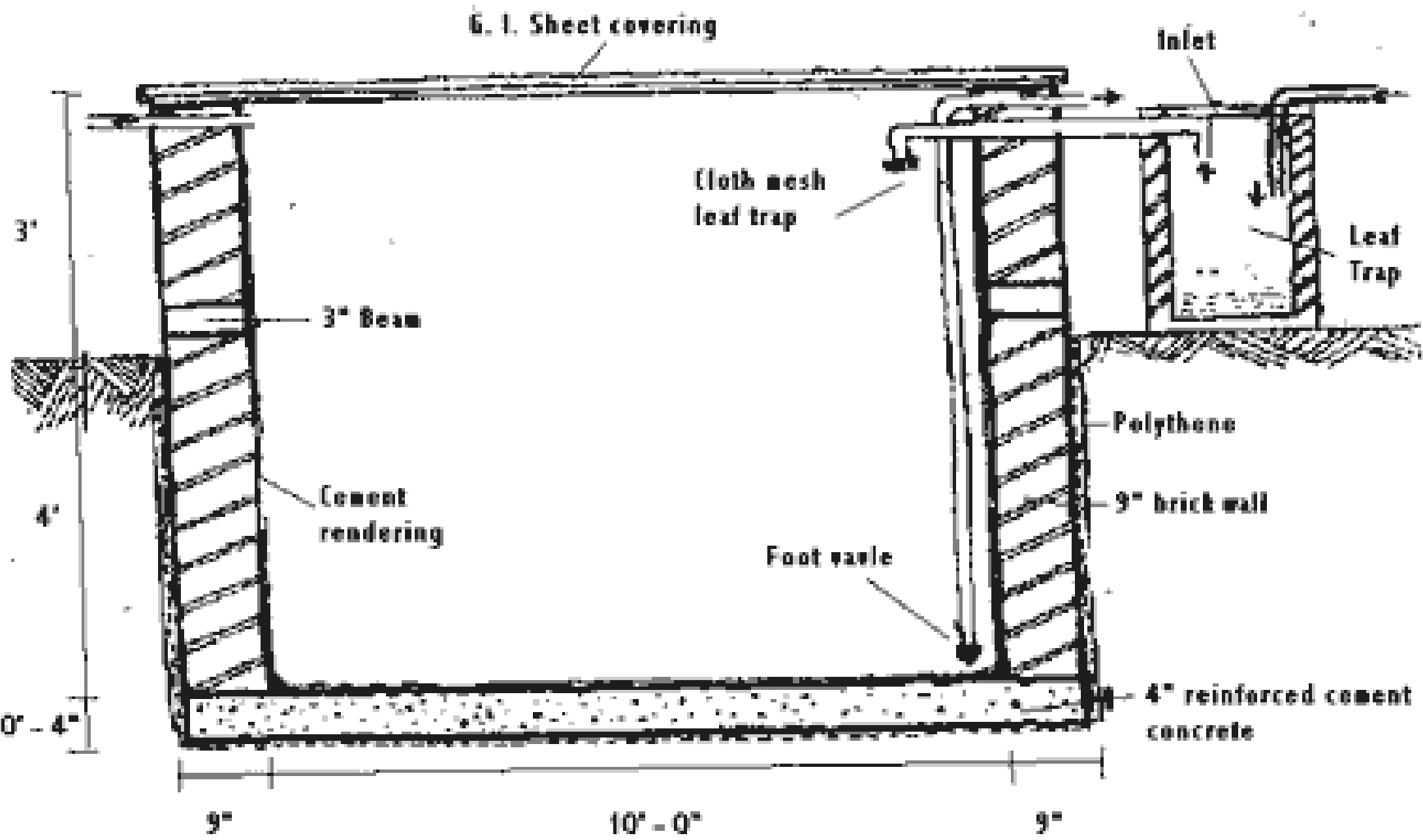


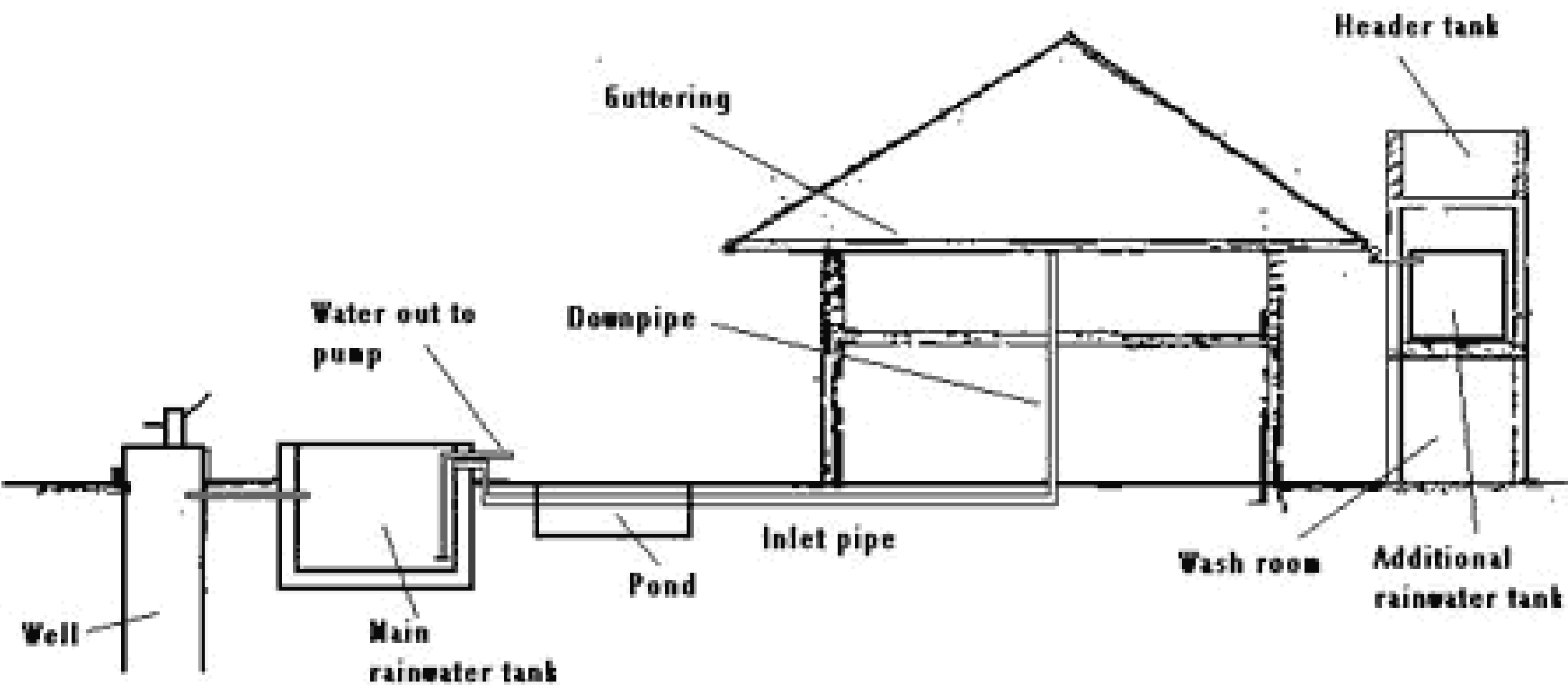


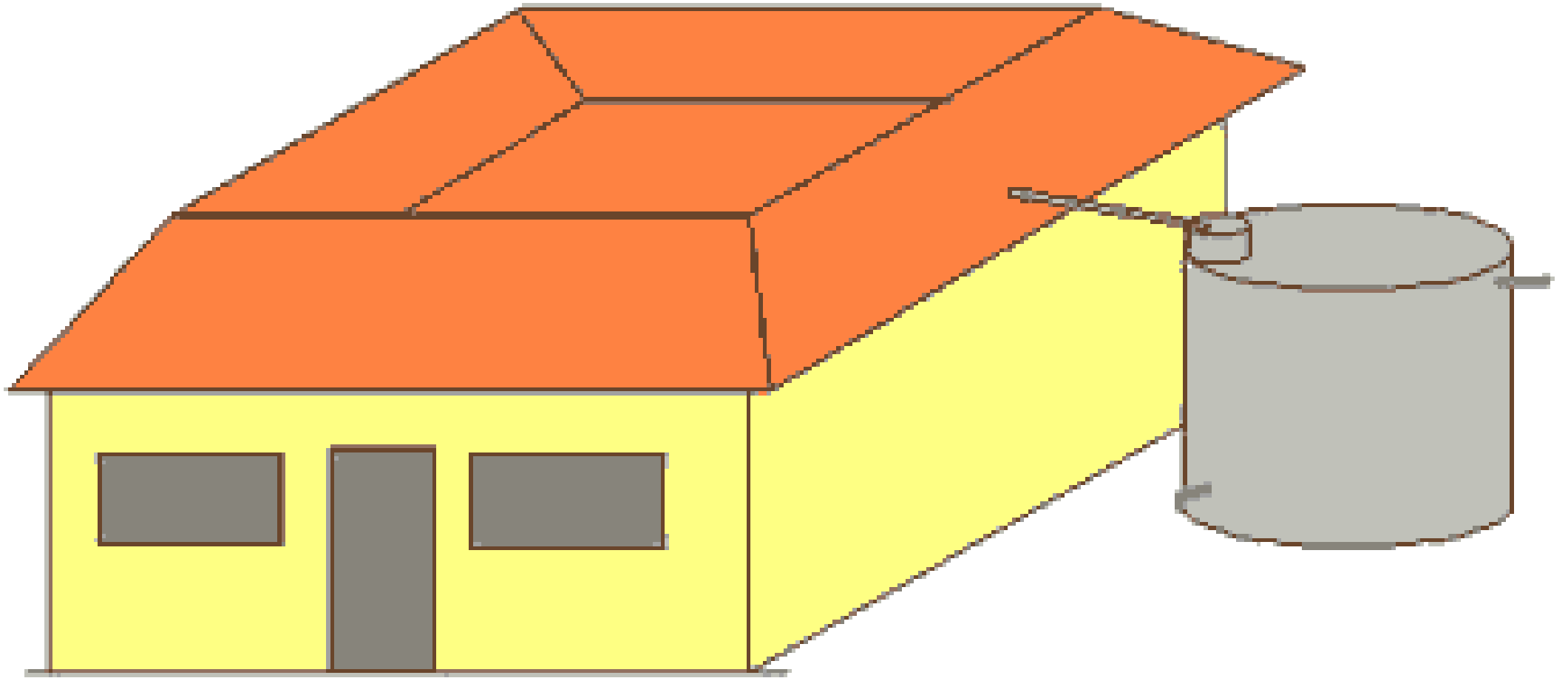


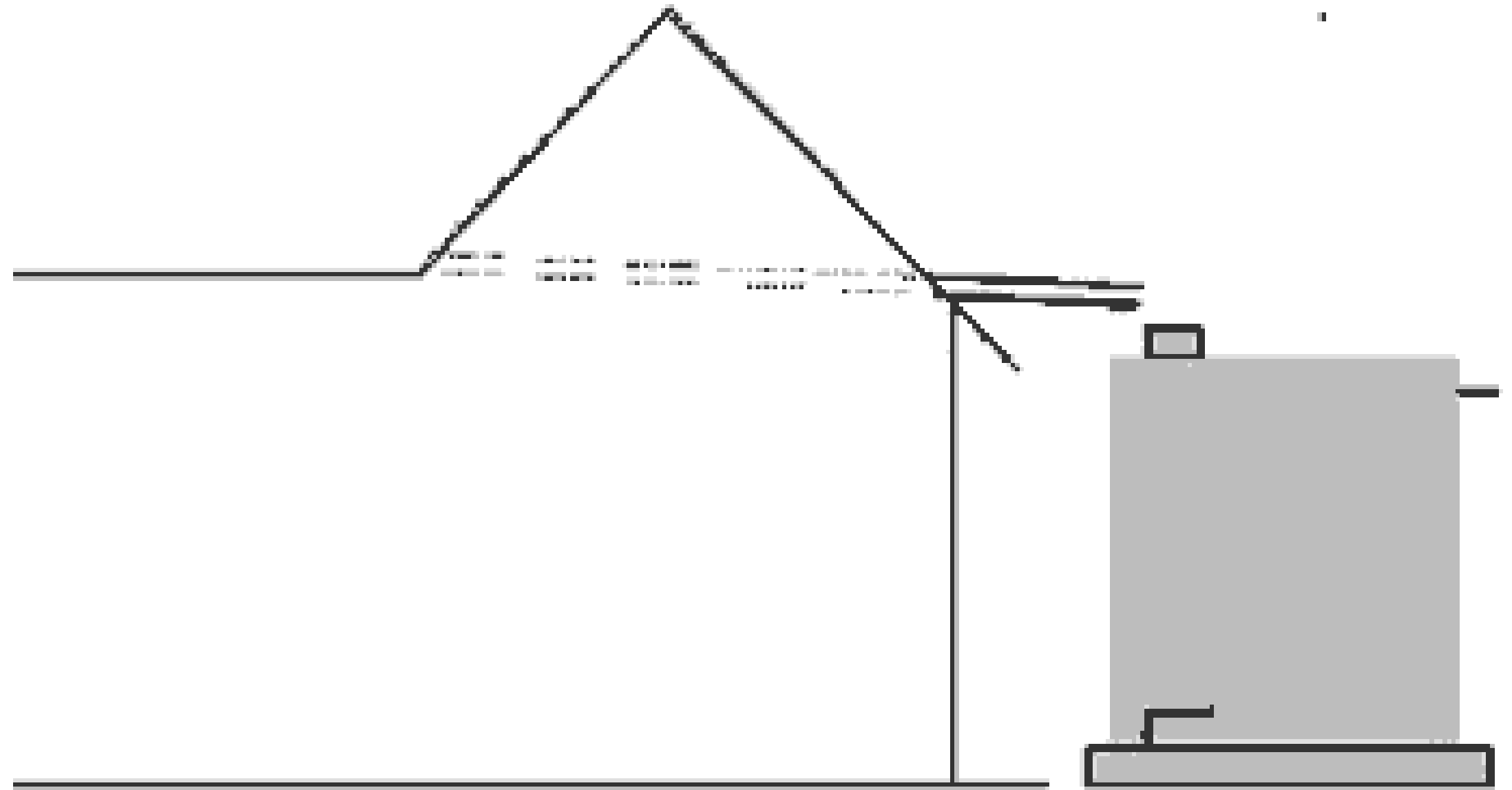


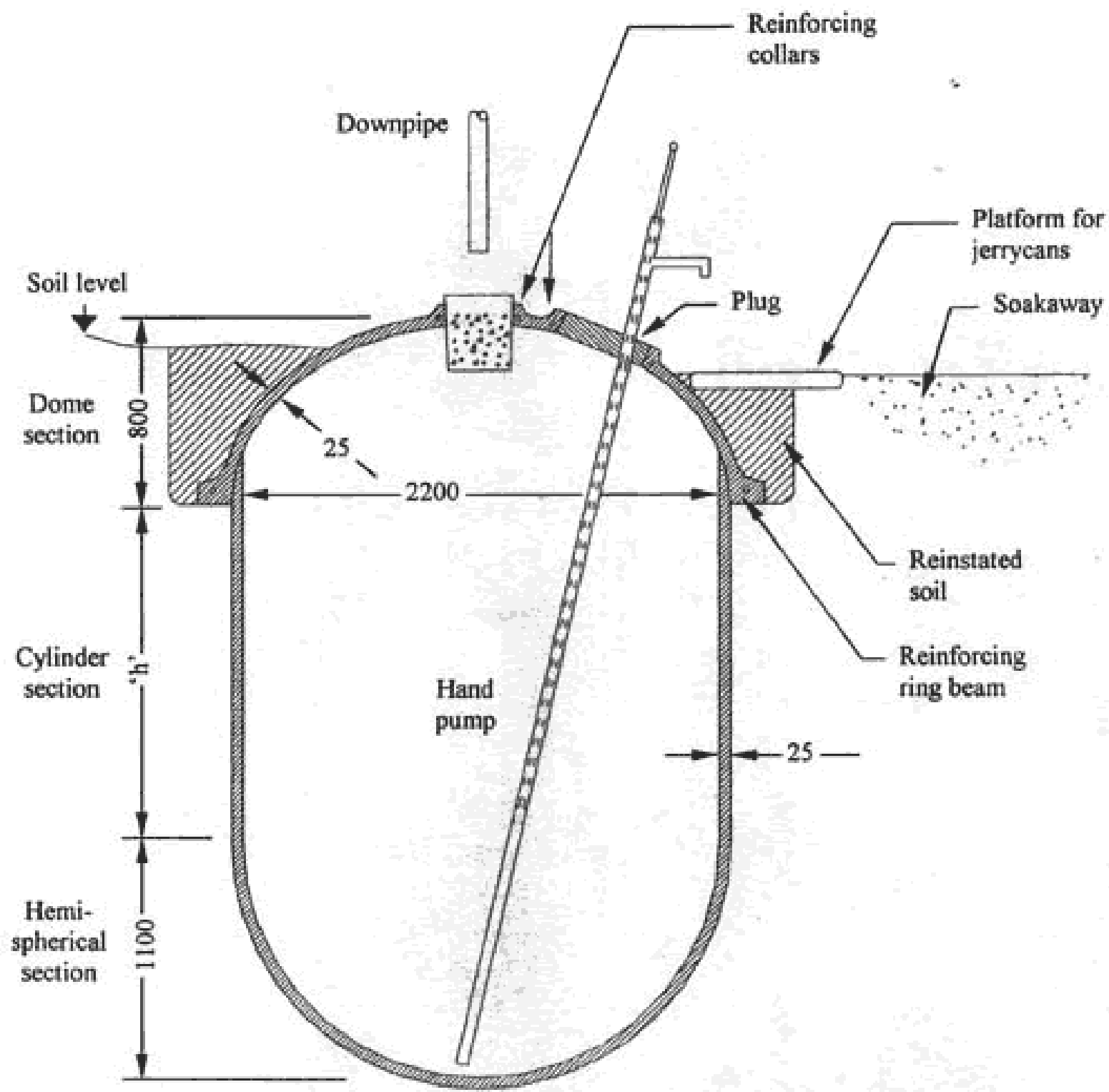


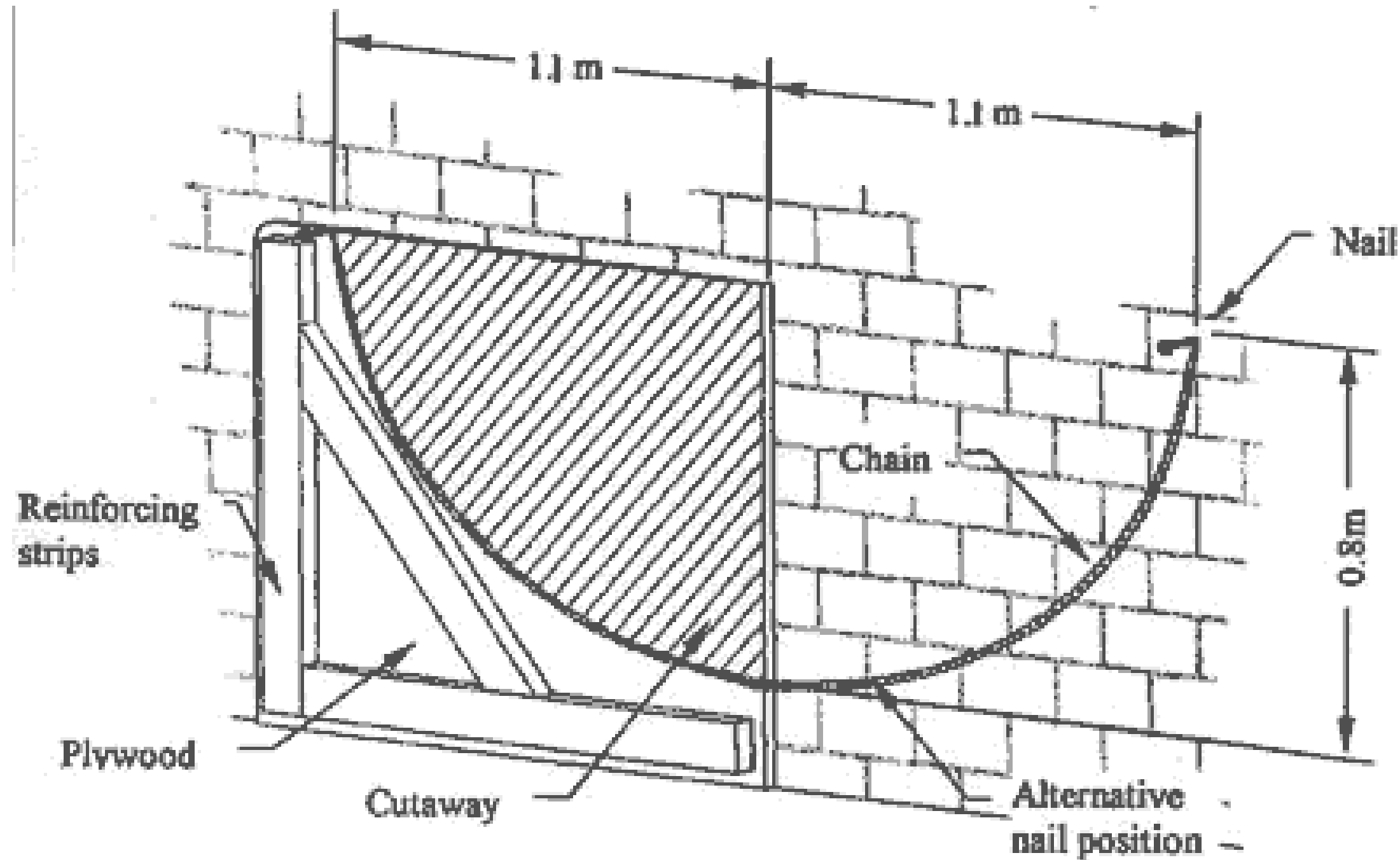


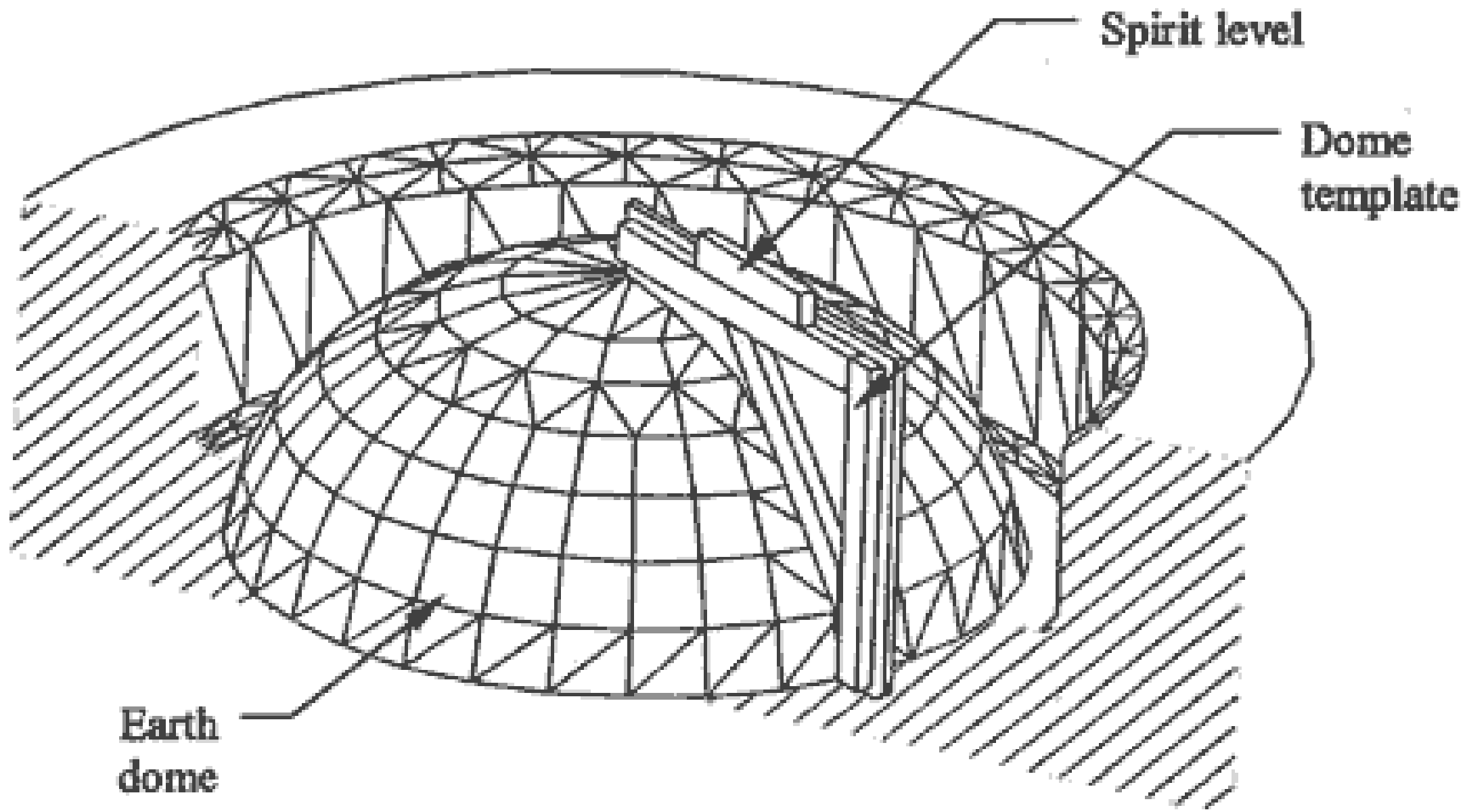








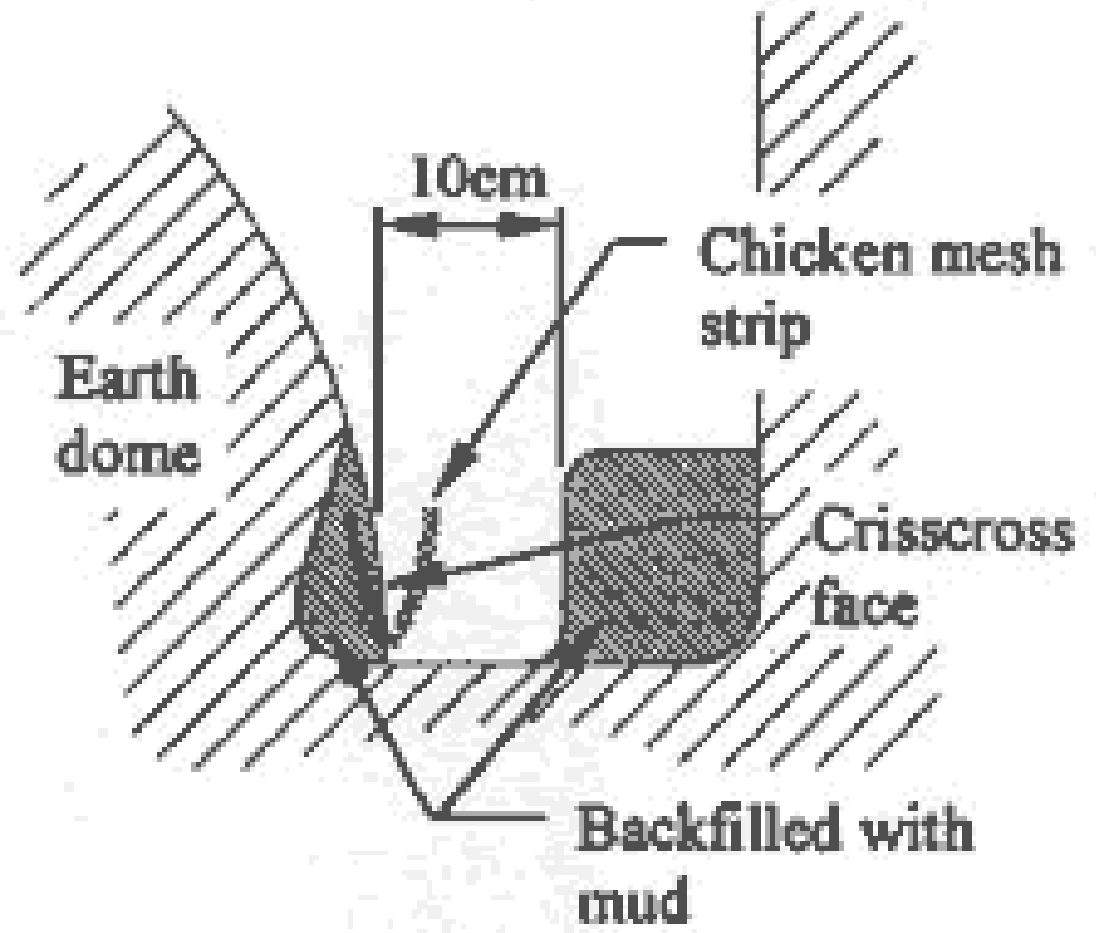
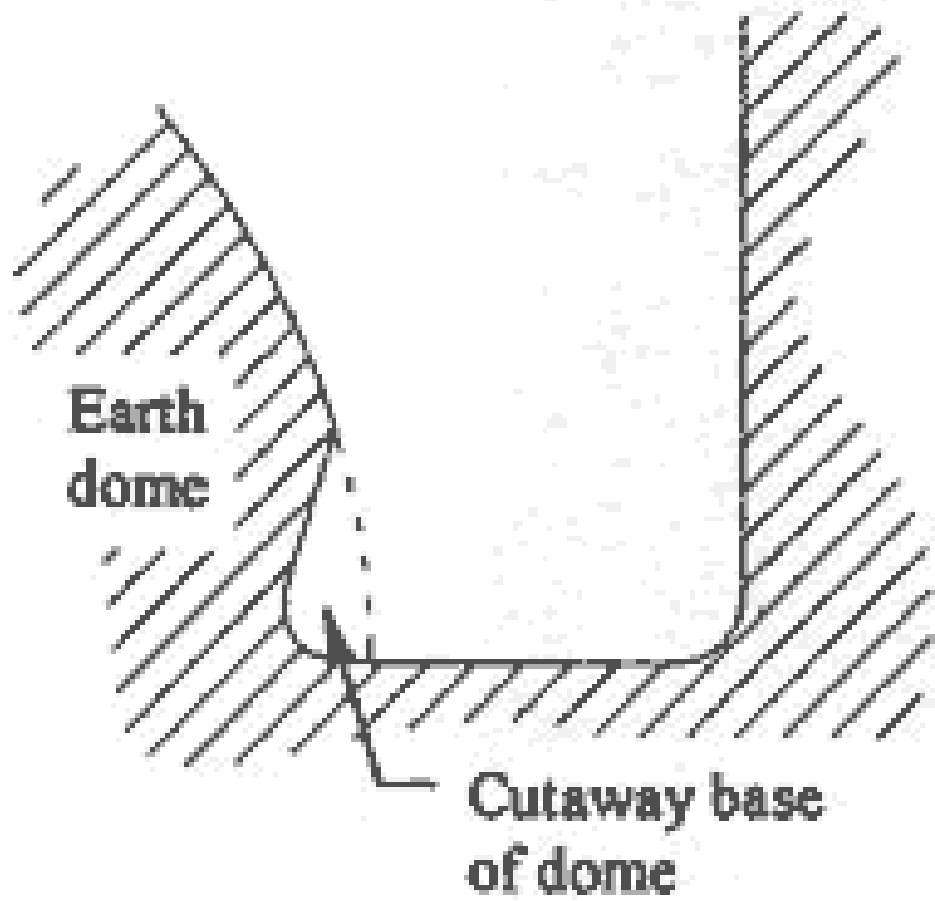


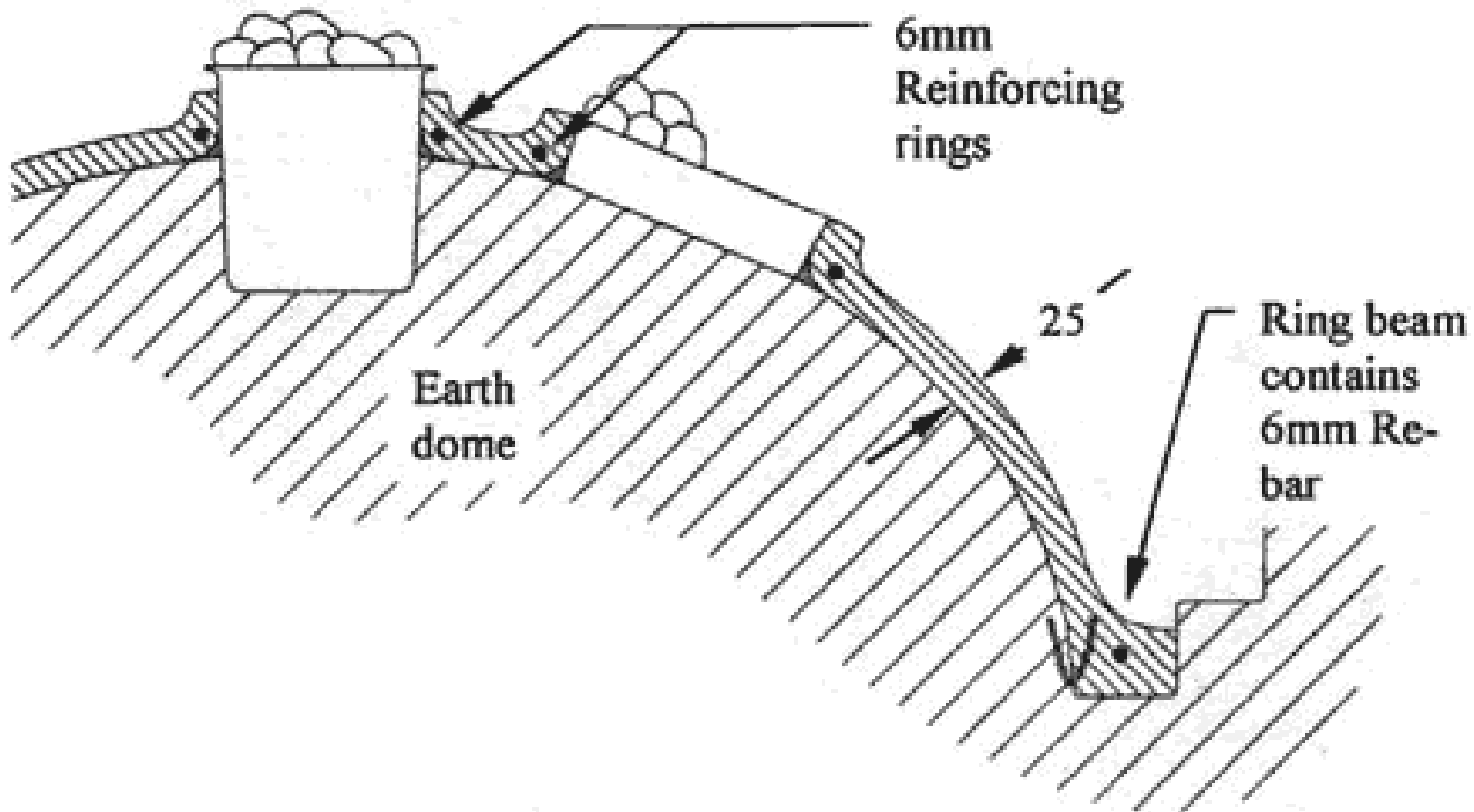


Spirit level

Dome
template

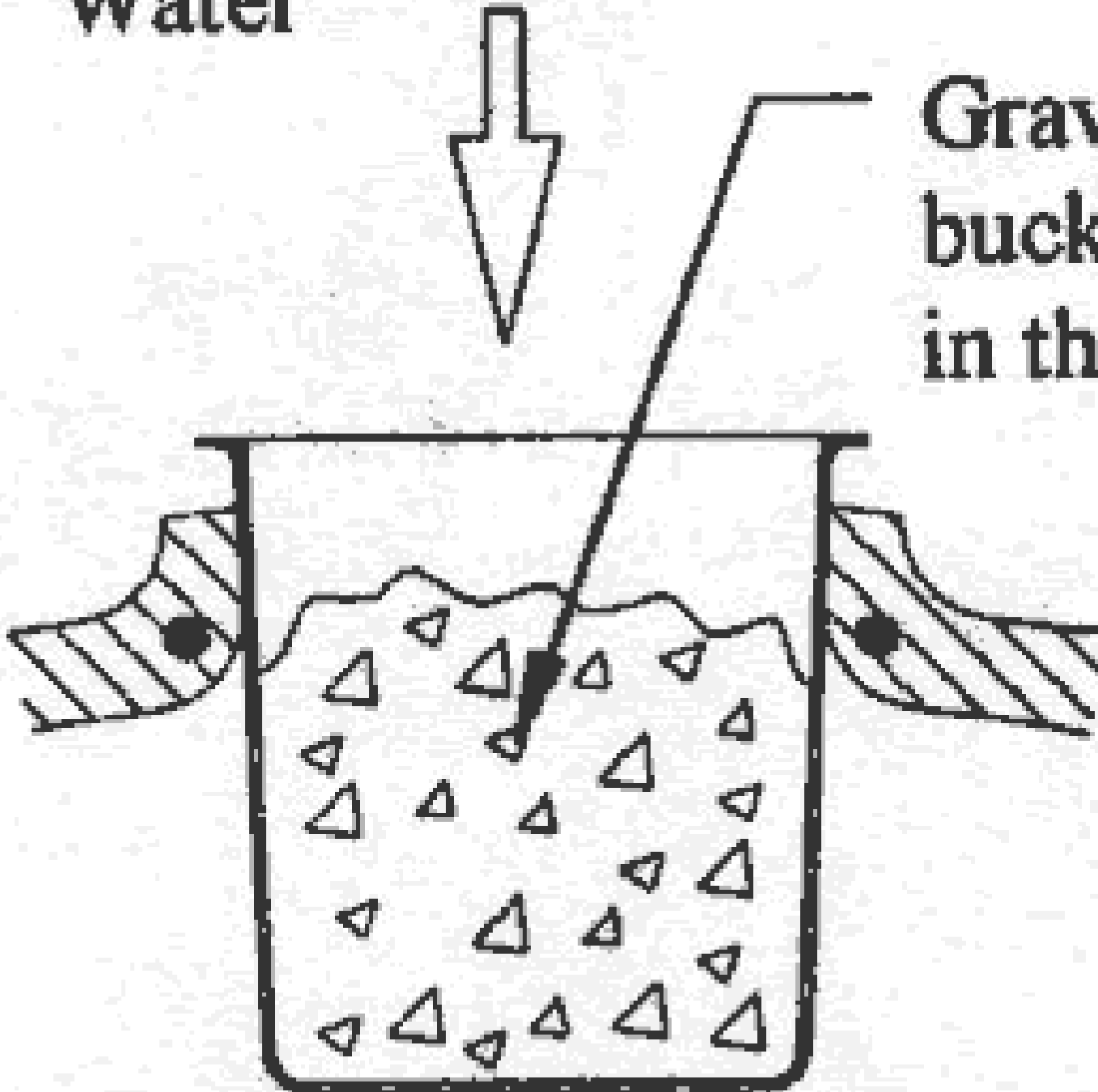
Earth
dome

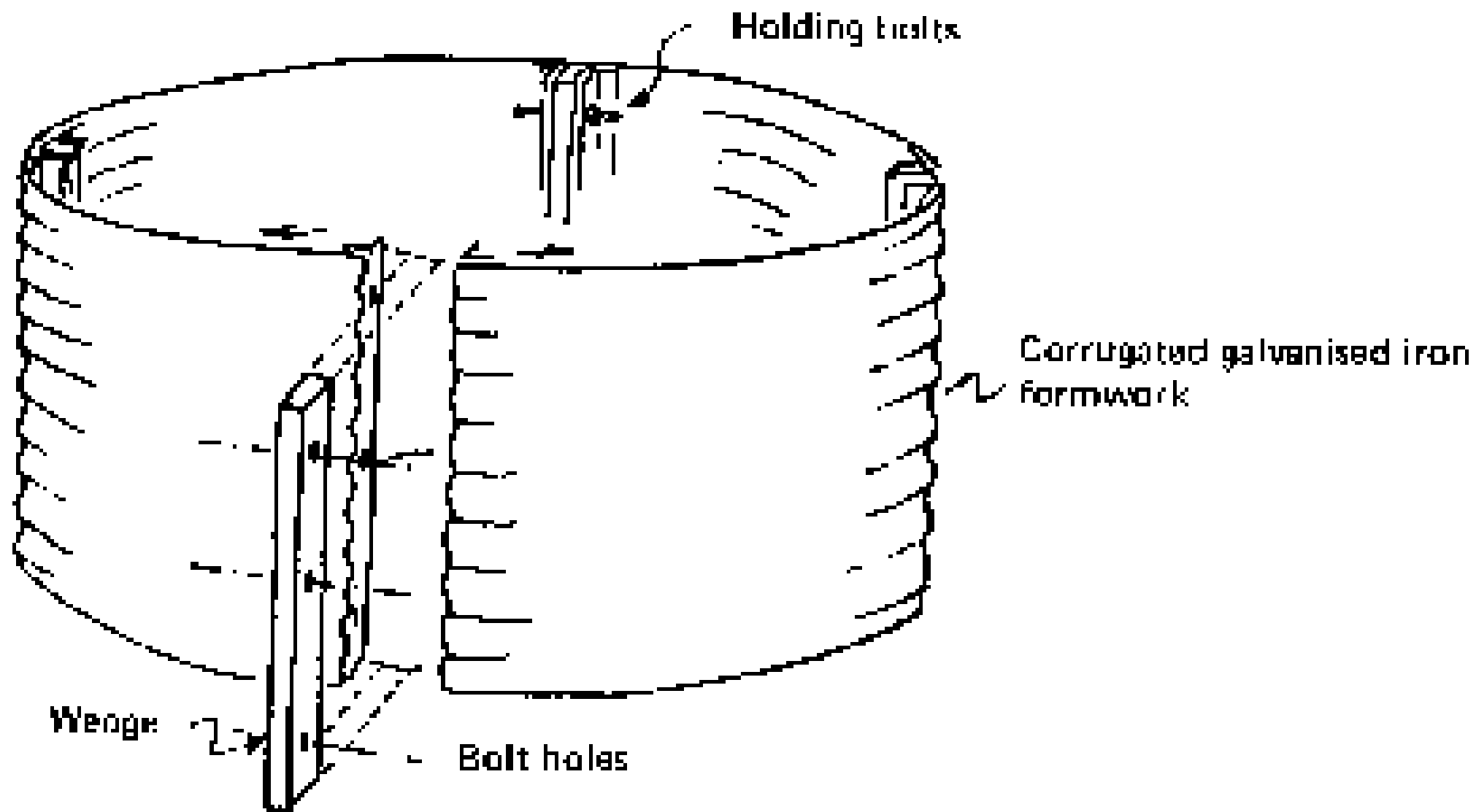


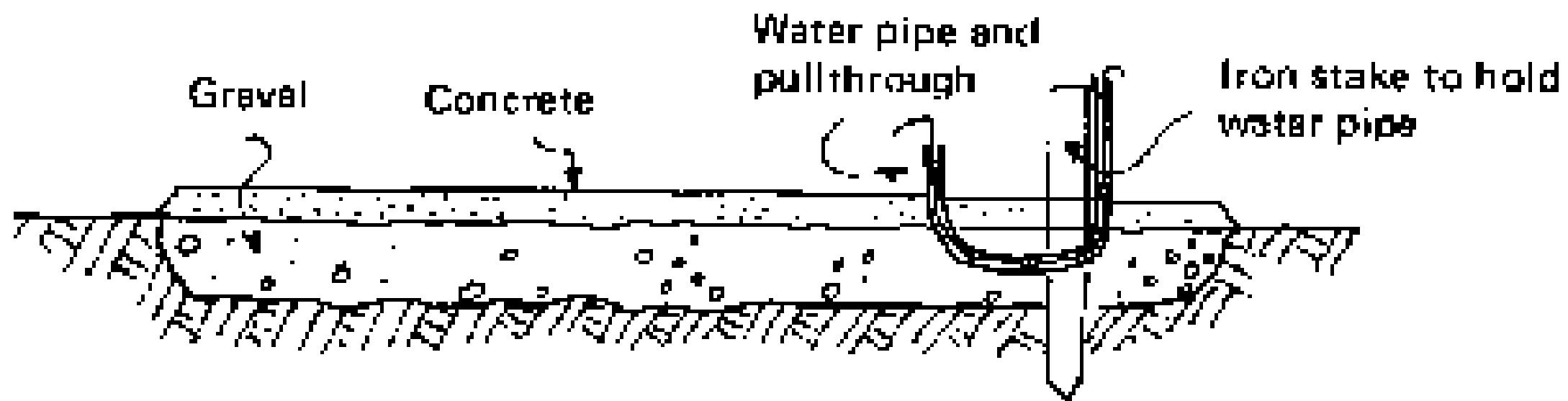


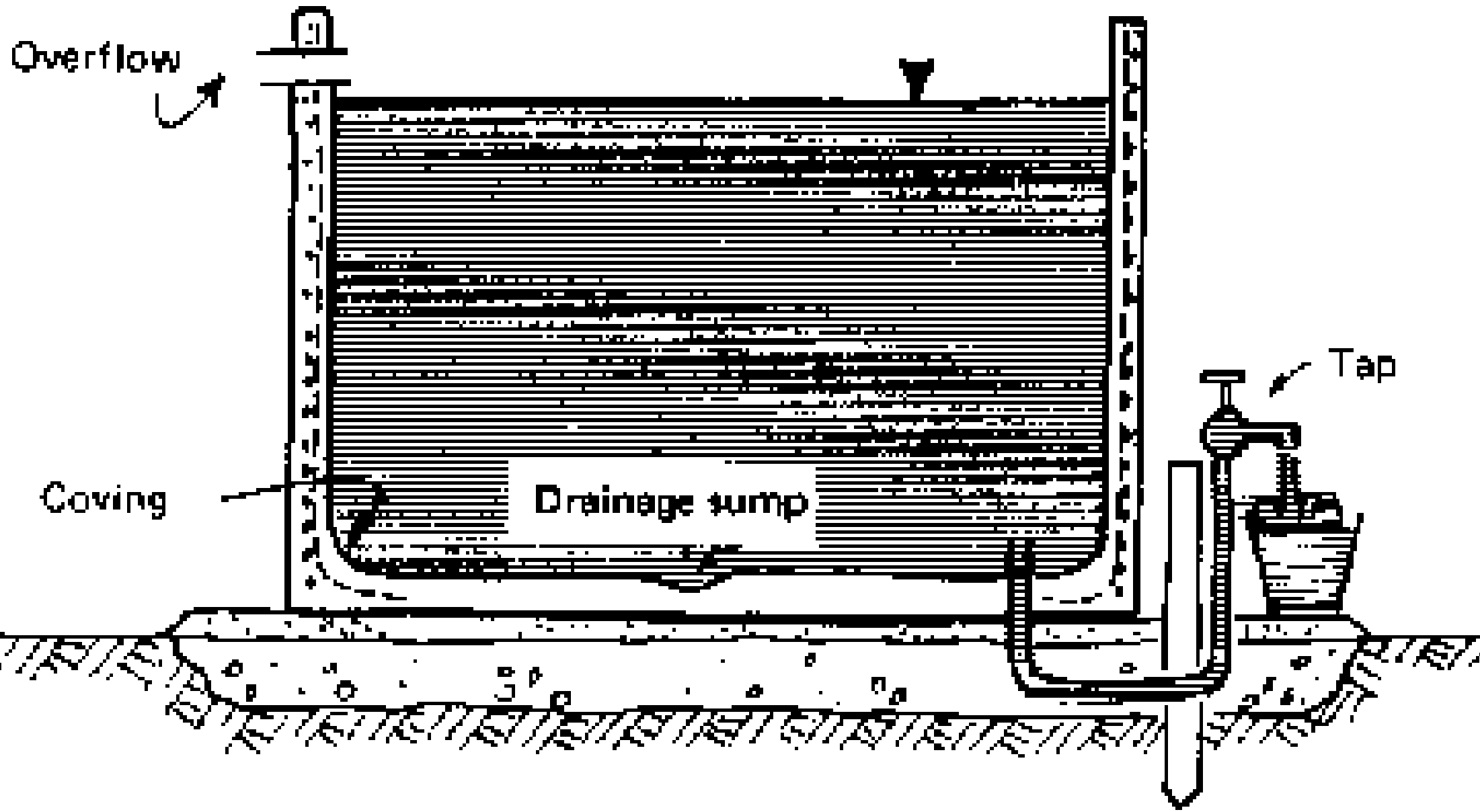
Water

**Gravel filled
bucket with holes
in the bottom**







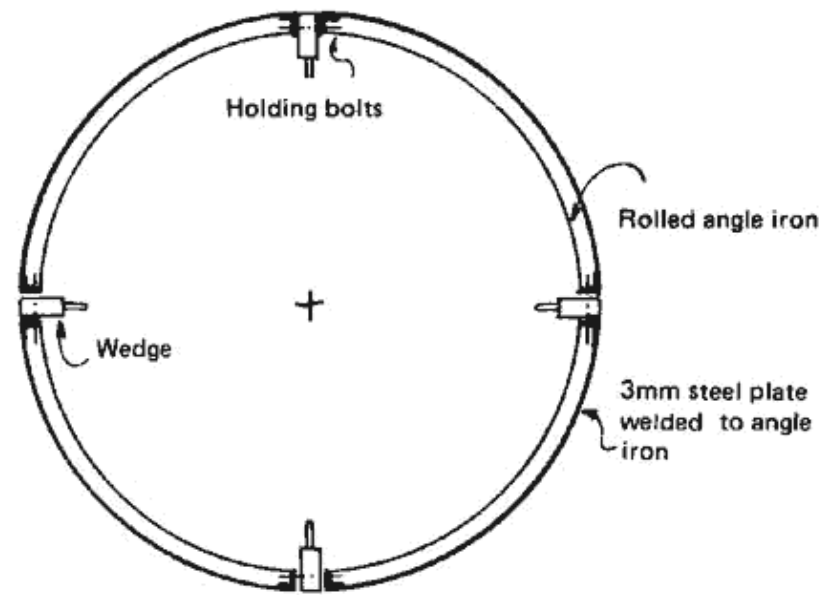


Overflow

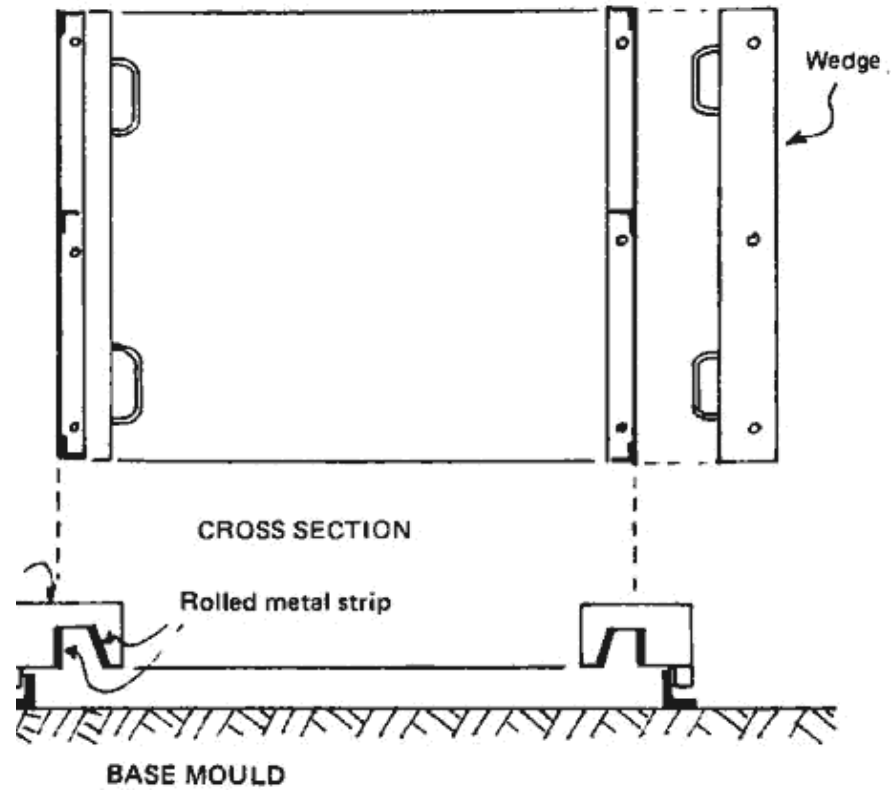
Tap

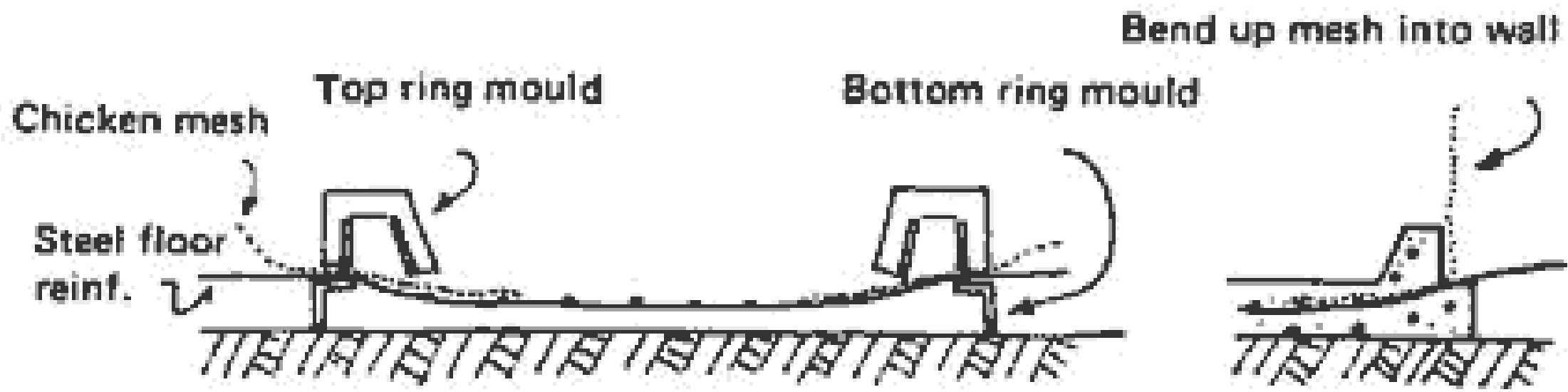
Drainage sump

Coving

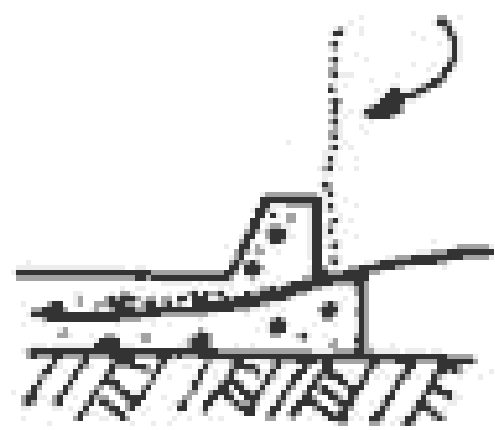


PLAN

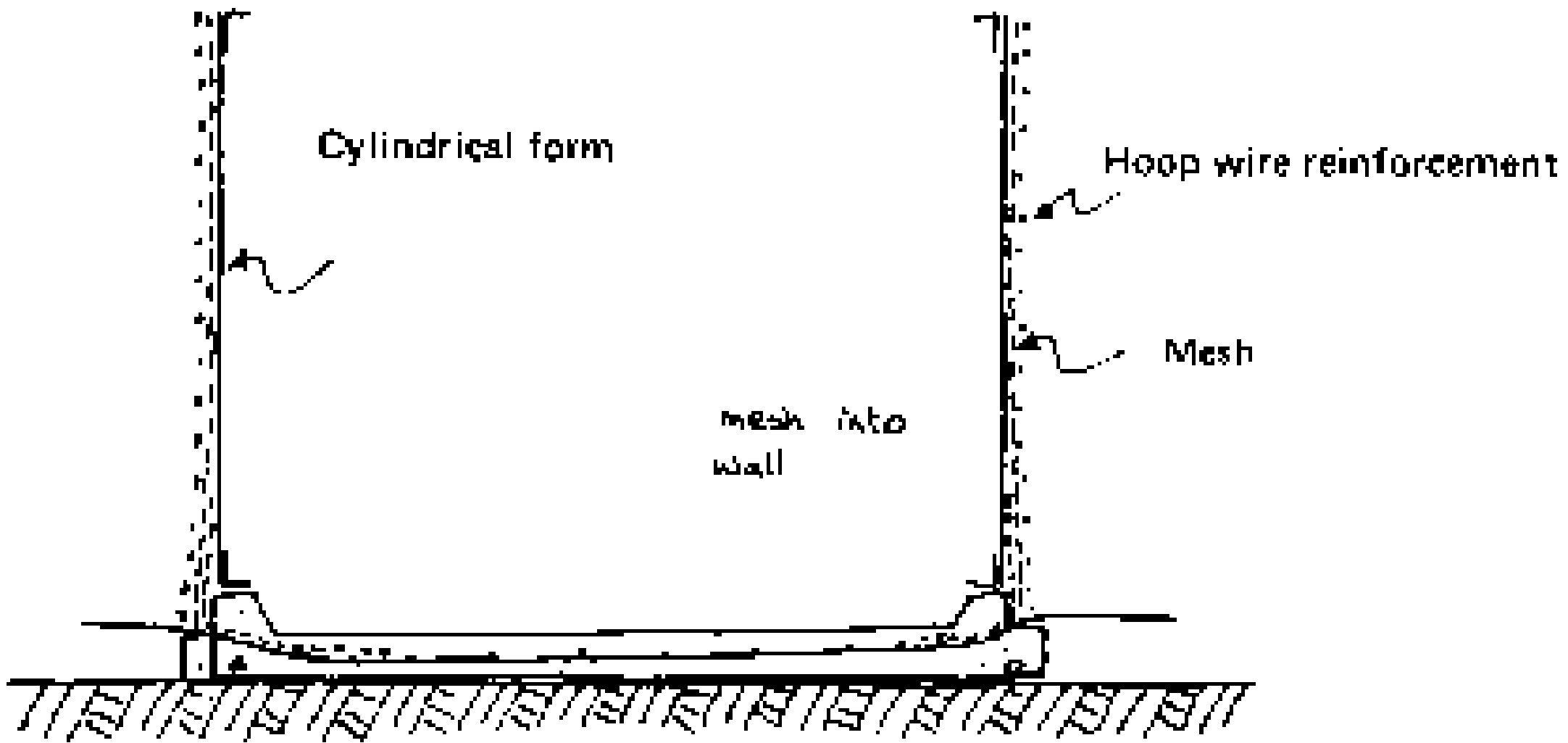




Ring moulds and reinforcement



Poured floor



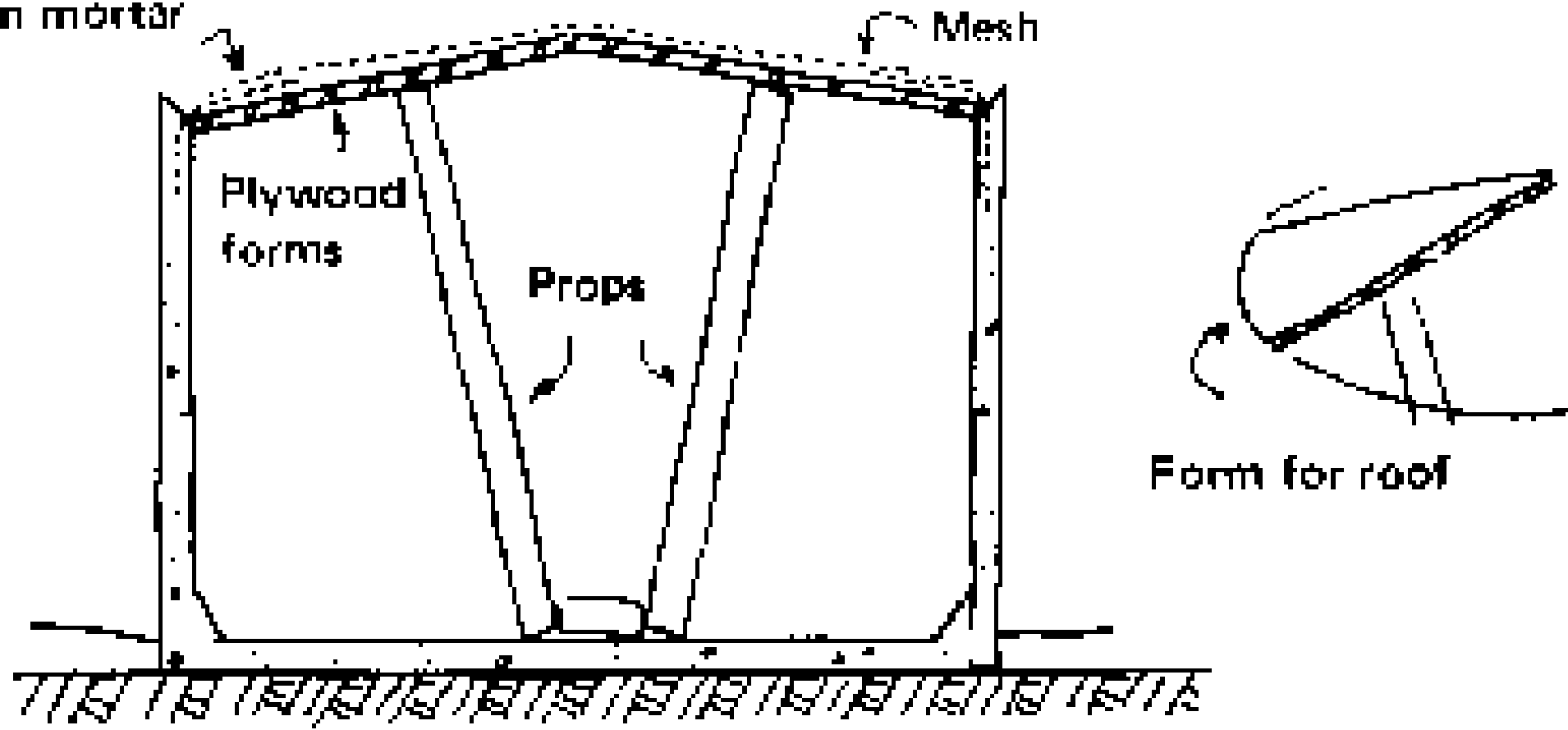
Trowel on mortar

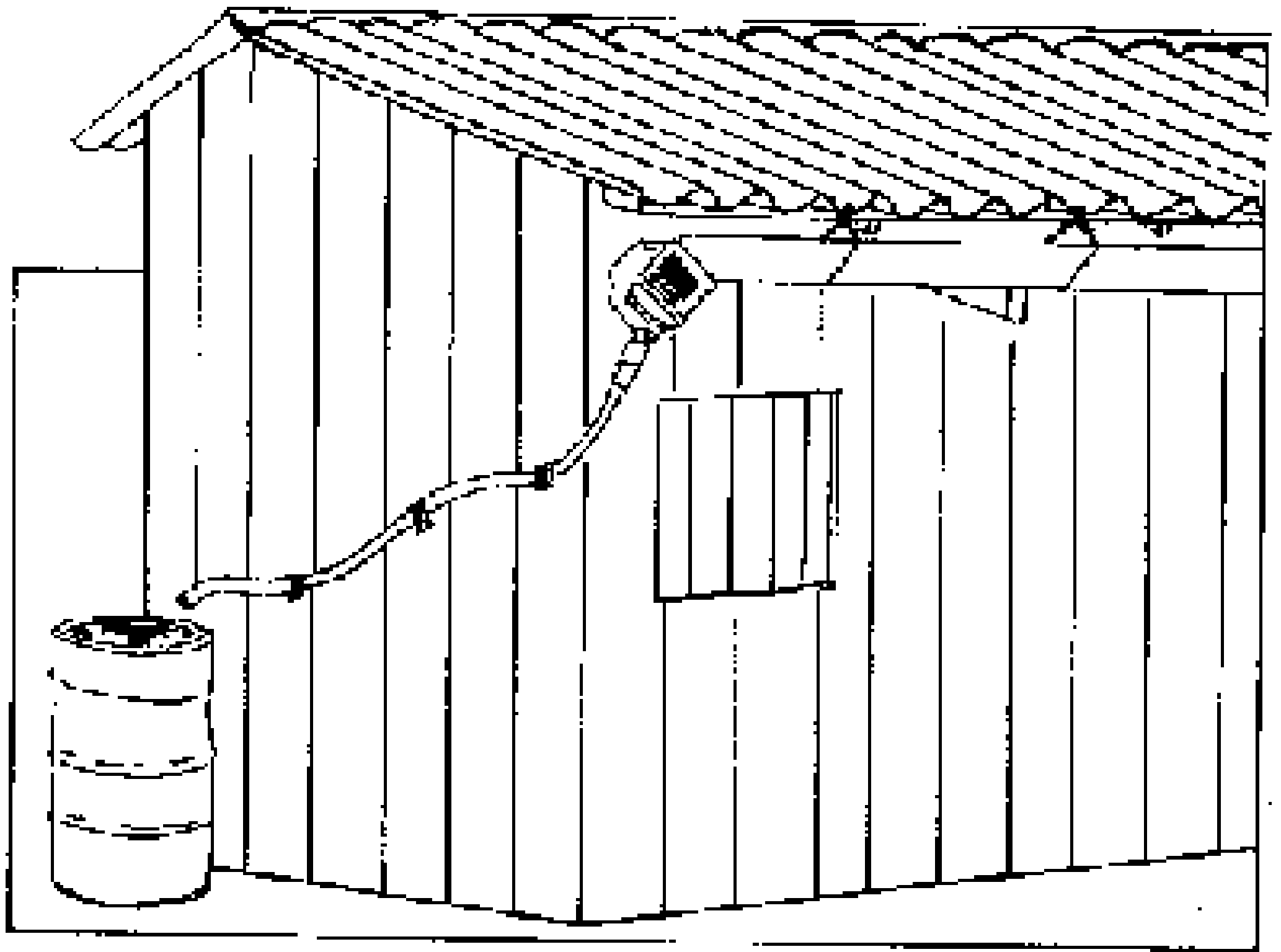
Mesh

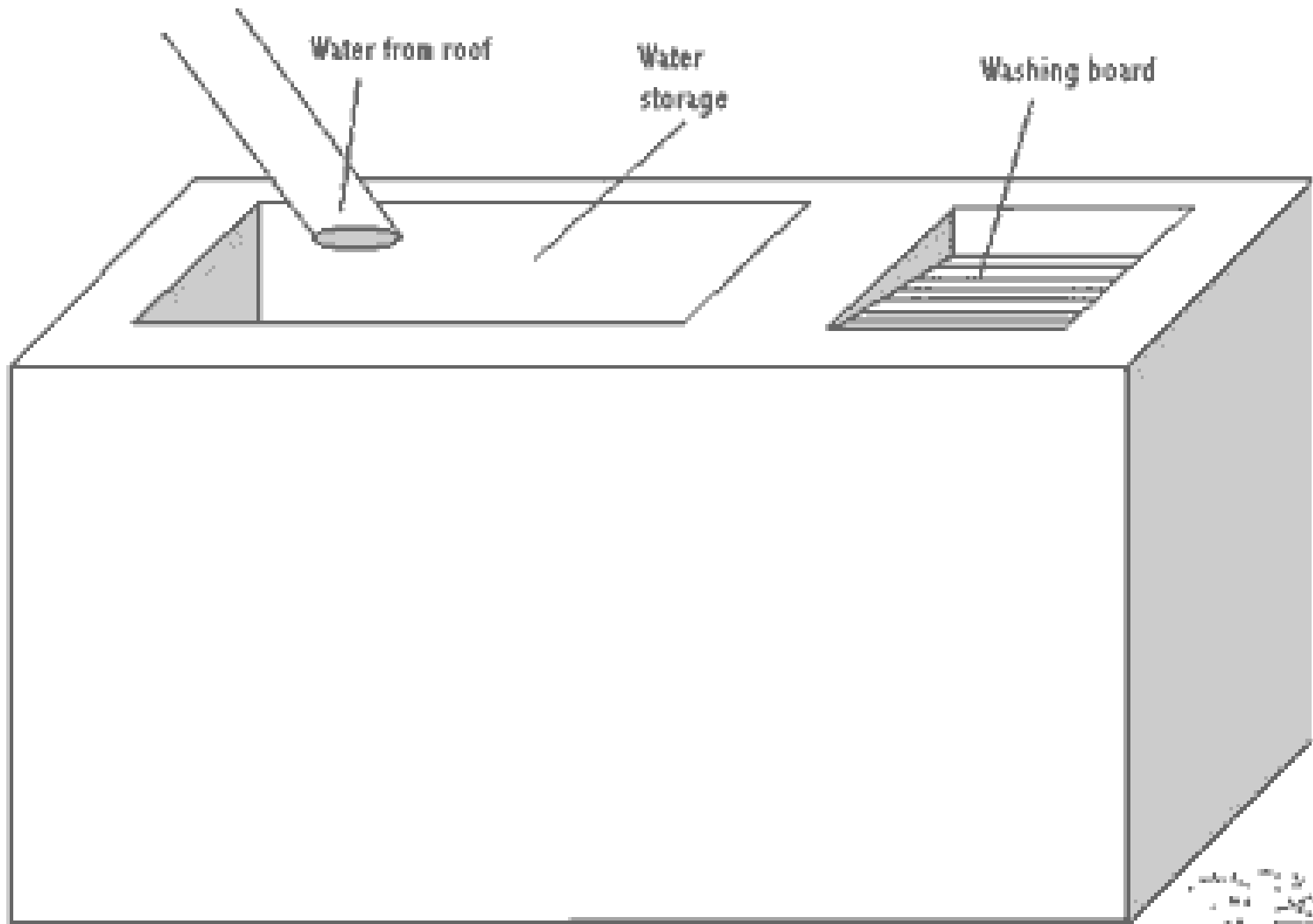
Plywood forms

Props

Form for roof

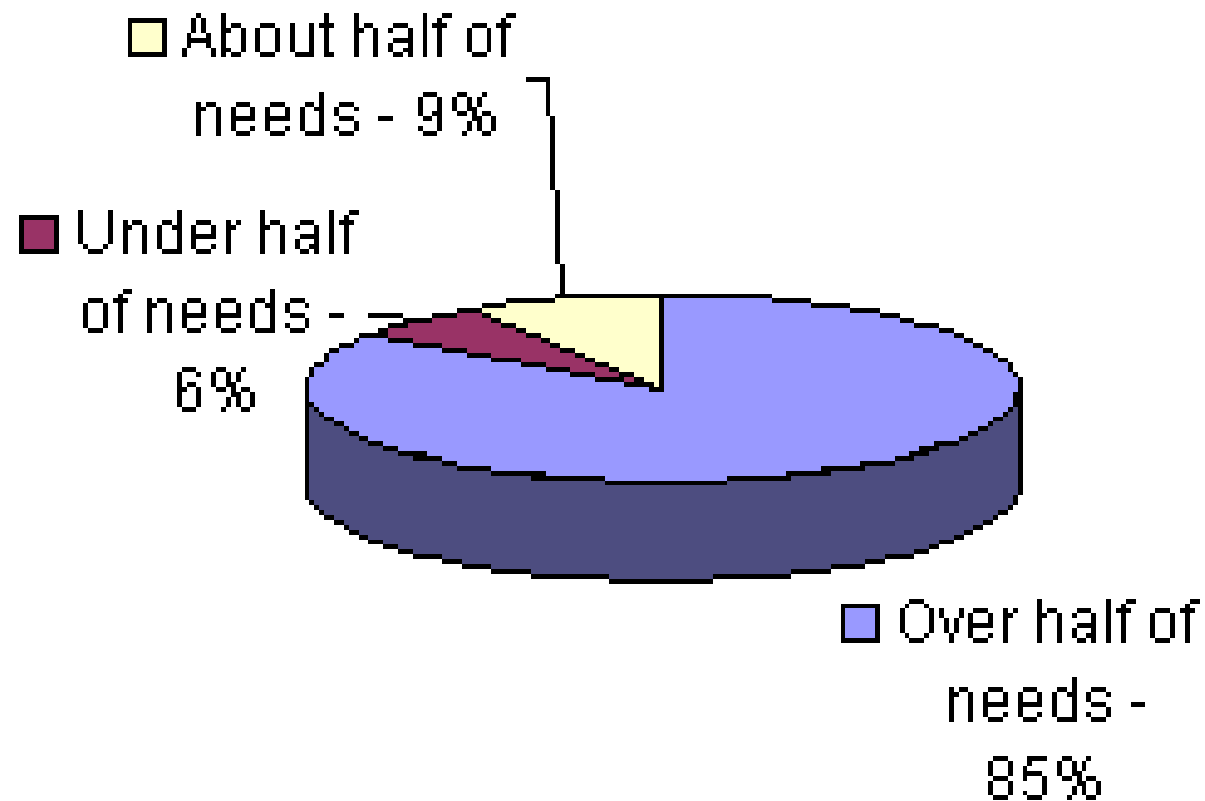




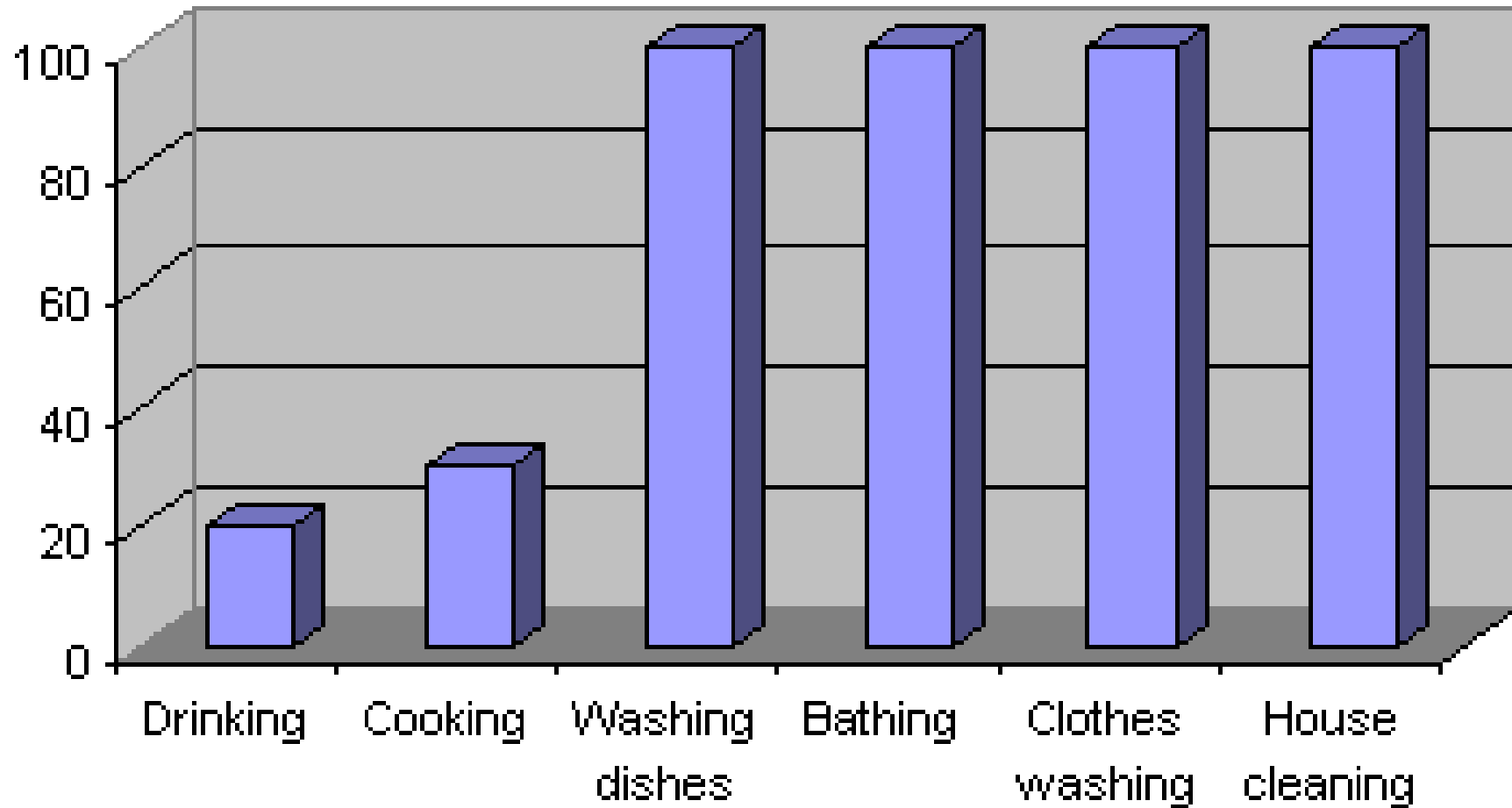


DTU

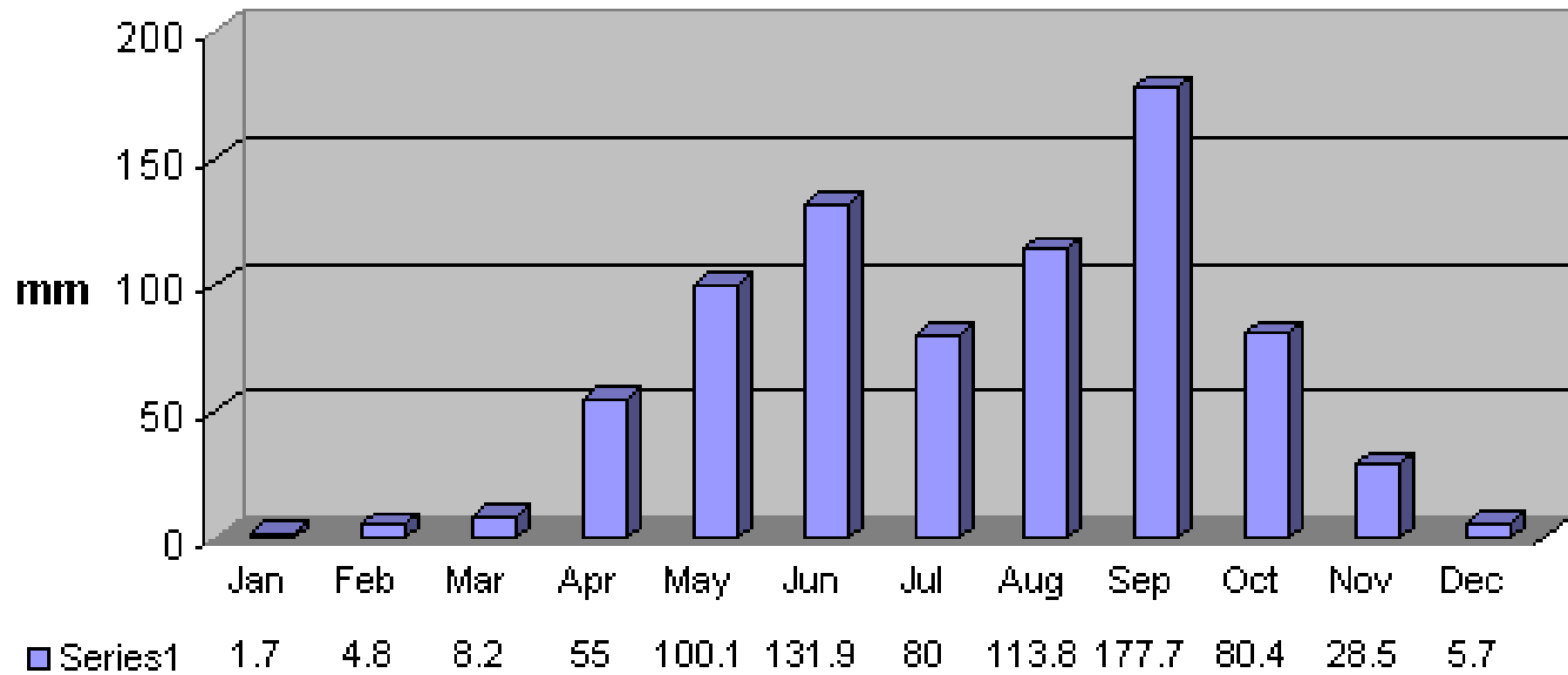
Percentage of water needs met by Rainwater in the barrio of Israel Norte

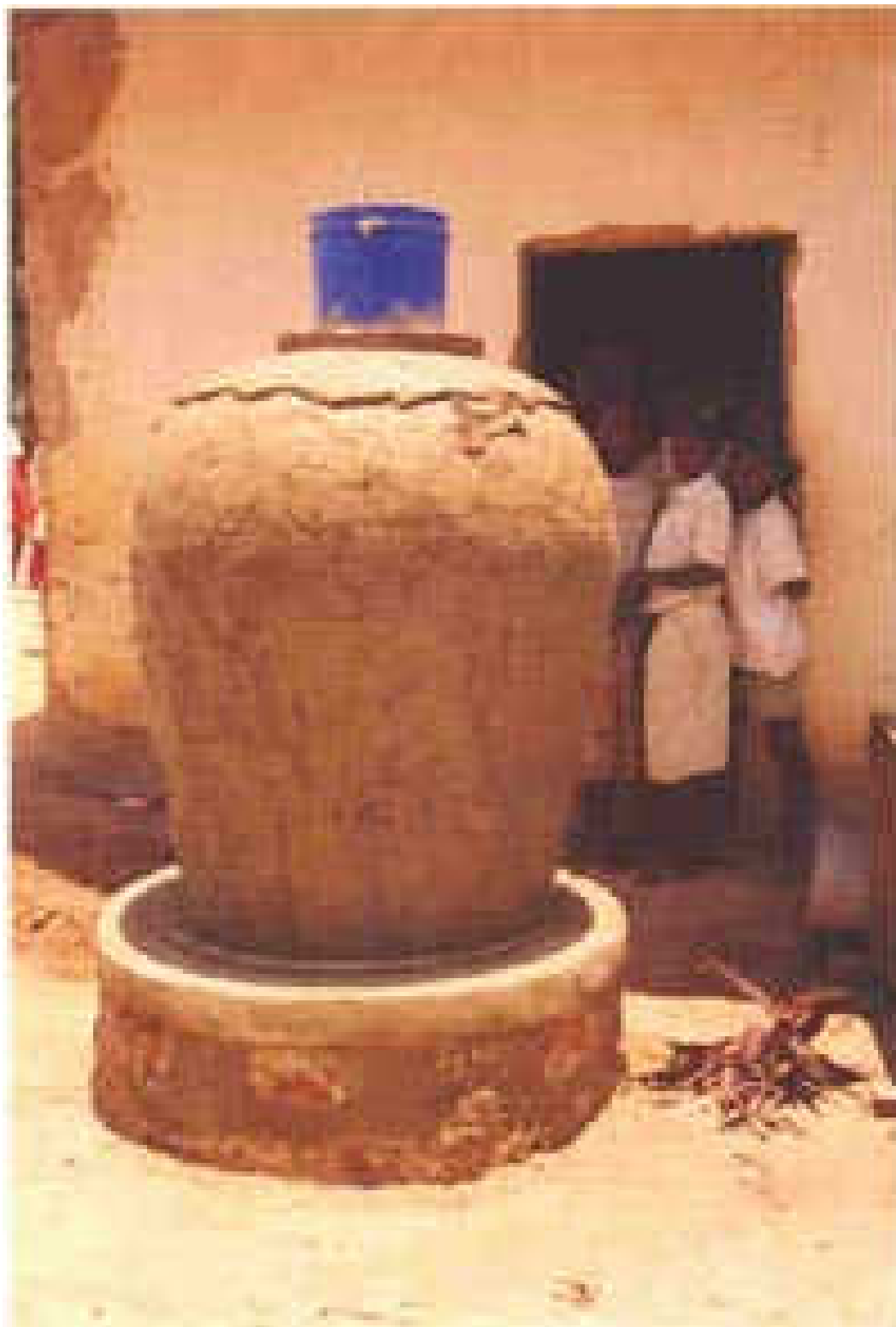


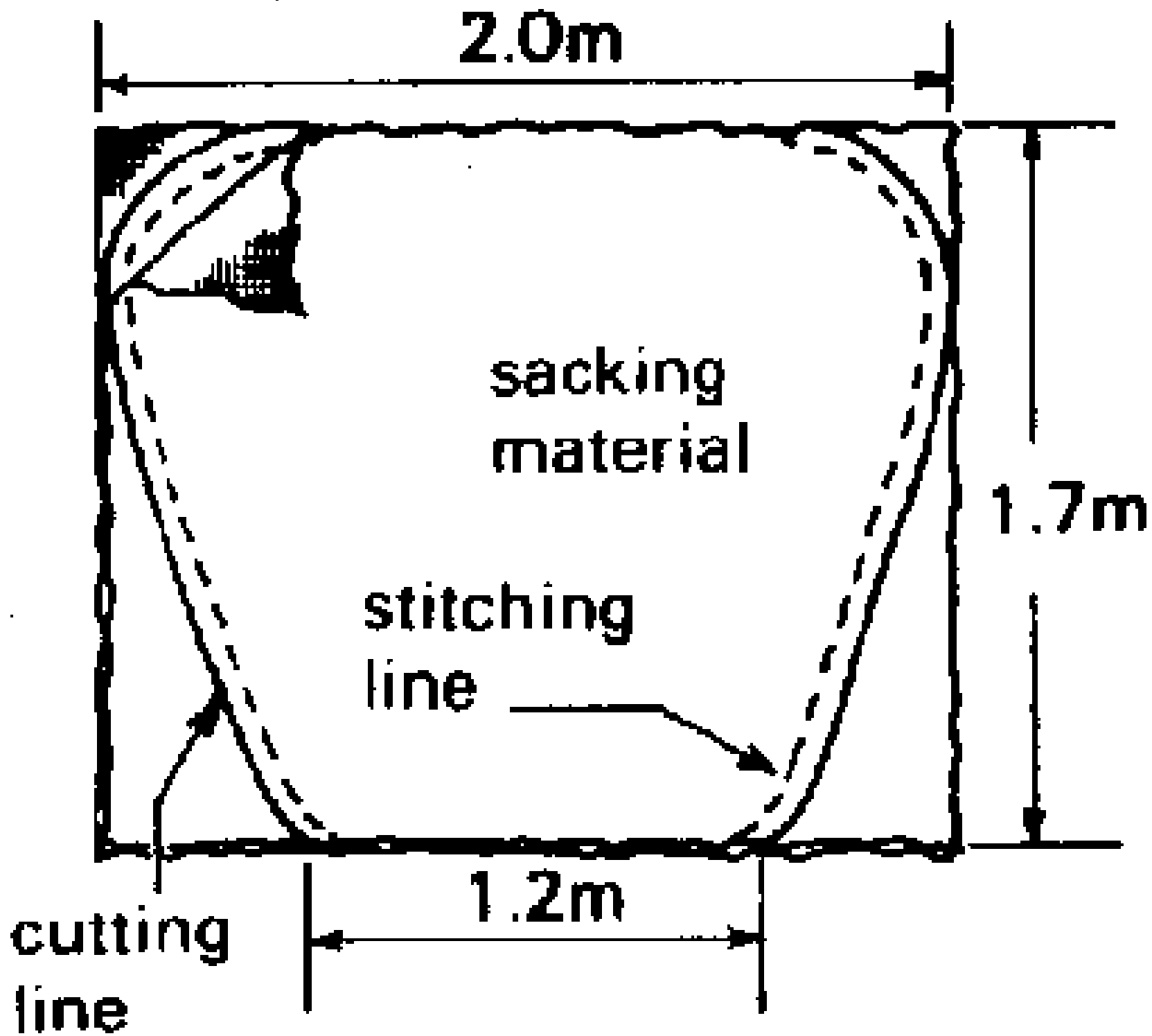
Rainwater uses in Israel Norte - %age of residents using rainwater for the following applications



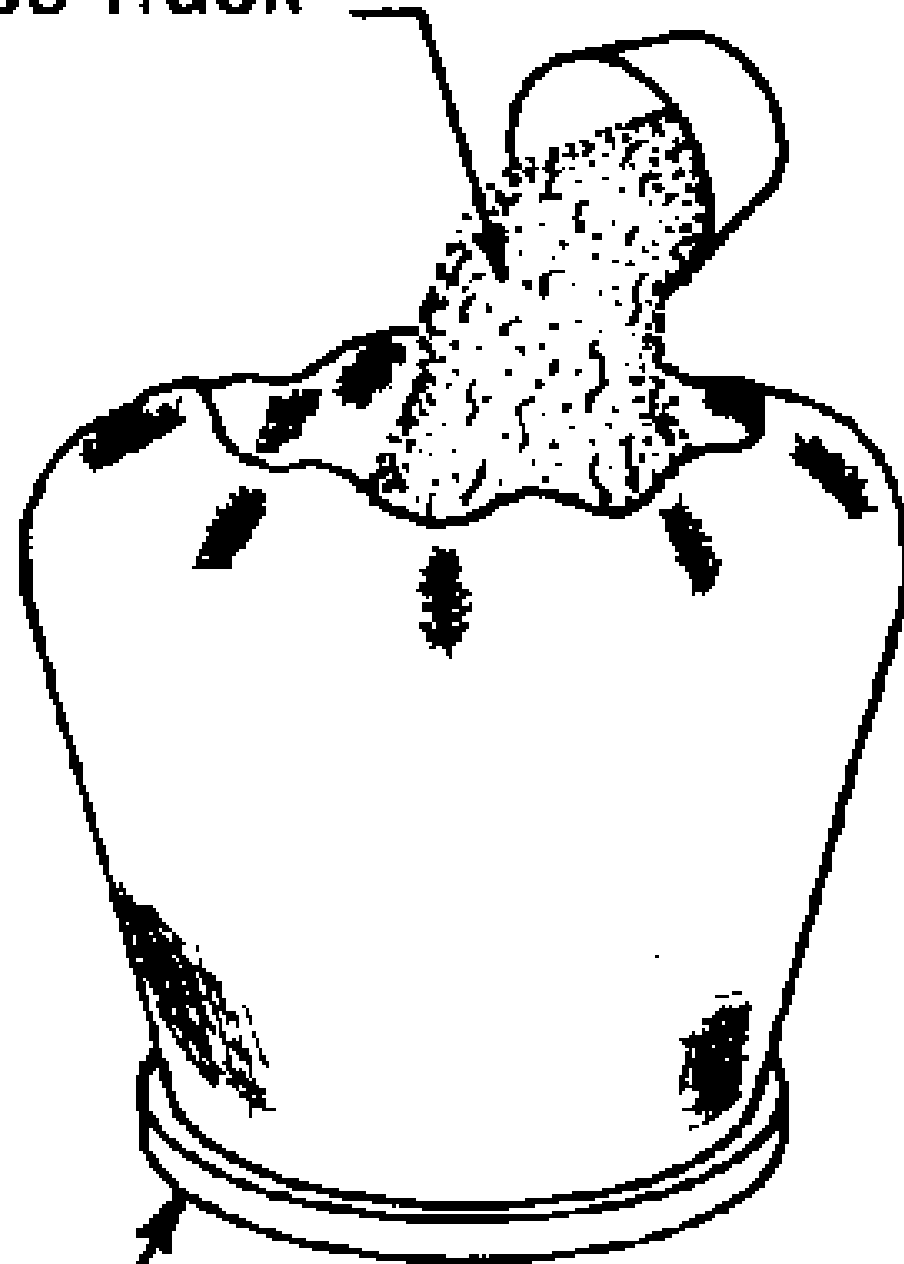
Average monthly rainfall in Tegucigalpa (1985 - 1989)



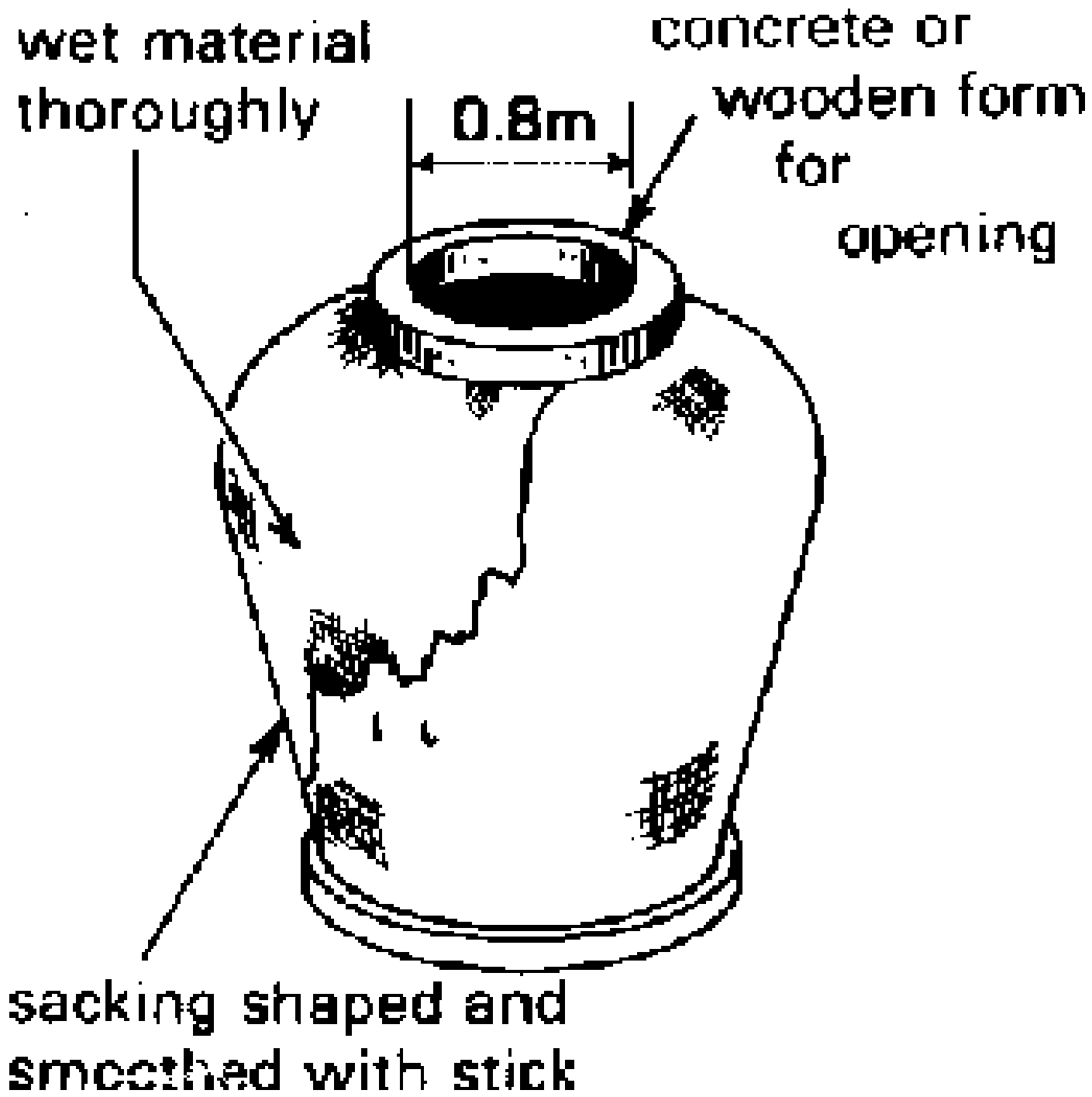


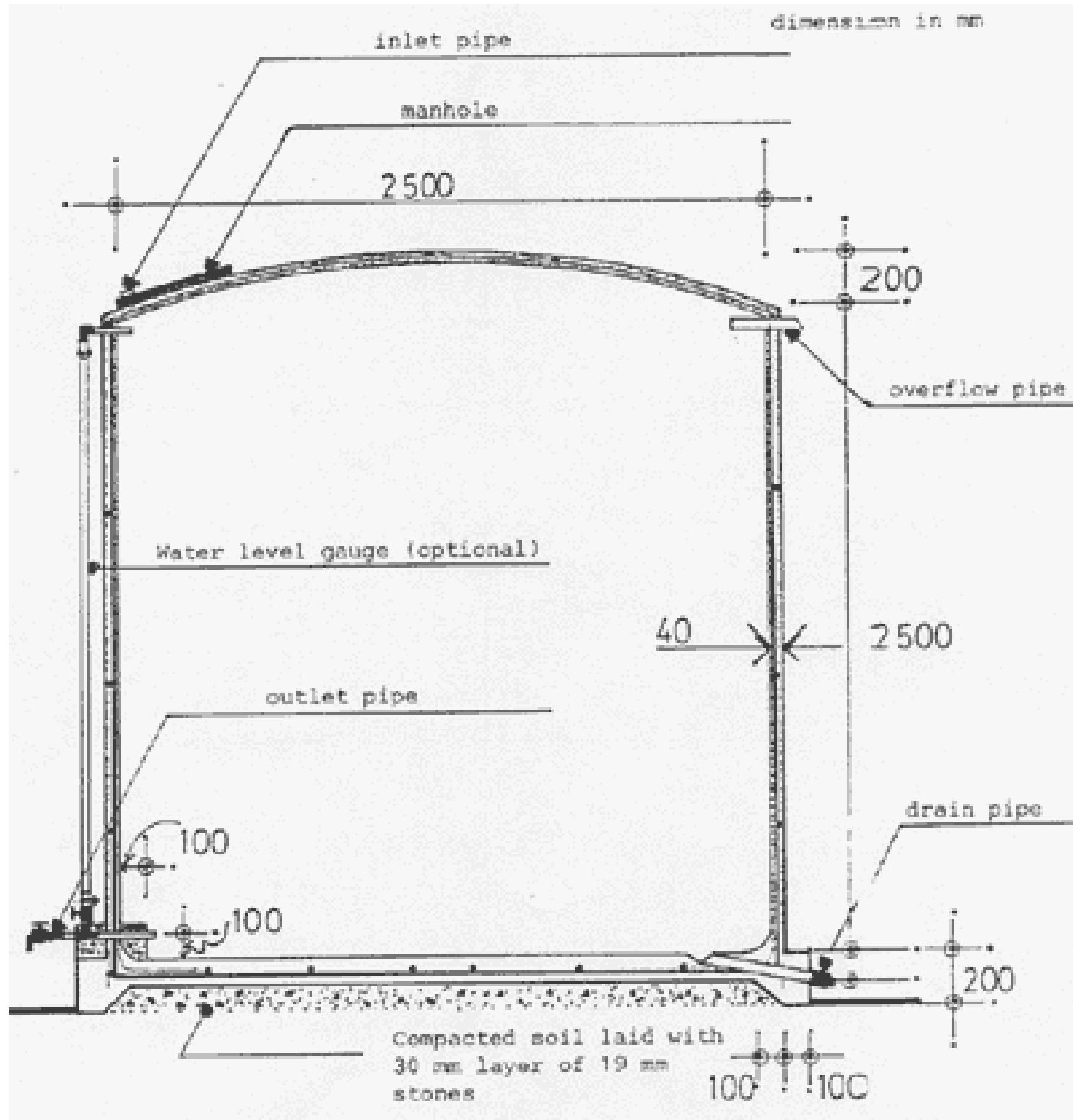


sand, sawdust
or rice husk

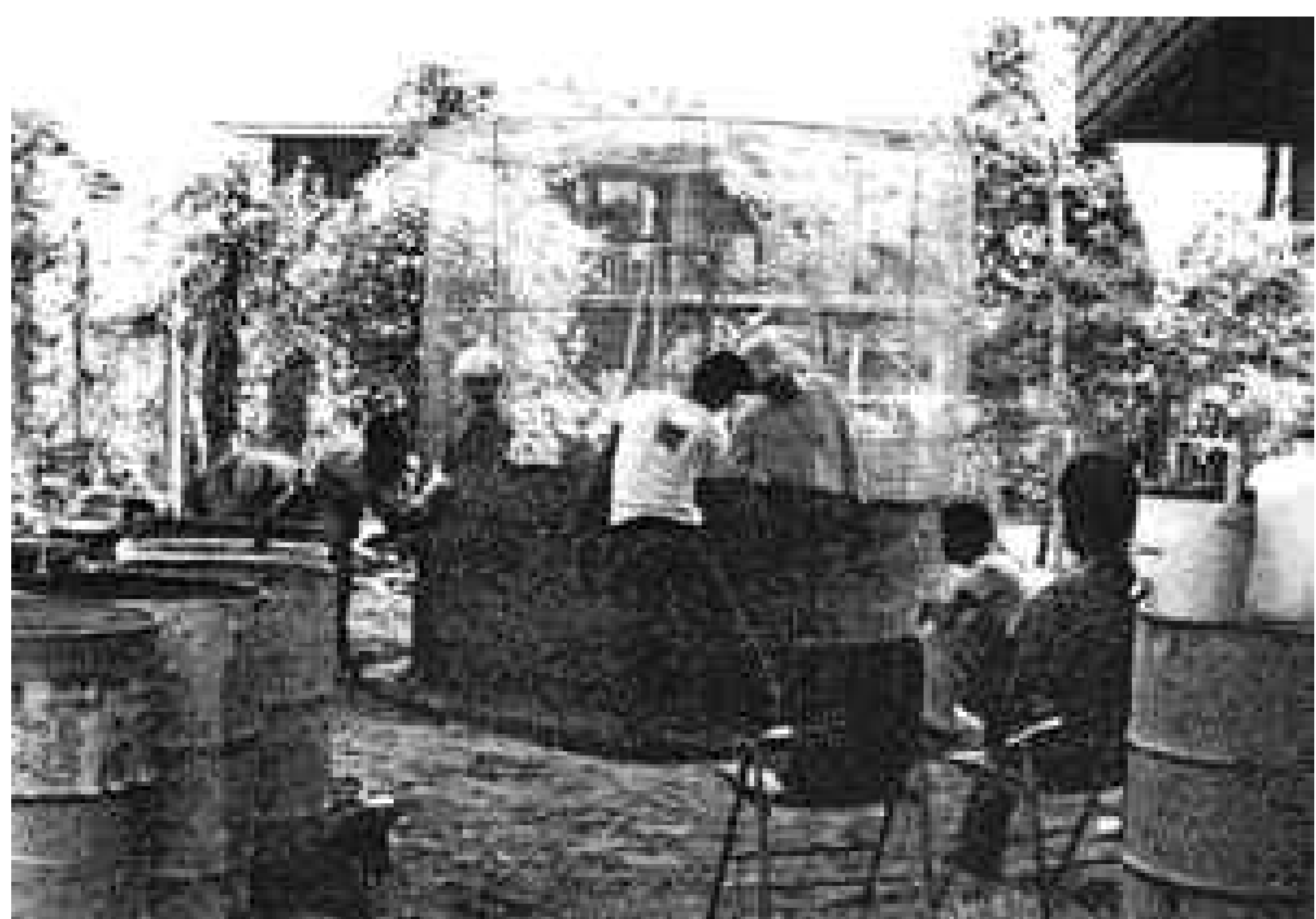


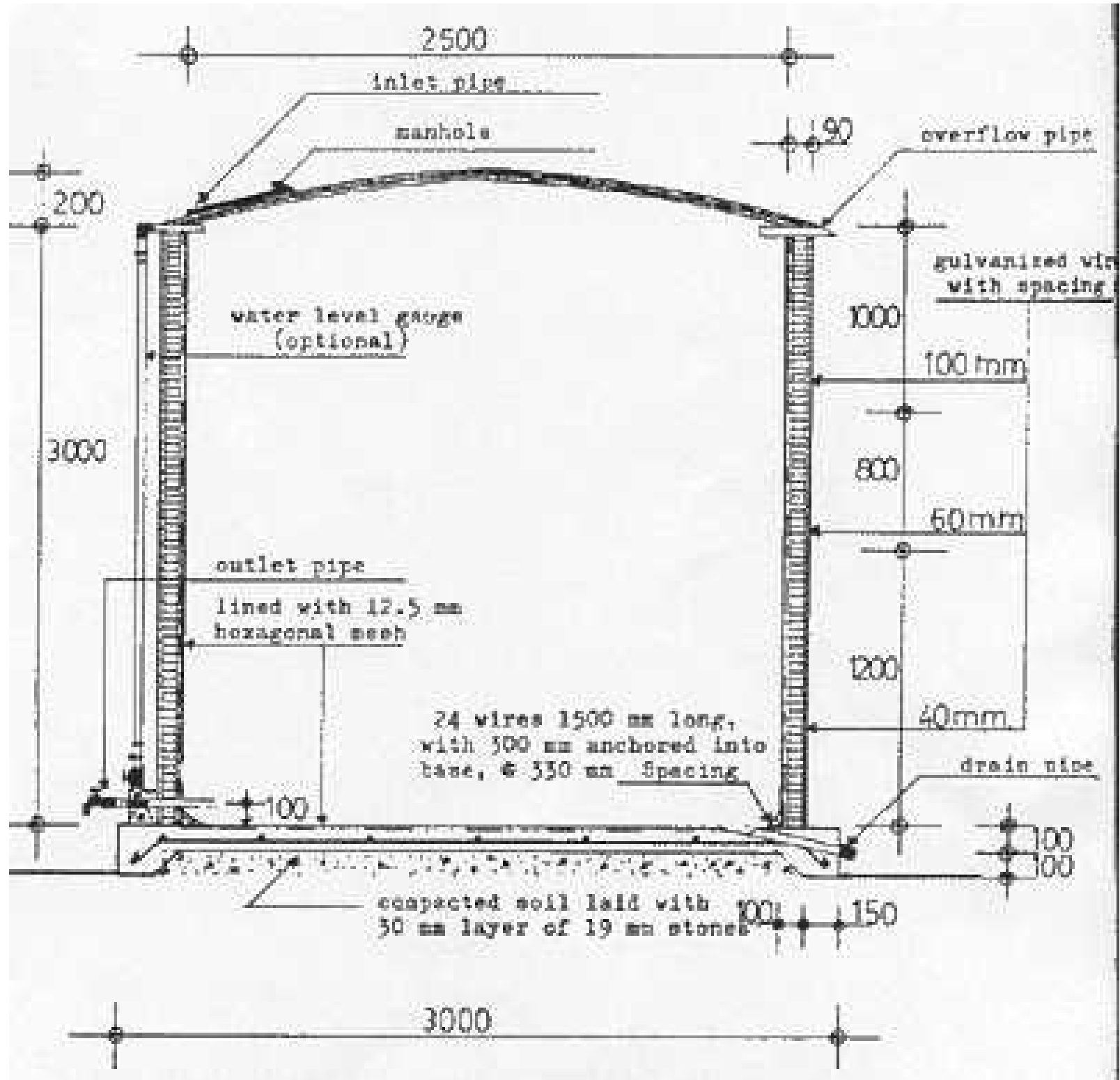
mortar
base
15mm
thick







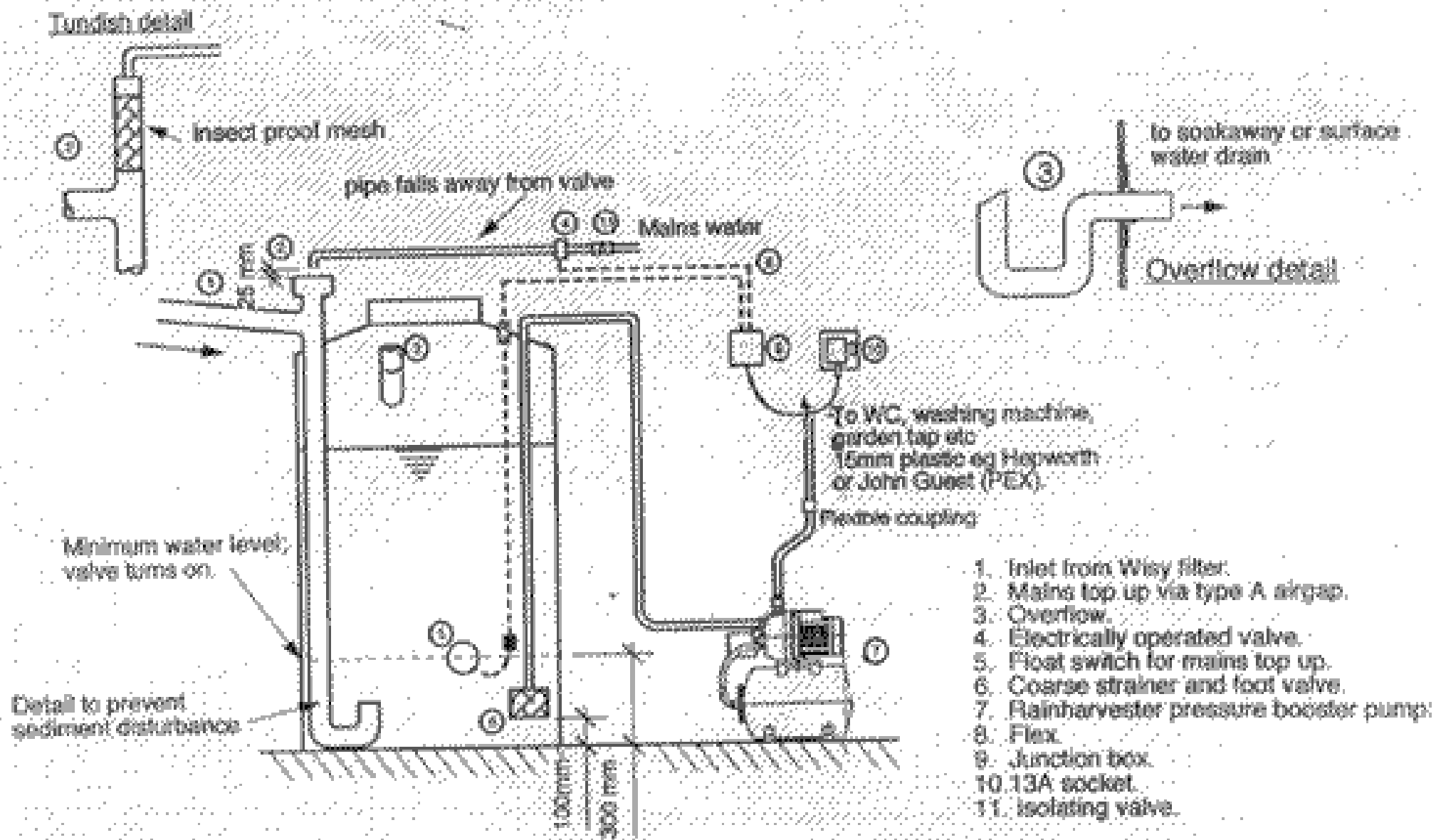






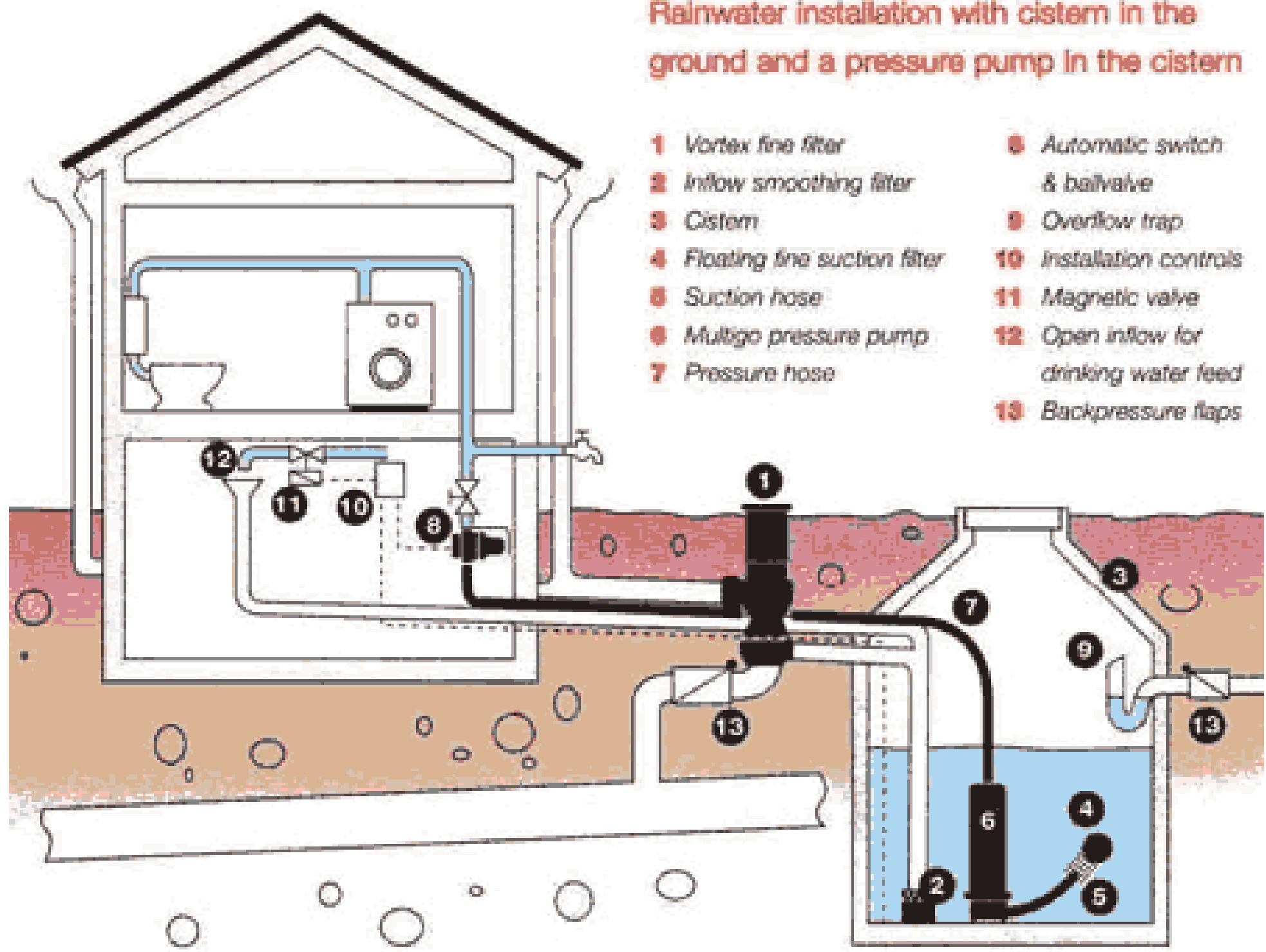




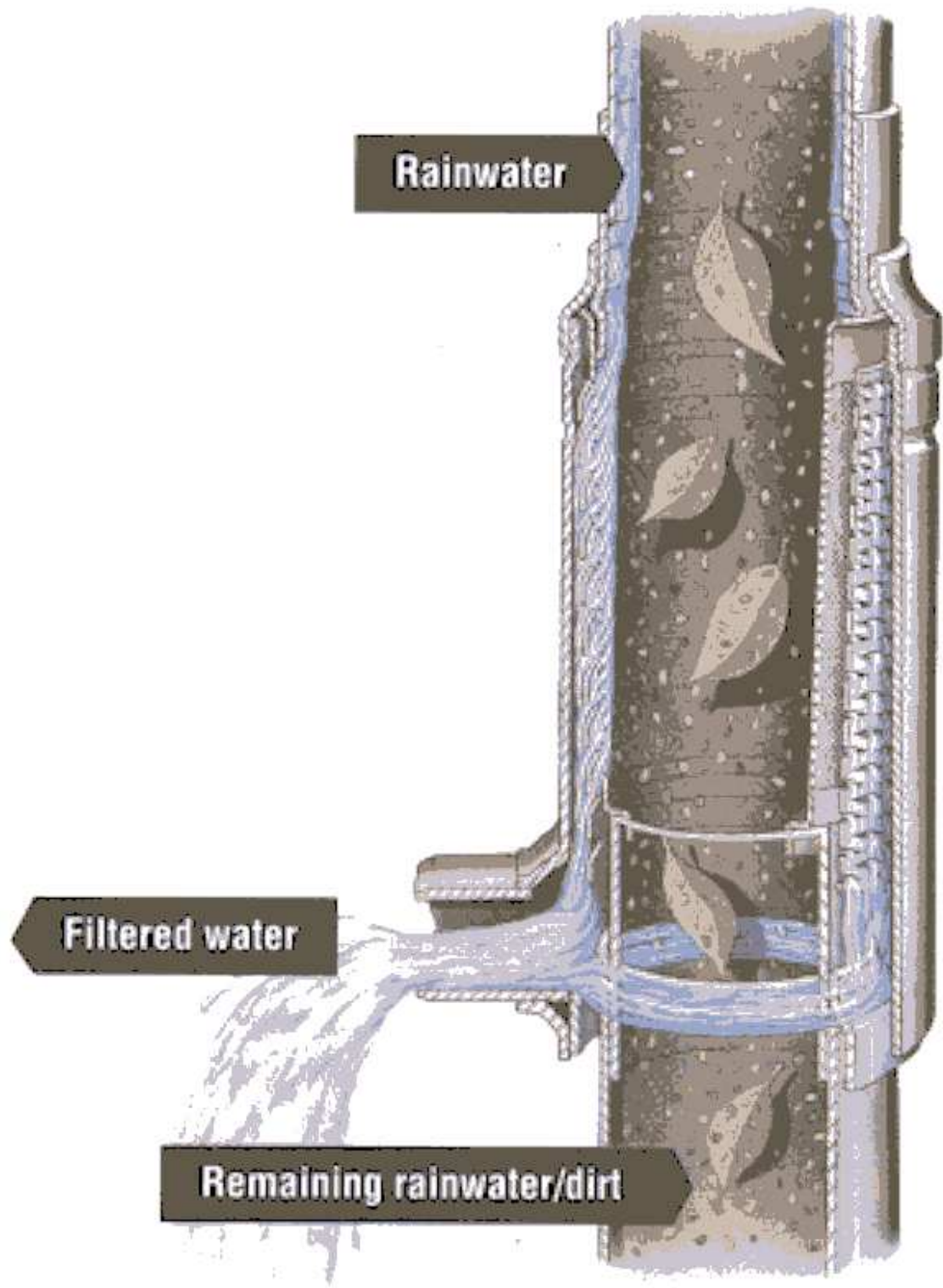


1. Inlet from Wley filter.
2. Mains top up via type A airgap.
3. Overflow.
4. Electrically operated valve.
5. Float switch for mains top up.
6. Coarse strainer and foot valve.
7. Rainharvester pressure booster pump.
8. Flex.
9. Junction box.
10. 13A socket.
11. Isolating valve.

Rainwater installation with cistern in the ground and a pressure pump in the cistern



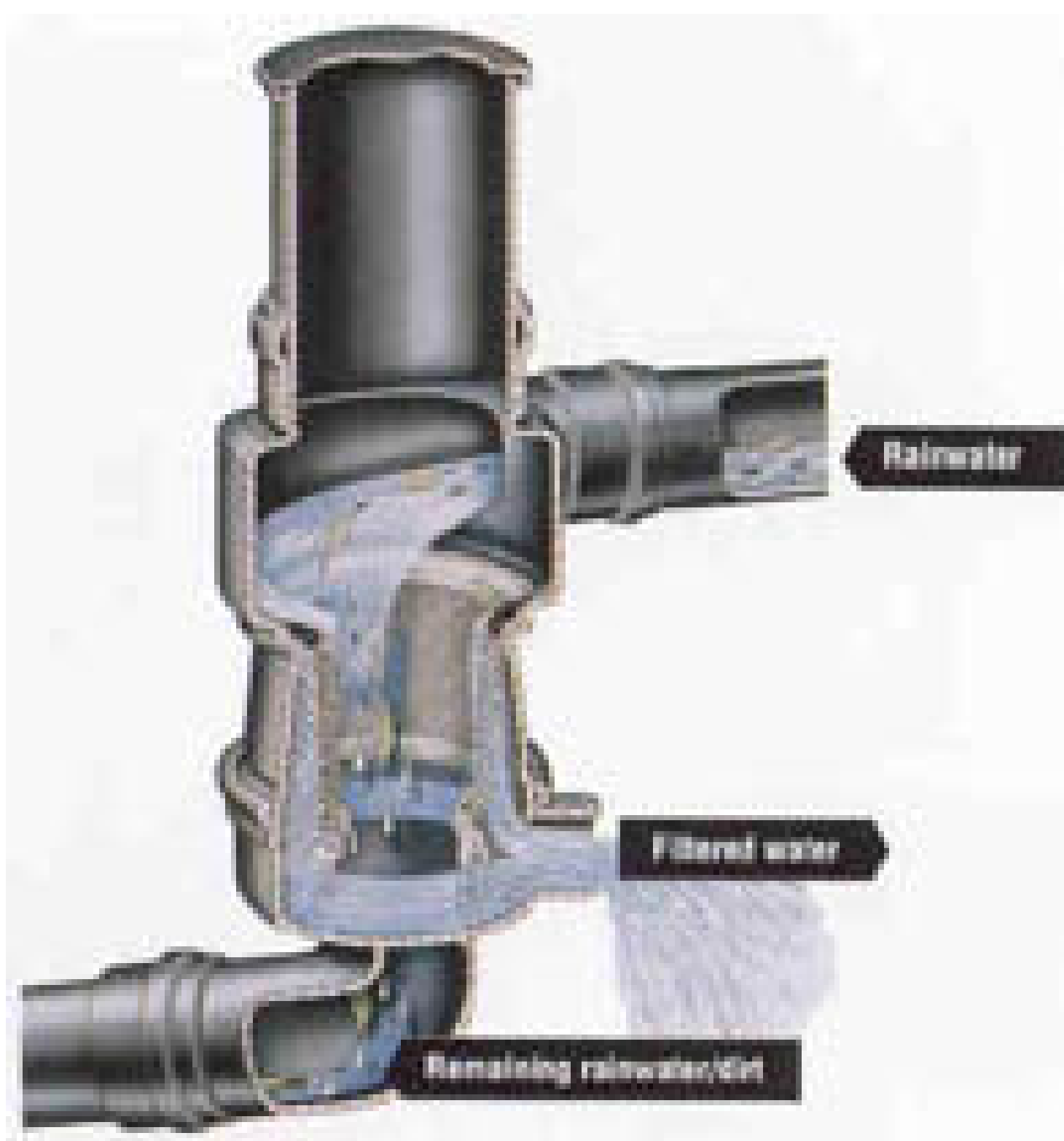
- 1 Vortex fine filter
- 2 Inflow smoothing filter
- 3 Cistern
- 4 Floating fine suction filter
- 5 Suction hose
- 6 Multigo pressure pump
- 7 Pressure hose
- 8 Automatic switch & ball valve
- 9 Overflow trap
- 10 Installation controls
- 11 Magnetic valve
- 12 Open inflow for drinking water feed
- 13 Backpressure flaps



Rainwater

Filtered water

Remaining rainwater/dirt



















































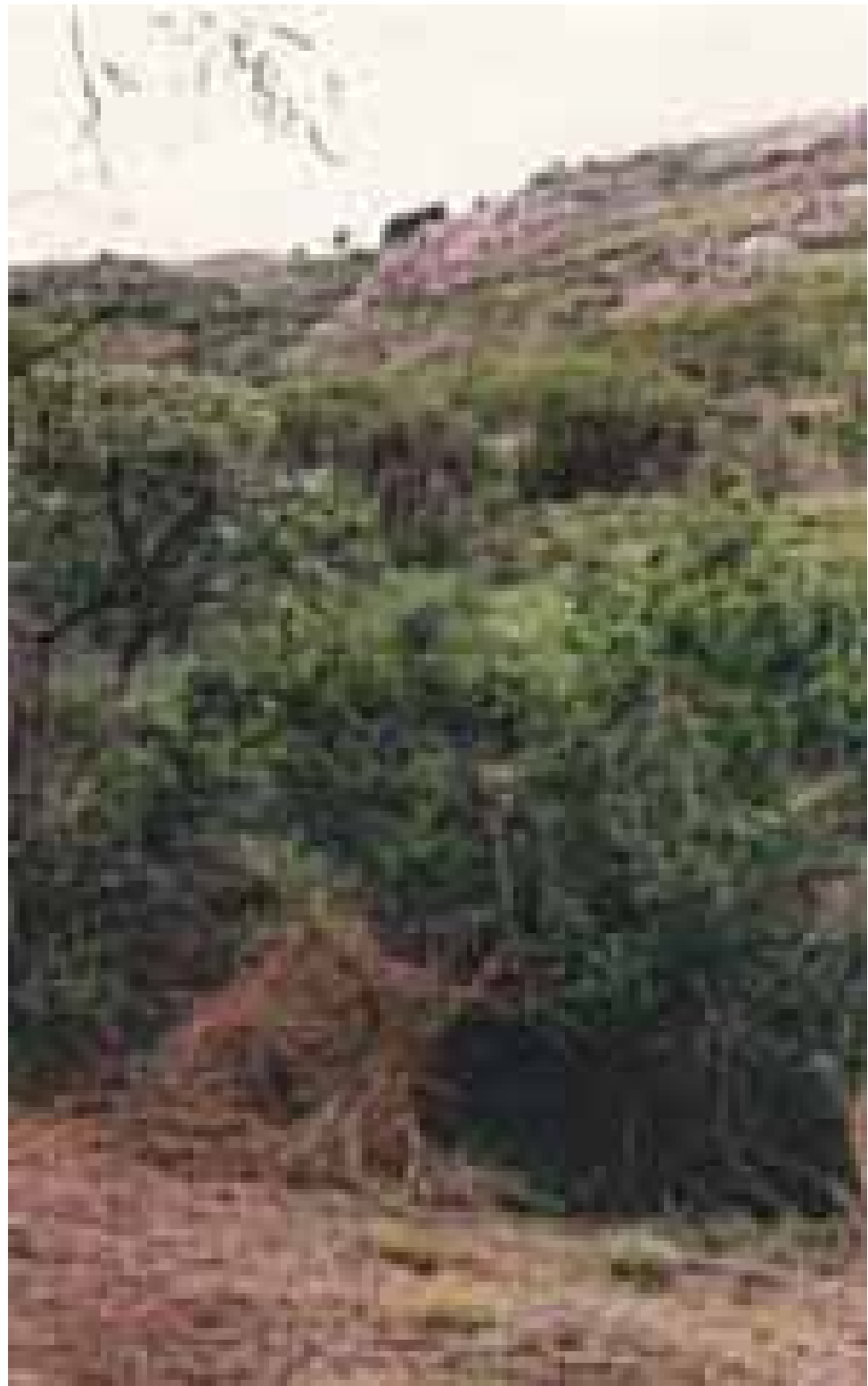






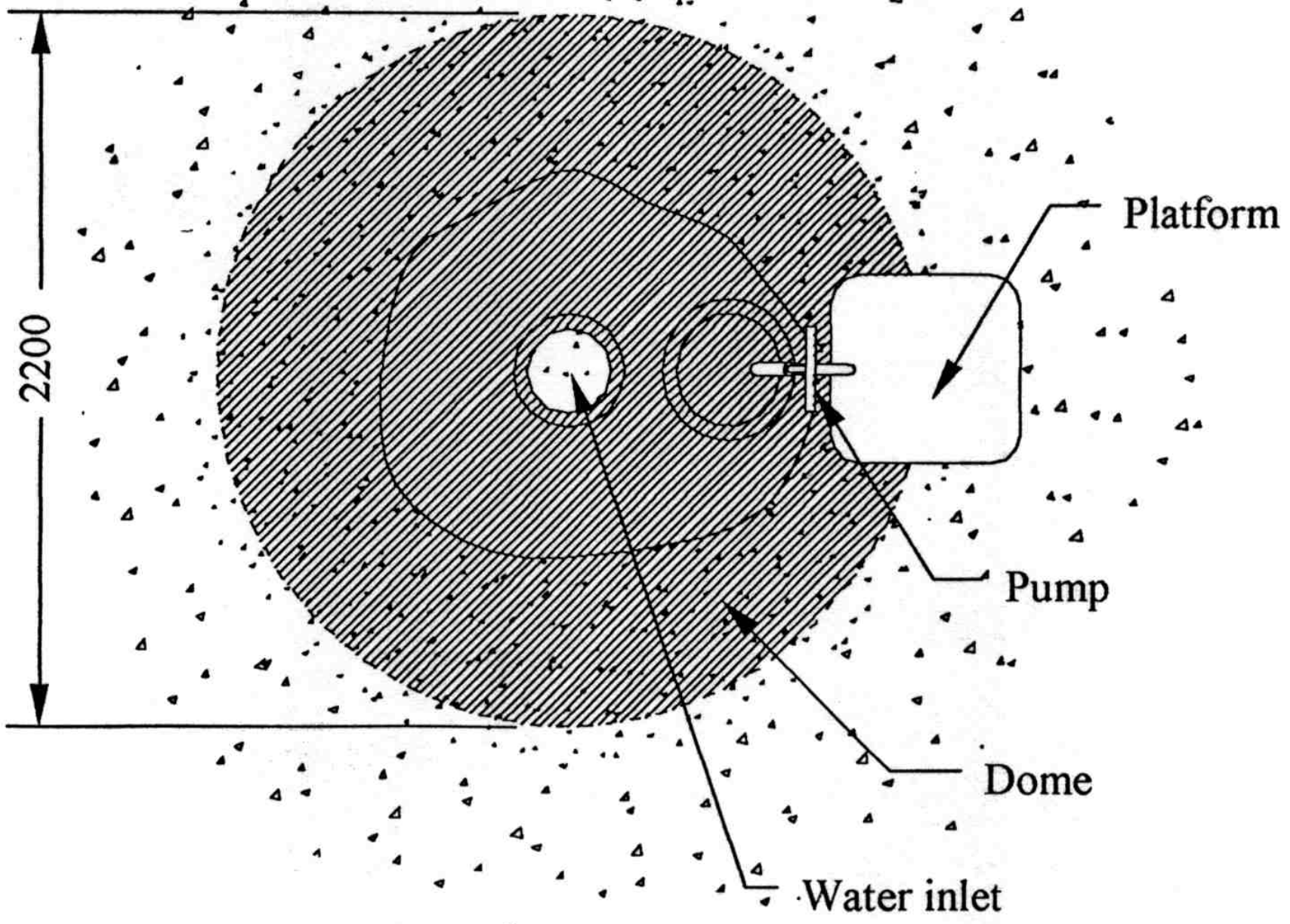


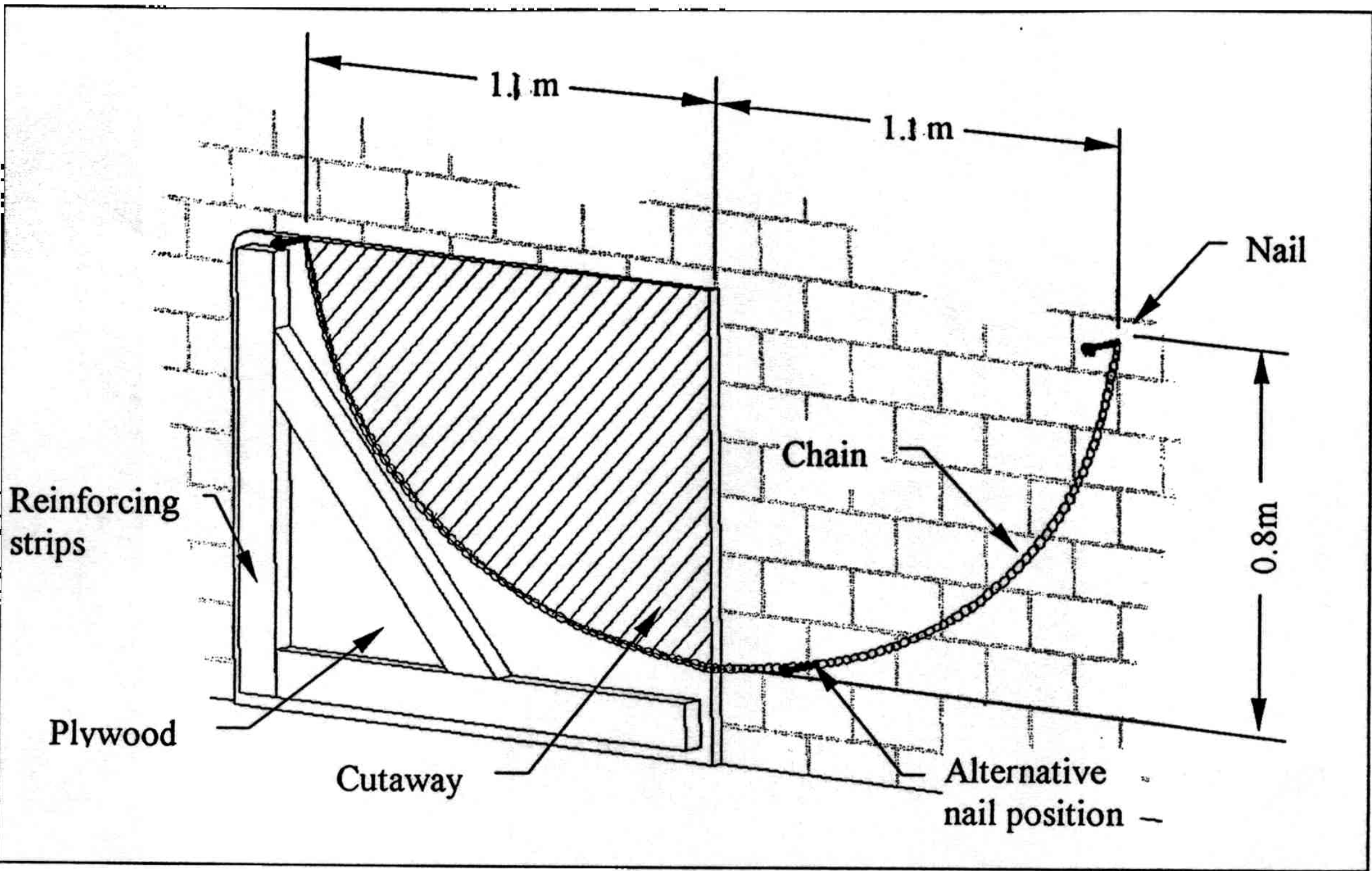


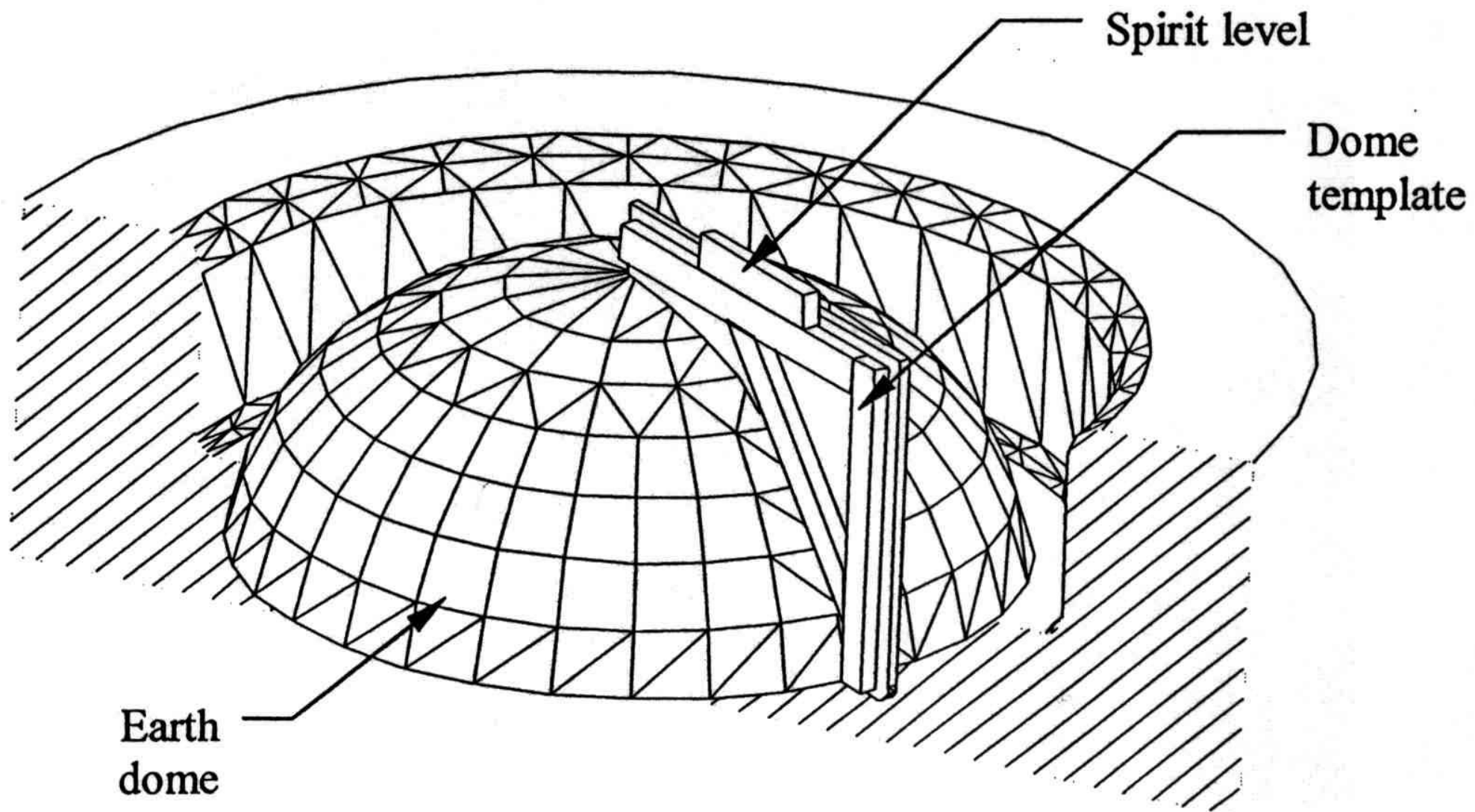








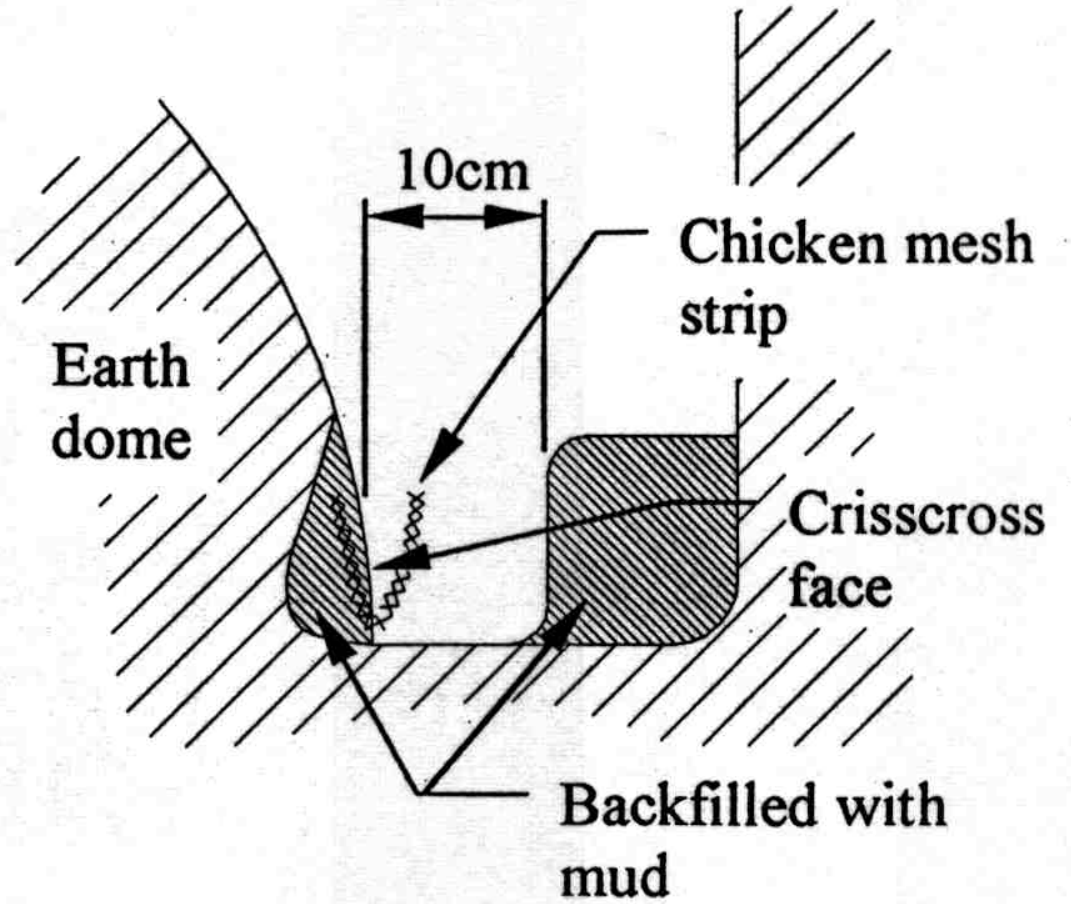
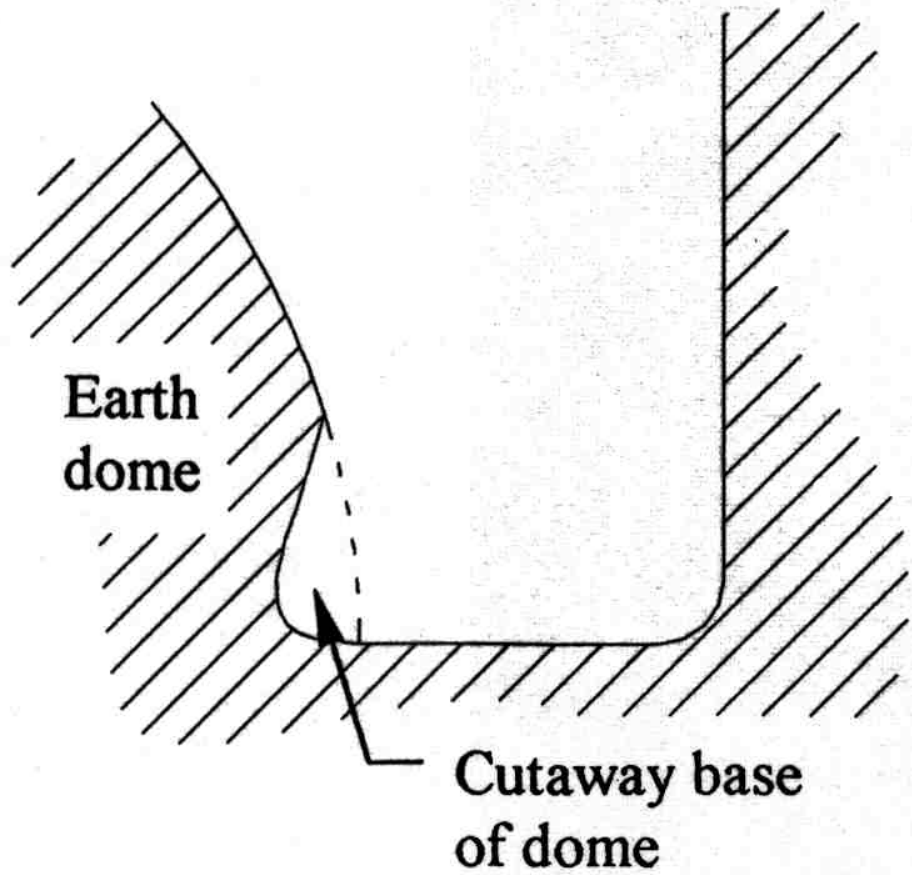


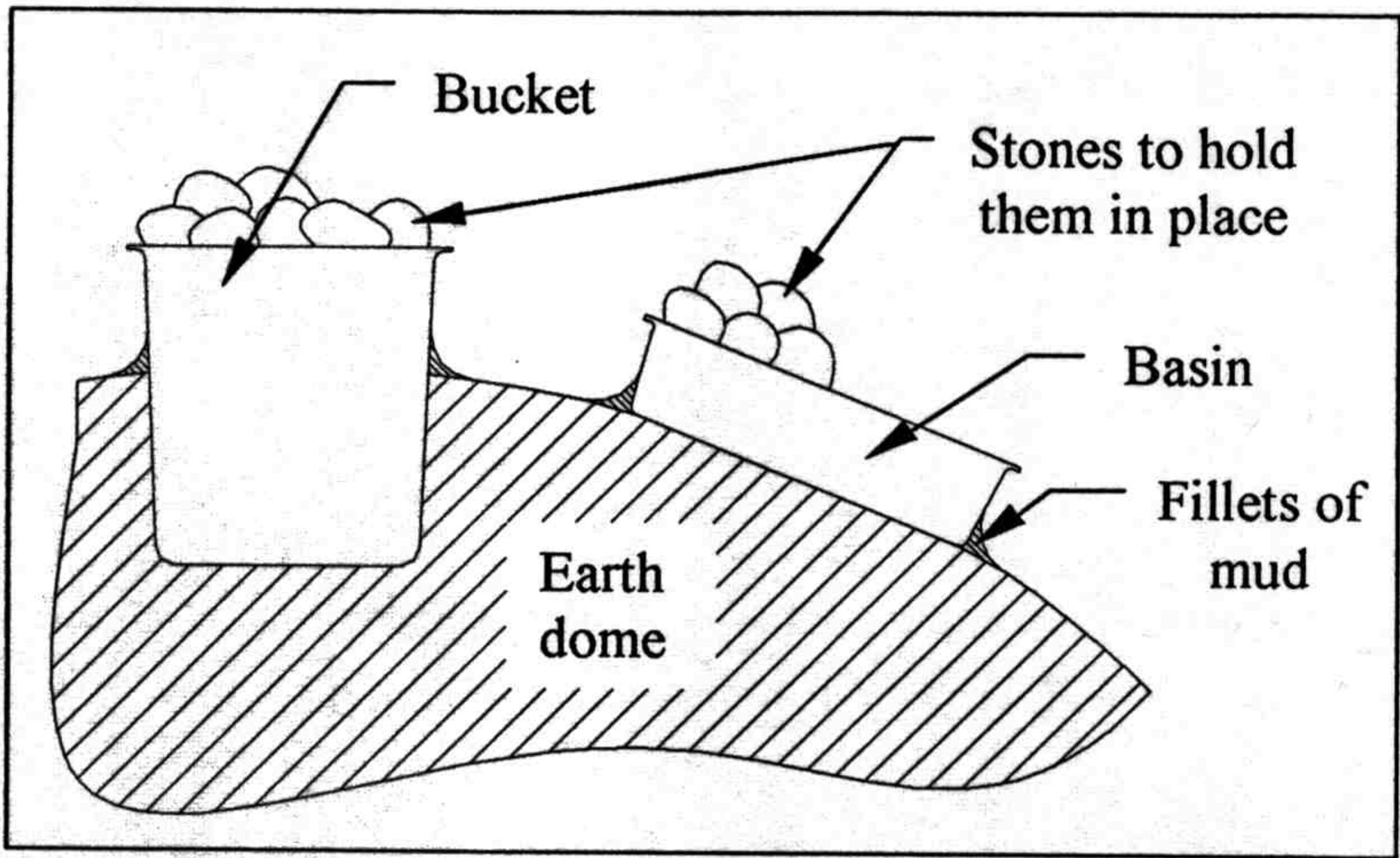


Spirit level

Dome
template

Earth
dome





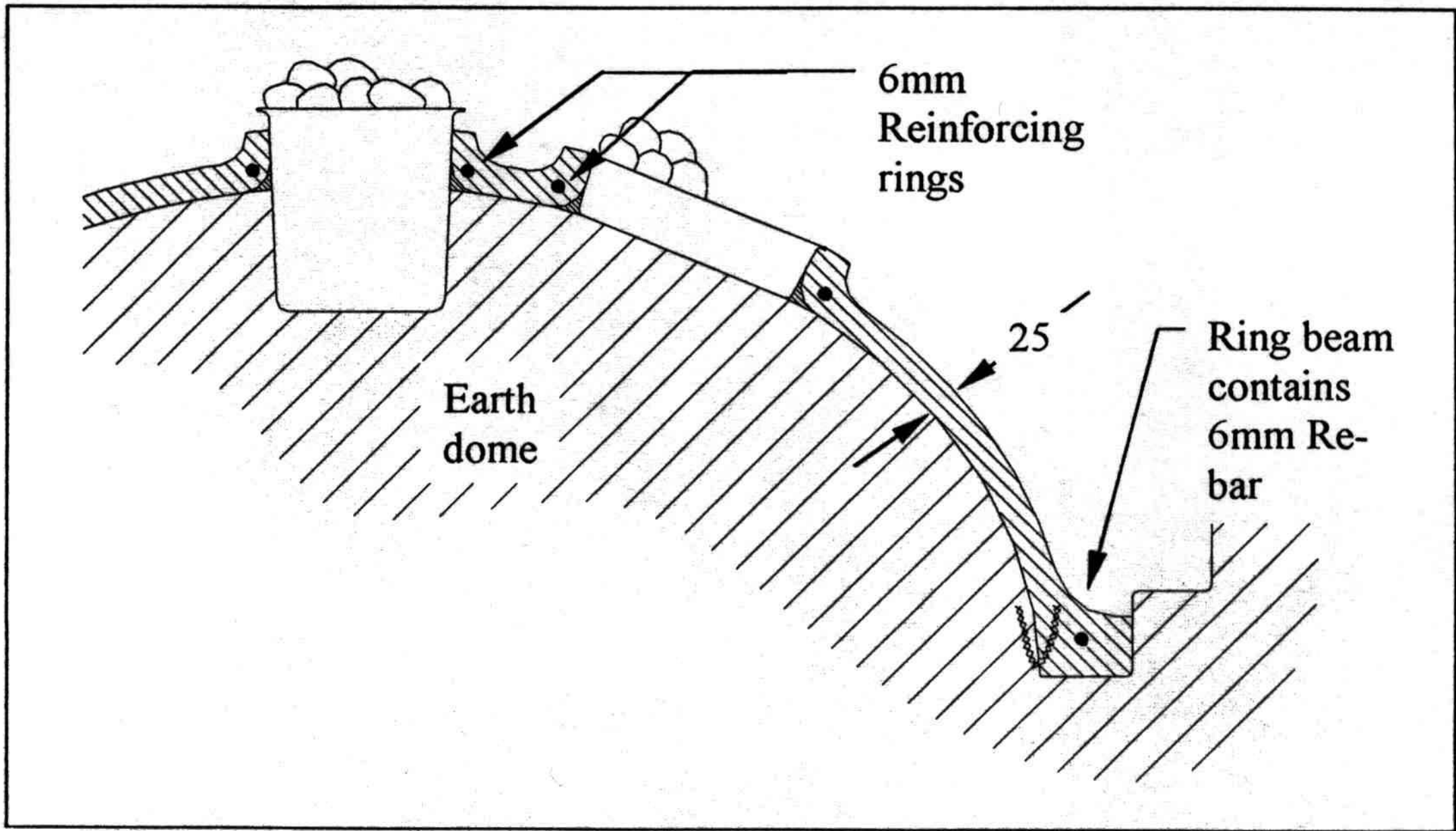
Bucket

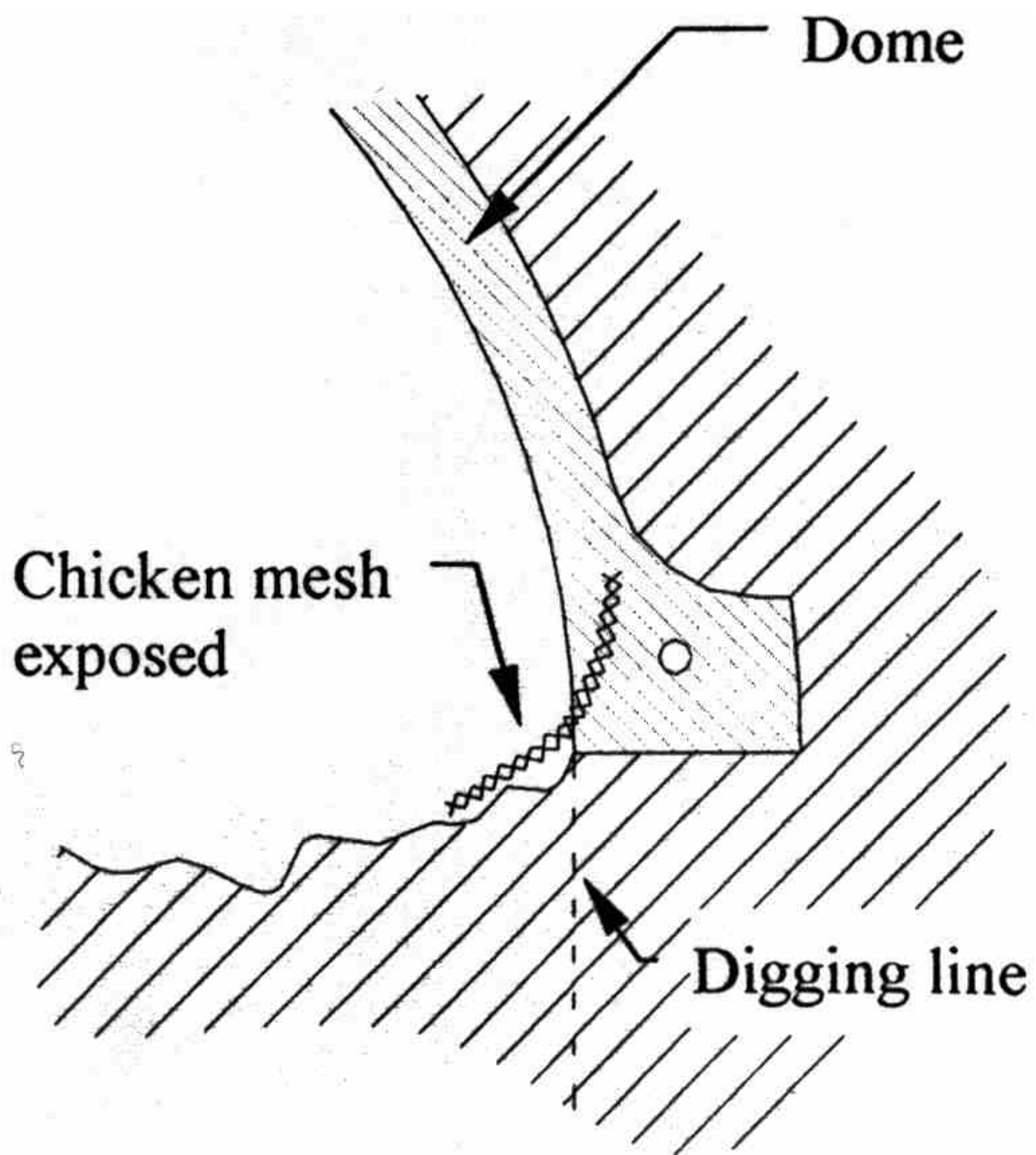
Stones to hold them in place

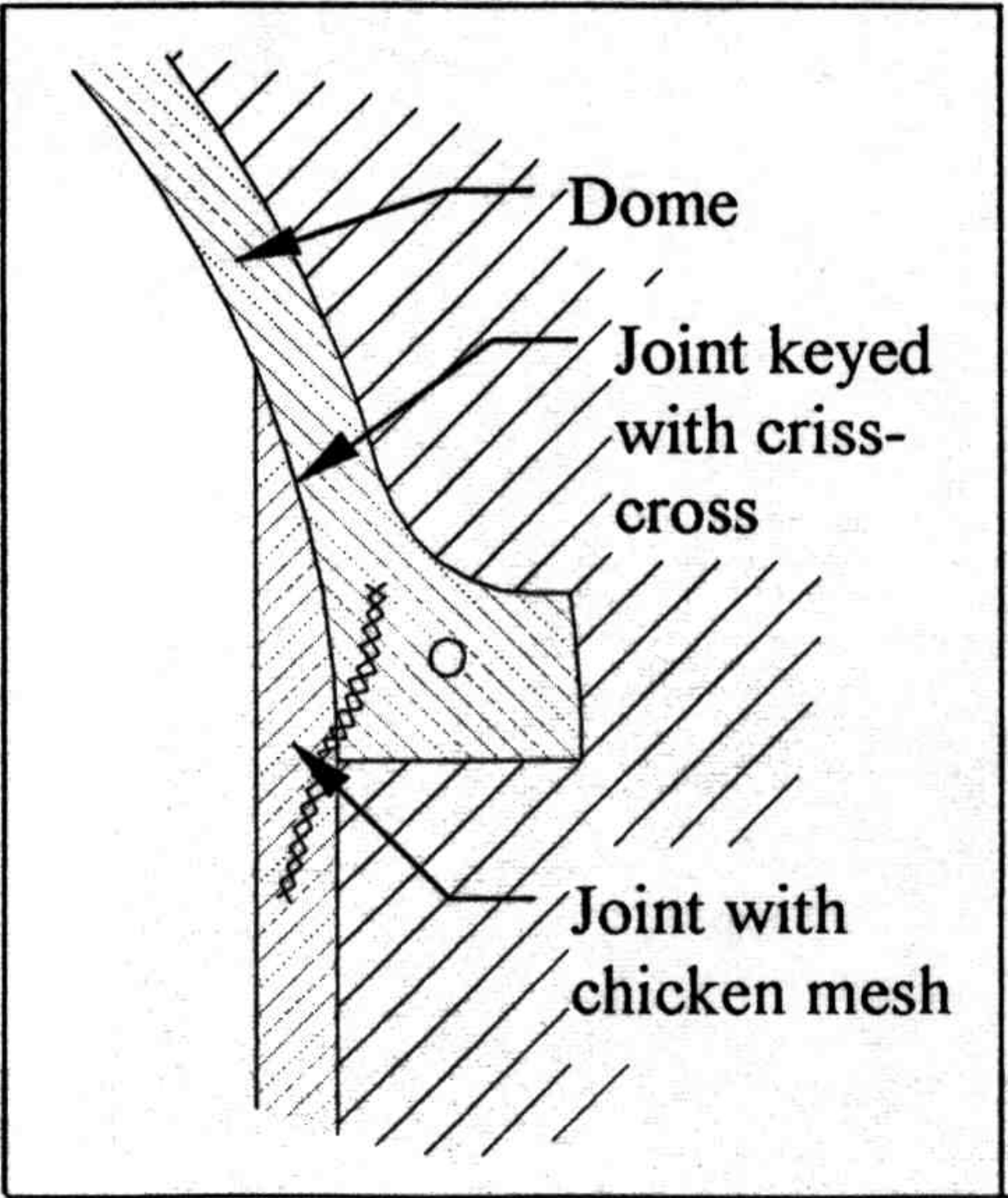
Basin

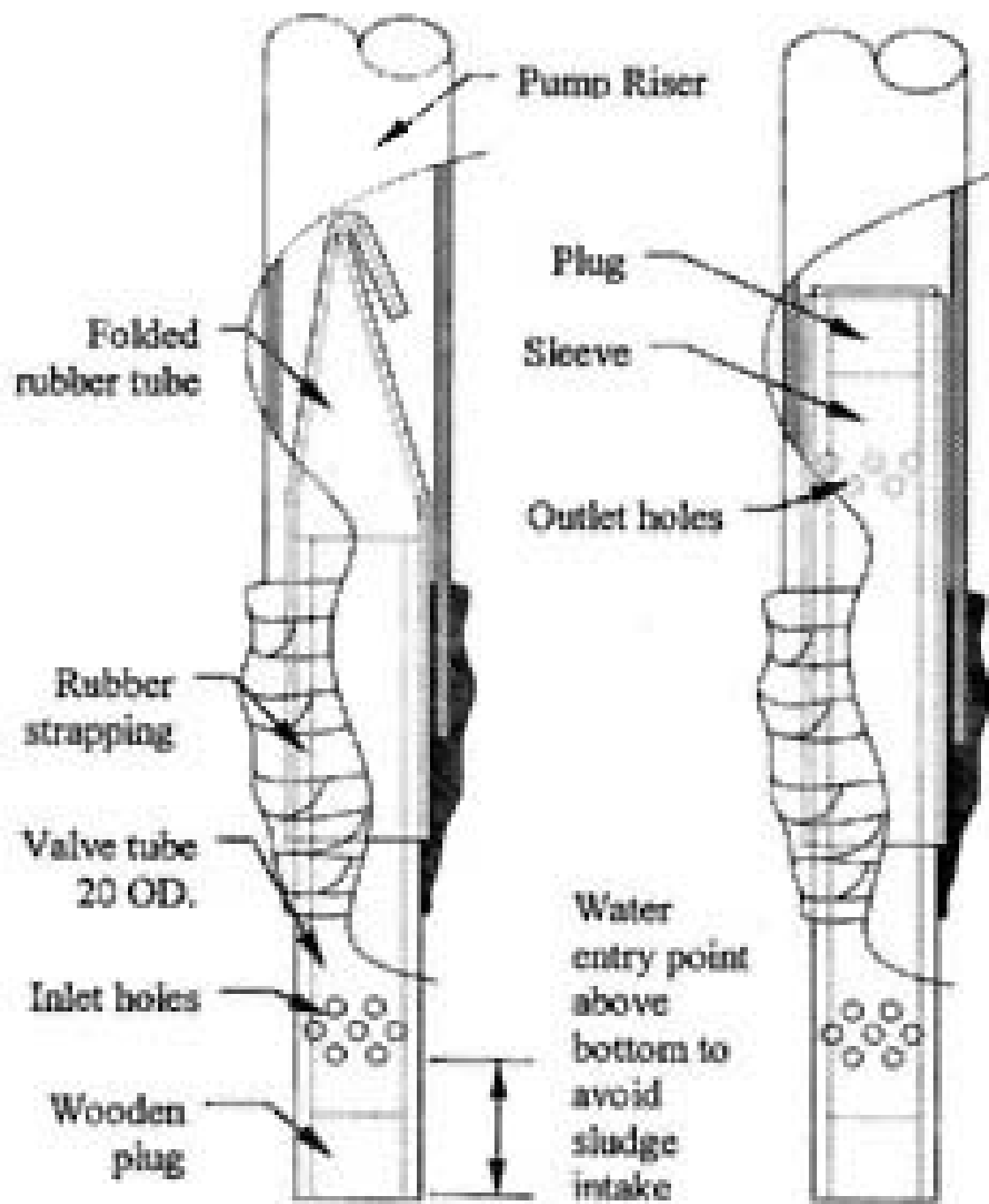
Filletts of mud

Earth dome



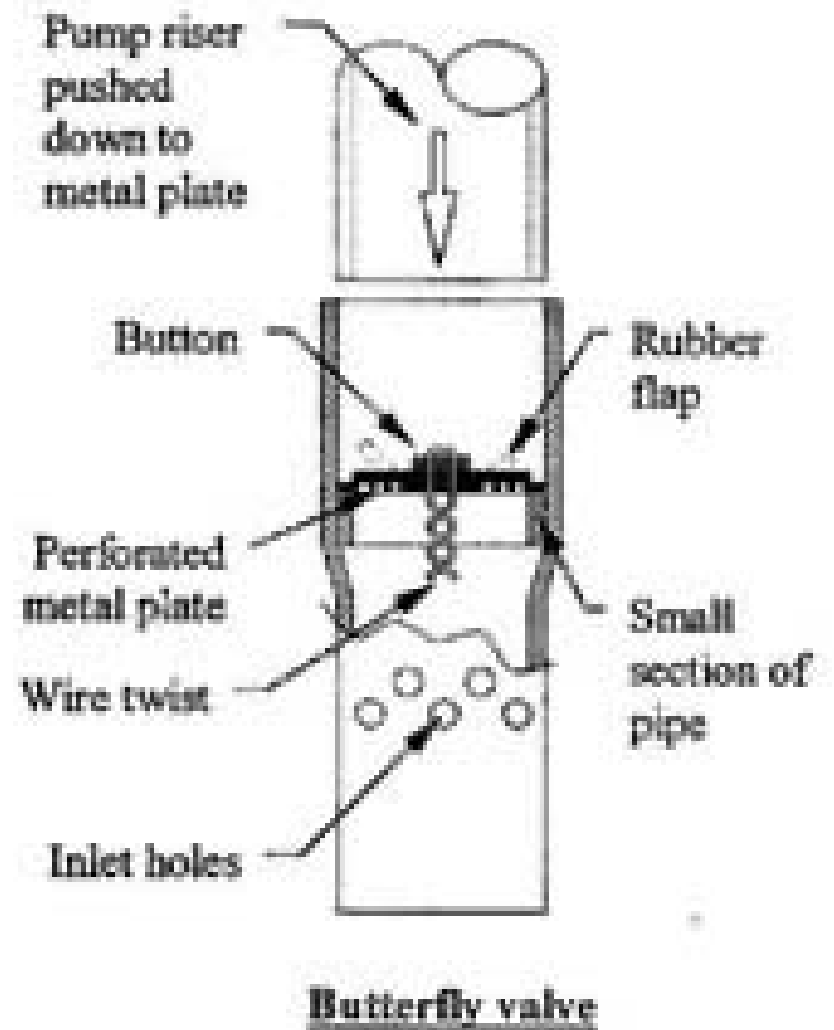


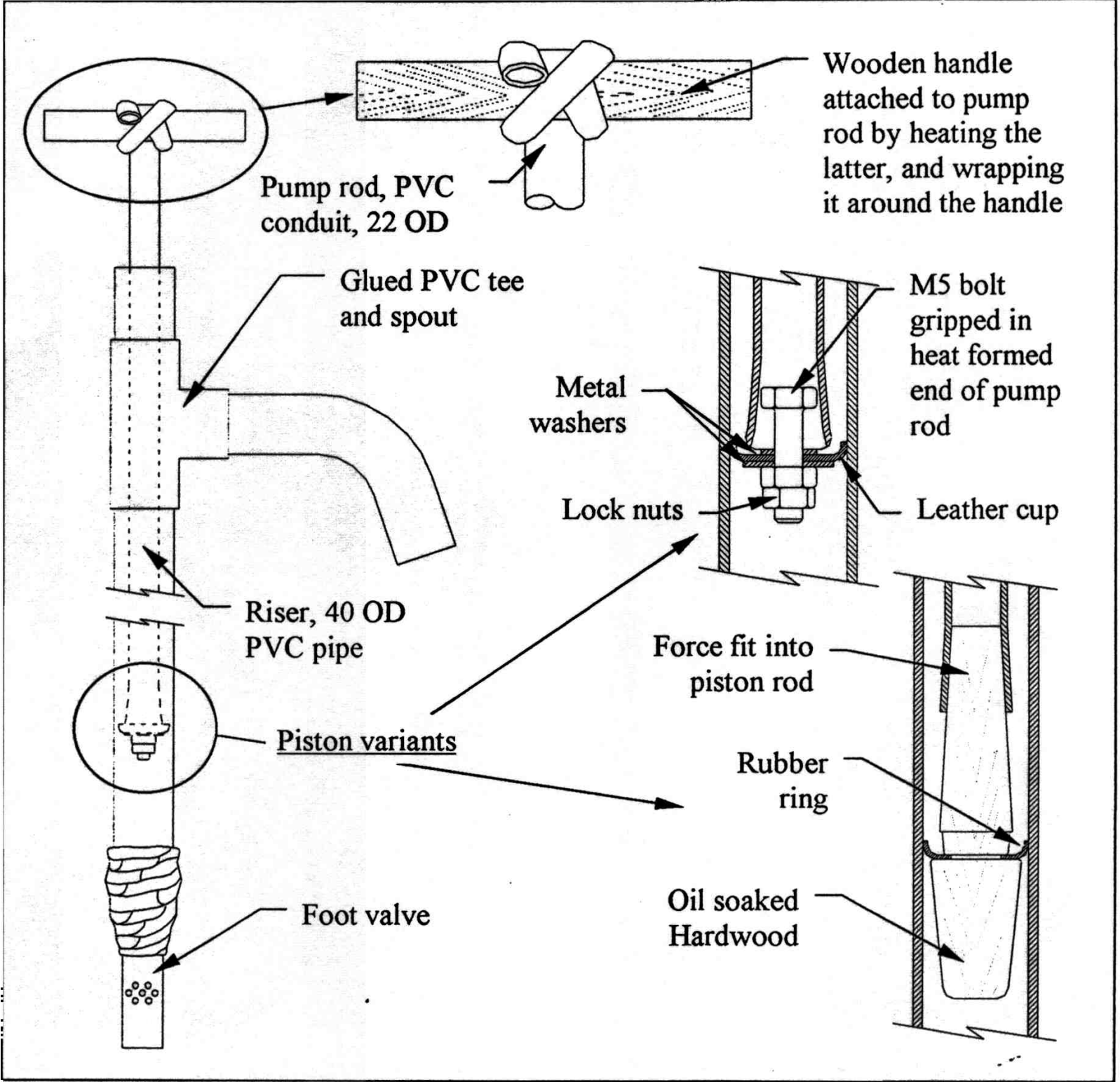


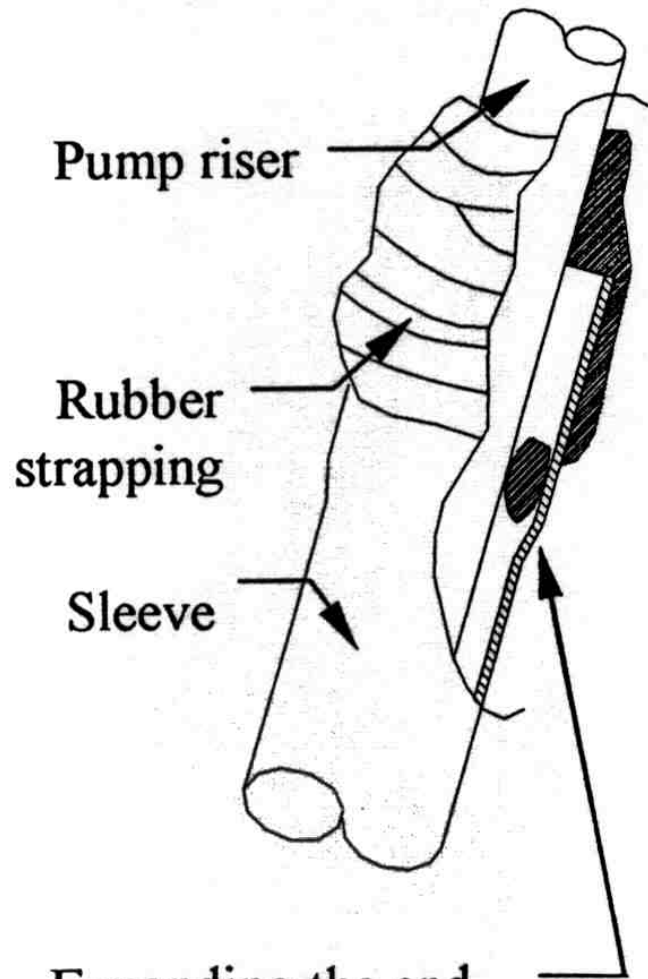


Collapsible rubber tube valve

Sleeve valve



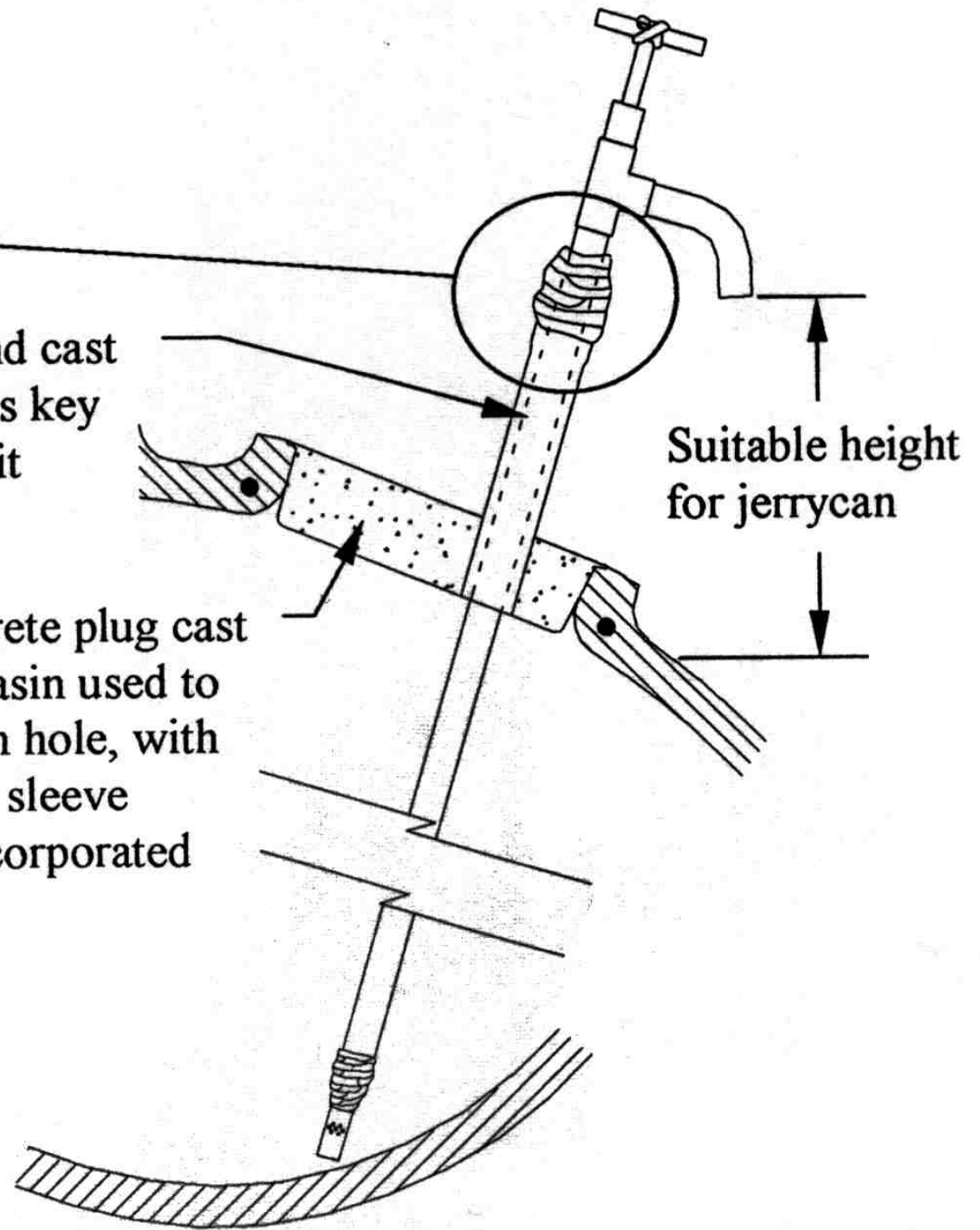




Expanding the end of sleeve allows the pump to be jammed in place with rubber

Sleeve, end cast in plug has key filed into it

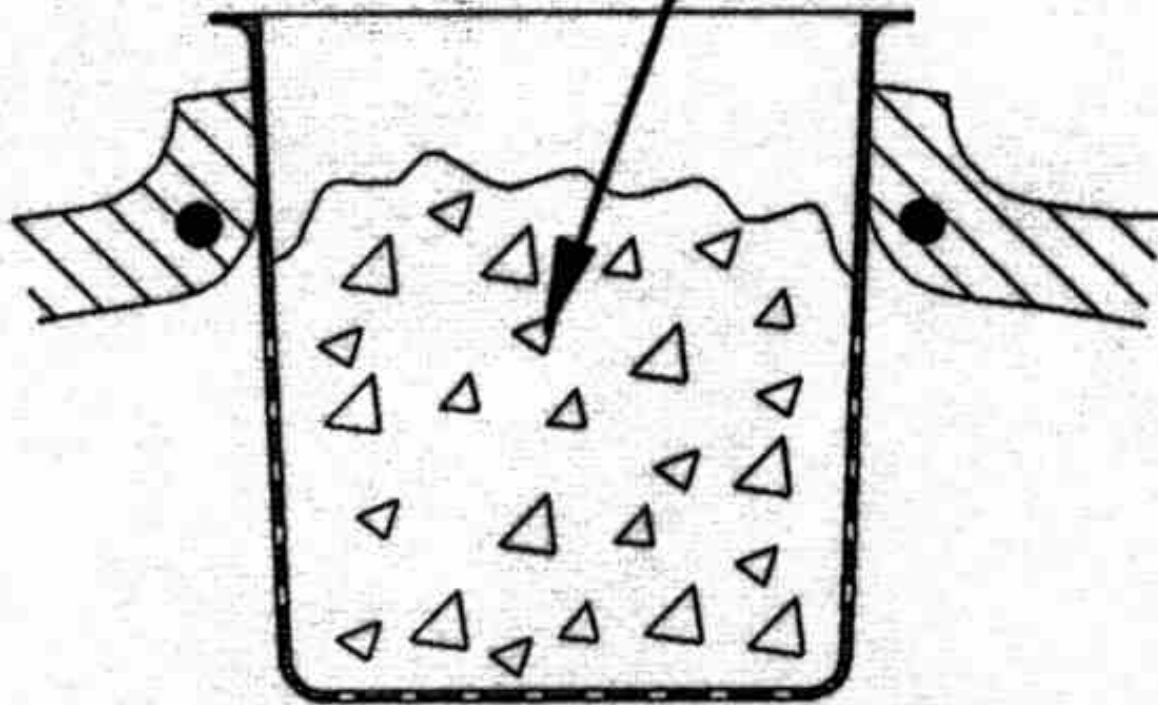
Concrete plug cast in basin used to form hole, with sleeve incorporated



Water



**Gravel filled
bucket with holes
in the bottom**

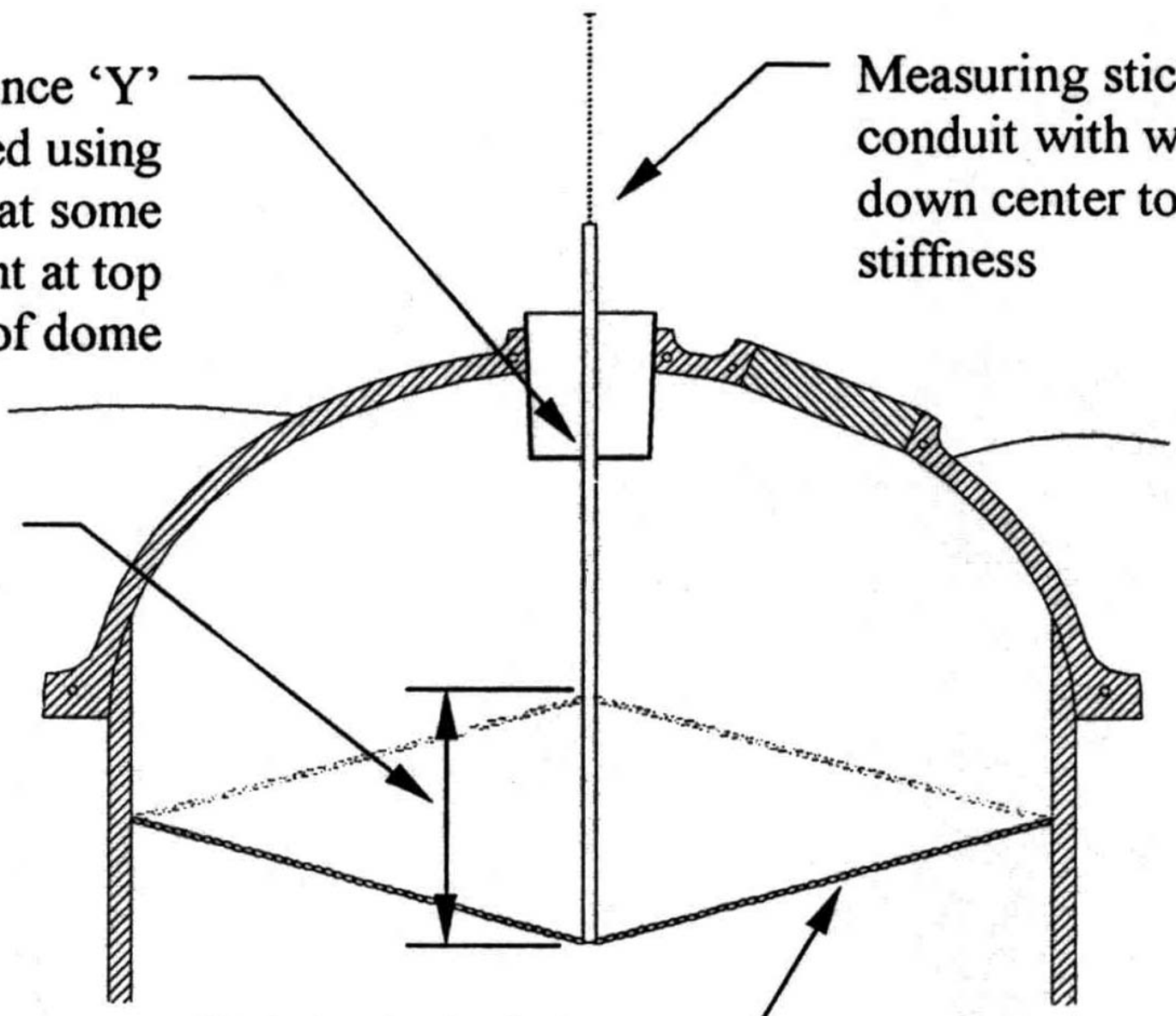


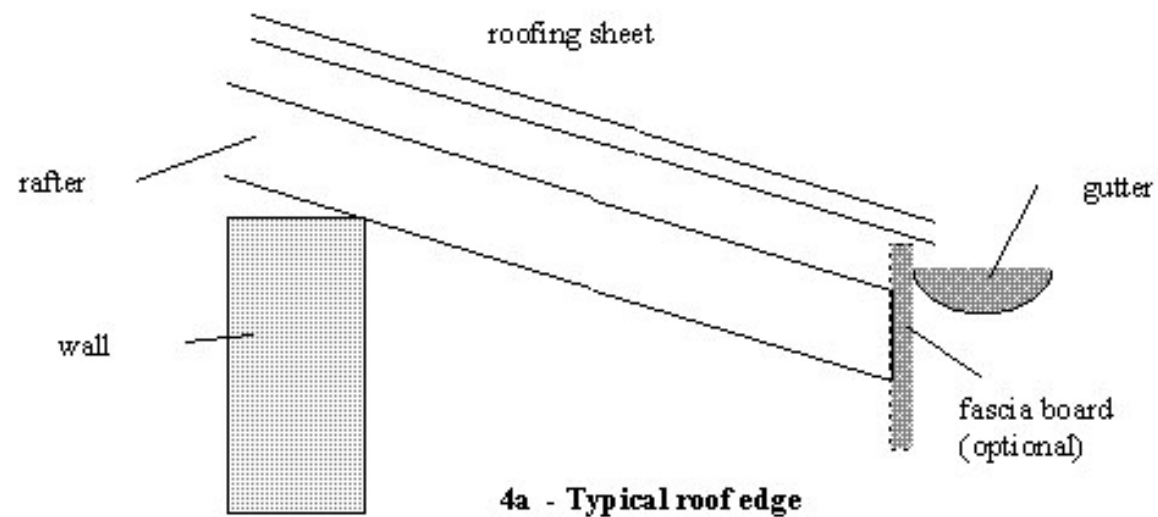
Distance 'Y'
measured using
stick at some
fixed point at top
of dome

Measuring stick,
conduit with wood
down center to give
stiffness

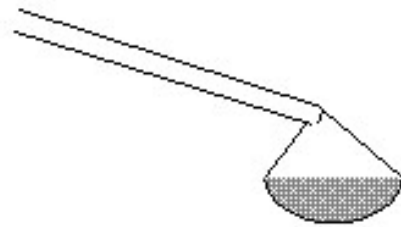
'Y' Vertical
range of
chain center

Slightly slack chains
attached to walls with
eye bolts

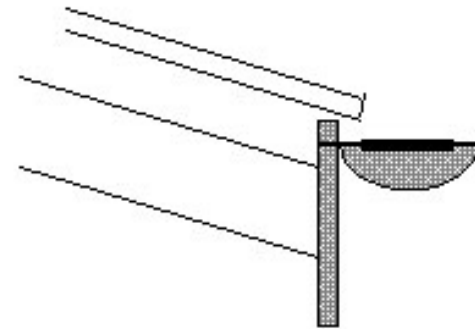




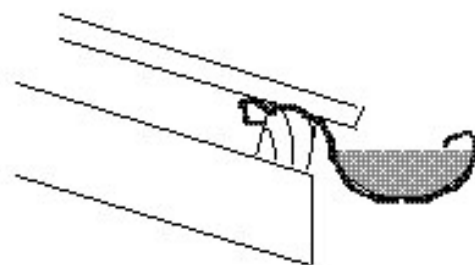
4a - Typical roof edge



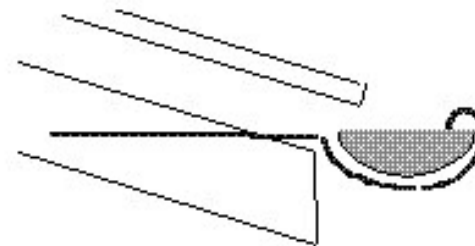
4b - Wiring to roof edge or spar



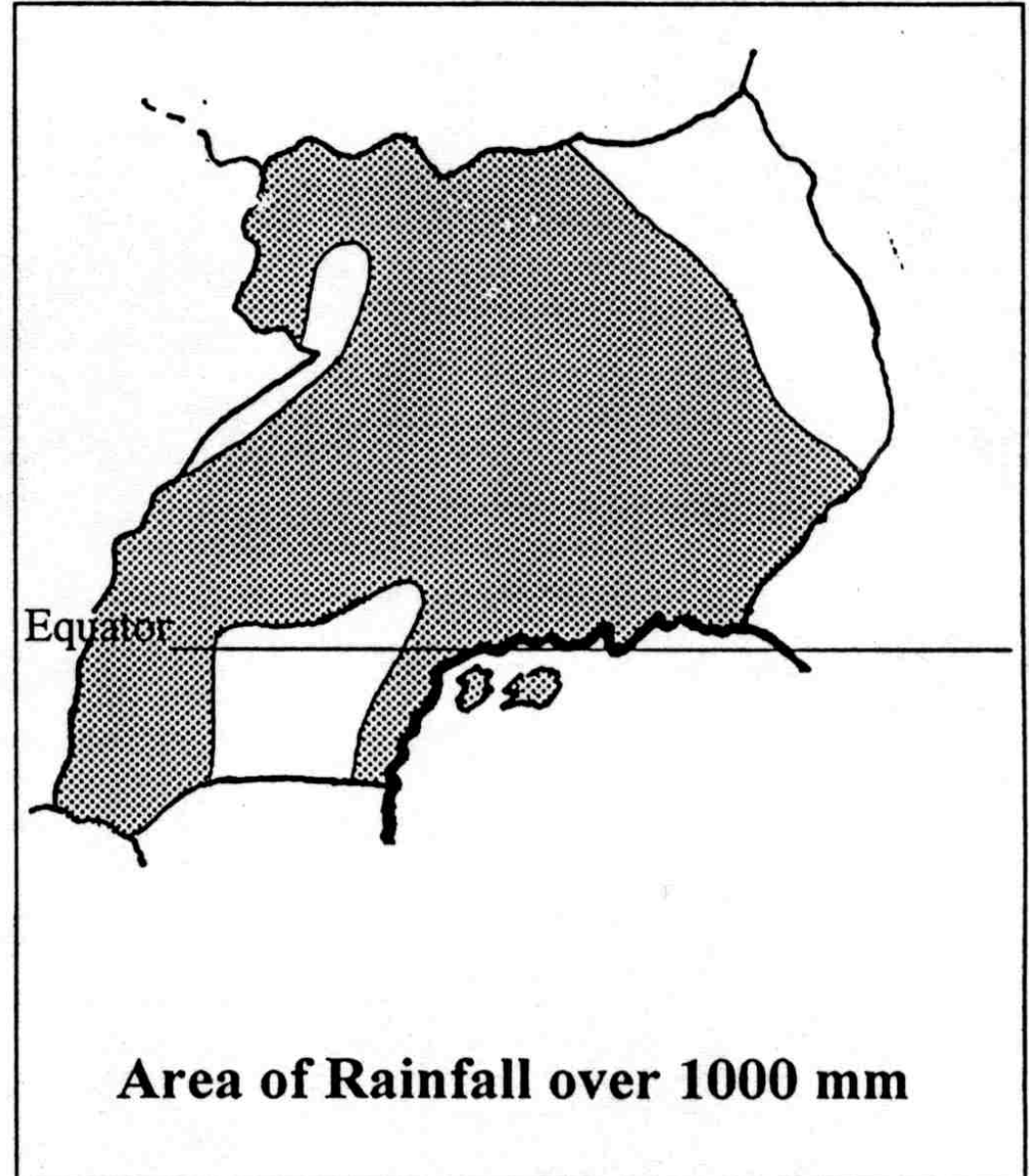
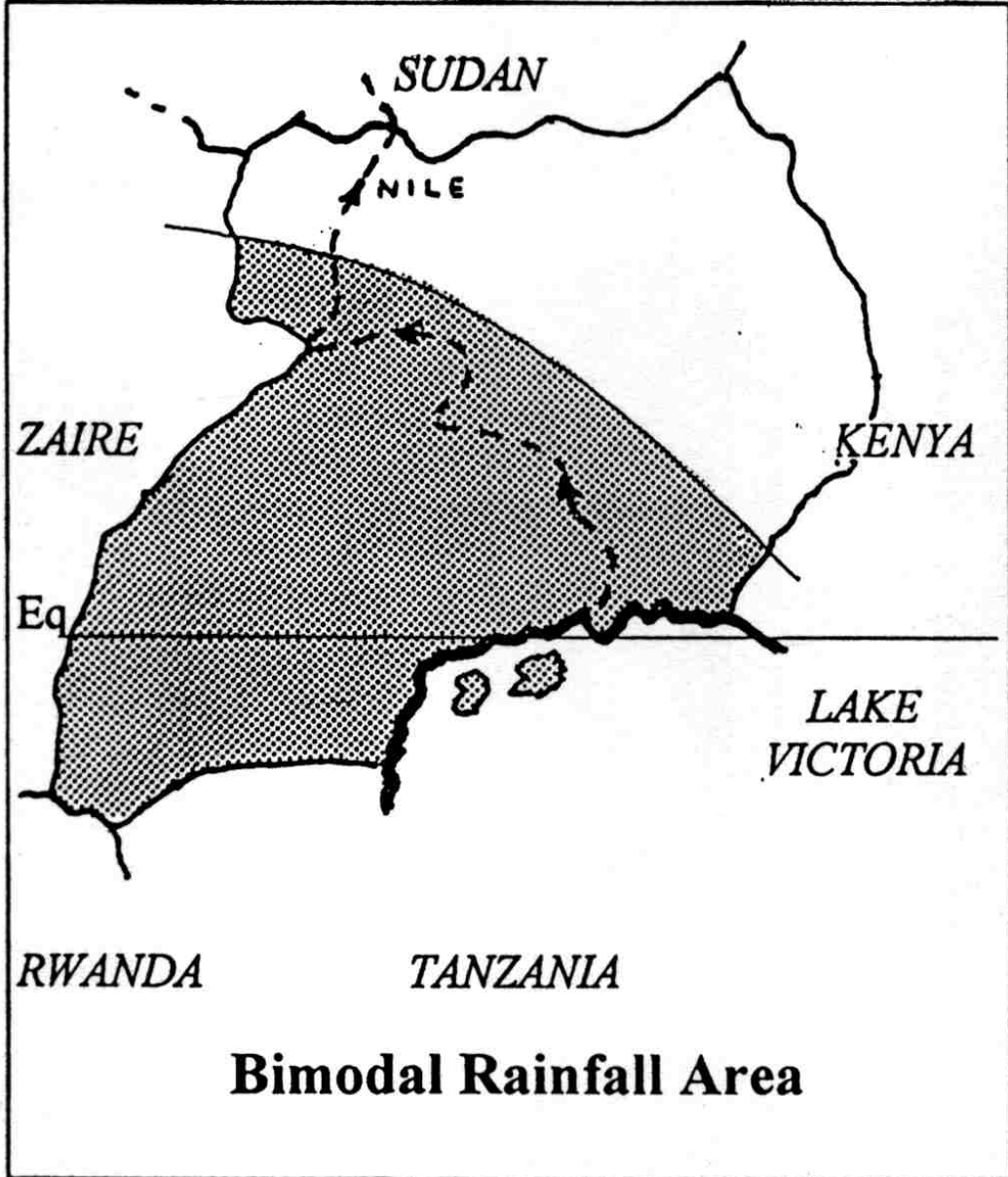
4c - Nailing to fascia board - plastic or metal tube inside gutter prevents the nail from collapsing it



4d - Shaped bar connected to purlin



4e - Strip connected to end of rafter







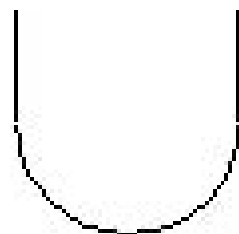




semi-
circular



'U' shape



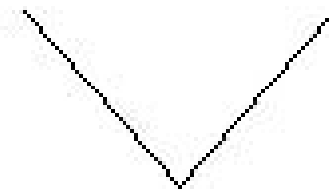
rectangular

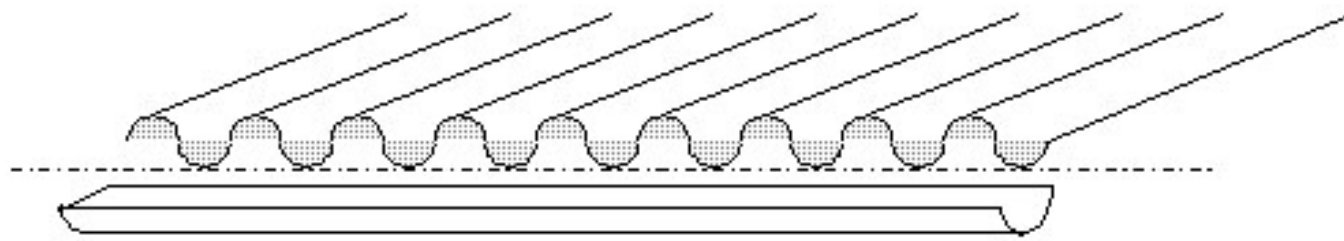


trapezoidal

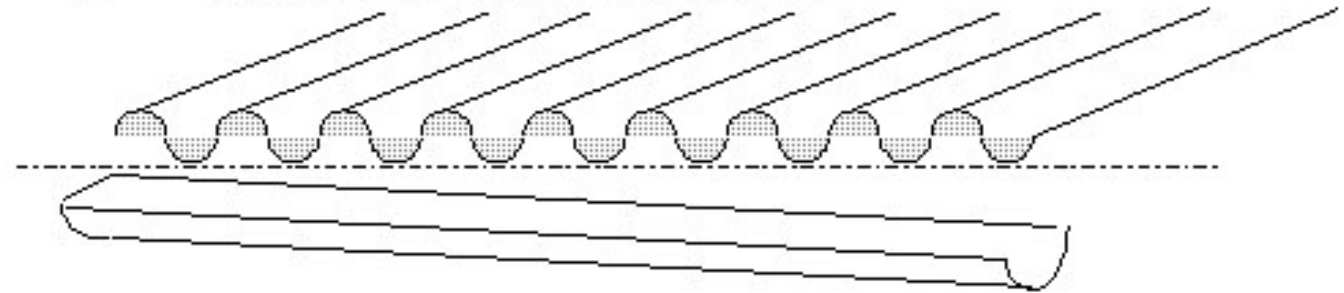


Vee channel





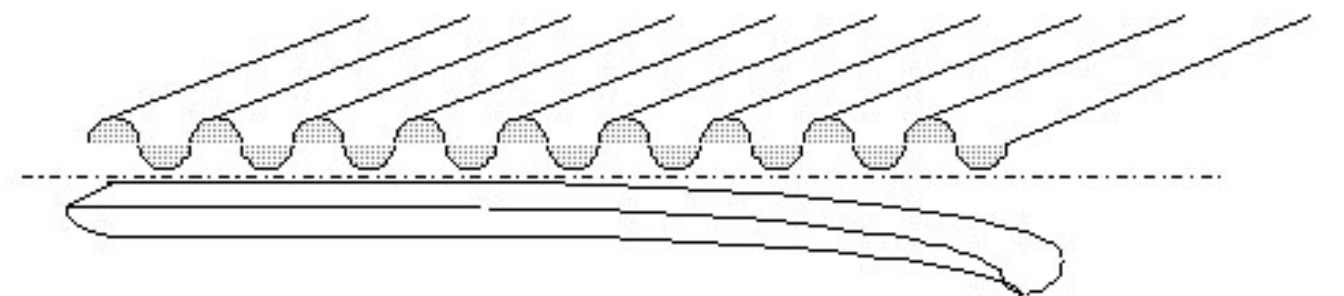
2a Flat gutter (no slope) under flat roof edge



2b Uniformly sloping gutter under flat roof edge



2c Both gutter and roof edge sloping uniformly



2d Gutter slope increases towards the discharge end

Roofing - e.g. corrugated GI sheet

wall

y

x

drip
line

light
rain

intense
rain

