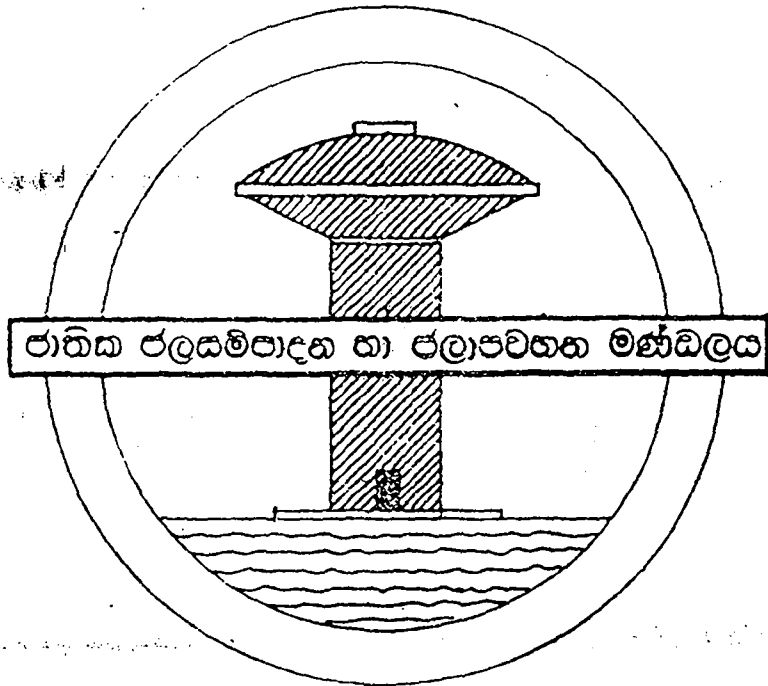


77-6372

MINISTRY OF LOCAL GOVERNMENT, HOUSING AND CONSTRUCTION  
**NATIONAL WATER SUPPLY AND DRAINAGE BOARD**  
SRI LANKA

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8 8 G U



DESIGN MANUAL D6  
GUIDELINES FOR  
LATRINE SELECTION AND CONSTRUCTION  
MAY, 1988

**WATER SUPPLY AND SANITATION SECTOR PROJECT**  
(USAID SRI LANKA PROJECT 383-0088)

321.4-0864-6372

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321.4 0894

DESIGN MANUAL D6

GUIDELINES FOR  
LATRINE SELECTION AND CONSTRUCTION

May 1988

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### List of Abbreviations

ACLG	-	Assistant Commissioner of Local Government
AGA	-	Assistant Government Agent
AGM	-	NWSDB Assistant General Manager
BMC	-	Building Materials Corporation
CE	-	NWSDB Chief Engineer
CS&S	-	NWSDB Community Support and Sanitation Section
DGM	-	Deputy General Manager
DHO	-	Divisional Health Officer
DWS	-	Direct Pit Water Sealed Latrine
ES	-	Engineering Science
FHW	-	Family Health Workers
GM	-	General Manager
GA	-	Government Agent
GRM	-	Gramodaya Mandalaya
HEO	-	Health Education Officer
MOH	-	Ministry of Health
MPCS	-	Multi Purpose Co-operative Society
NWSDB	-	National Water Supply & Drainage Board
NGO	-	Non Governmental Organization
OWS	-	Offset Pit Water Sealed Latrine
PCC	-	Project Co-ordinating Committee
PDS	-	Pradeshia Sabha
PHC	-	Primary Health Care Programme of MOH
PHI	-	Public Health Inspector
PHN	-	Public Health Nurse
PS	-	Pre-School Latrine
RDHS	-	Regional Director of Health Services
RM	-	NWSDB Regional Manager
SPAC	-	Sub-Project Action Committee
SPHI	-	Supervising Public Health Inspector
TA	-	NWSDB Technical Assistant
VIP	-	Ventilated Improved Pit Latrine

\*\*\*

## Useful Conversion Factors

	<u>Metric to British</u>		<u>British to Metric</u>
Length	1 mile = 1.609 km	1 km	= 0.6214 mile
	1 ft = 0.3048 m	1 m	= 3.2808 ft
	1 in = 25.4 mm	1 cm	= 0.3937 in
Area	1 acre = 0.4047 ha*	1 ha	= 2.47 acre
	1 ft <sup>2</sup> = 0.0929 m <sup>2</sup>	1 m <sup>2</sup>	= 10.76 ft <sup>2</sup>
Volume	1 ft <sup>3</sup> = 0.02832 m <sup>3</sup>	1 m <sup>3</sup>	= 35.31 ft <sup>3</sup>
Capacity	1 gal = 4.546 litres	1 litre	= 0.220 gal
	1 US gal = 3.785 litres		0.264 US gal
Mass	1 lb = 0.454 kg.	1 kg	= 2.205 lb

### Miscellaneous

Area	1 mile <sup>2</sup>	=	640 acres
	1 acre	=	160 perches (Sri Lanka)

\* 1 hectare (ha) = 10,000 m<sup>2</sup>

## 1. INTRODUCTION

The National Water Supply and Drainage Board (NWSDB), with technical and financial assistance from USAID, under the NWSDB/USAID Water Supply and Sanitation Sector Project (Project No.383-0055), is implementing 5 or more water supply and sanitation sub-projects. An important feature of these sub-projects is that a Latrine Construction Programme will go hand in hand with the provision of water supplies. At present, 5 sub-projects are being implemented in 3 Districts:

<u>District</u>	<u>Sub-project Areas</u>
Ratnapura	Kahawatte Eheliyagoda
Puttalam	Wennappuwa Kakkapalliya
Galle	Ahangama

The objectives of this programme are:

- o To construct about 10000 new latrines and about 4000 pre-school latrines in the sub-project areas along with the rehabilitation or new construction of water supply schemes;
- o To effect greater liaison and coordination between the Ministry of Health and other related government agencies, the NGO sector and the NWSDB through integration of the Latrine Construction Programme with the Health Care Delivery System of the Ministry of Health;
- o To promote community involvement and participation in the Latrine Construction Programme specifically through:
  - a) The formation of Sub-project Action Committees (SPAC) consisting of Gramodaya Mandala representatives, other community leaders and field level officers. The SPAC would take responsibility for the planning, implementation and monitoring of the Latrine Construction Programme.
  - b) The formation of the Project Coordinating Committee (PCC) consisting of representatives of SPAC's and senior government officials to effect liaison, coordination and problem resolution.
  - c) The recruitment, training and optimum utilization of health volunteers selected from educated youth of the sub-project areas.

9. To promote community awareness of the value of safe water and sanitary latrines in the prevention of disease, through a well organized, continuous programme of health education.

These guidelines describe four basic types of latrines which are recommended under the programme. Selection criteria are given, together with descriptions, design details, construction methods, estimated costs, manpower requirements and maintenance requirements.

For details of administrative aspects of the programme, including data collection, coordination and monitoring, materials supply, payment and invoicing procedures, health education, etc. refer to Annexes.

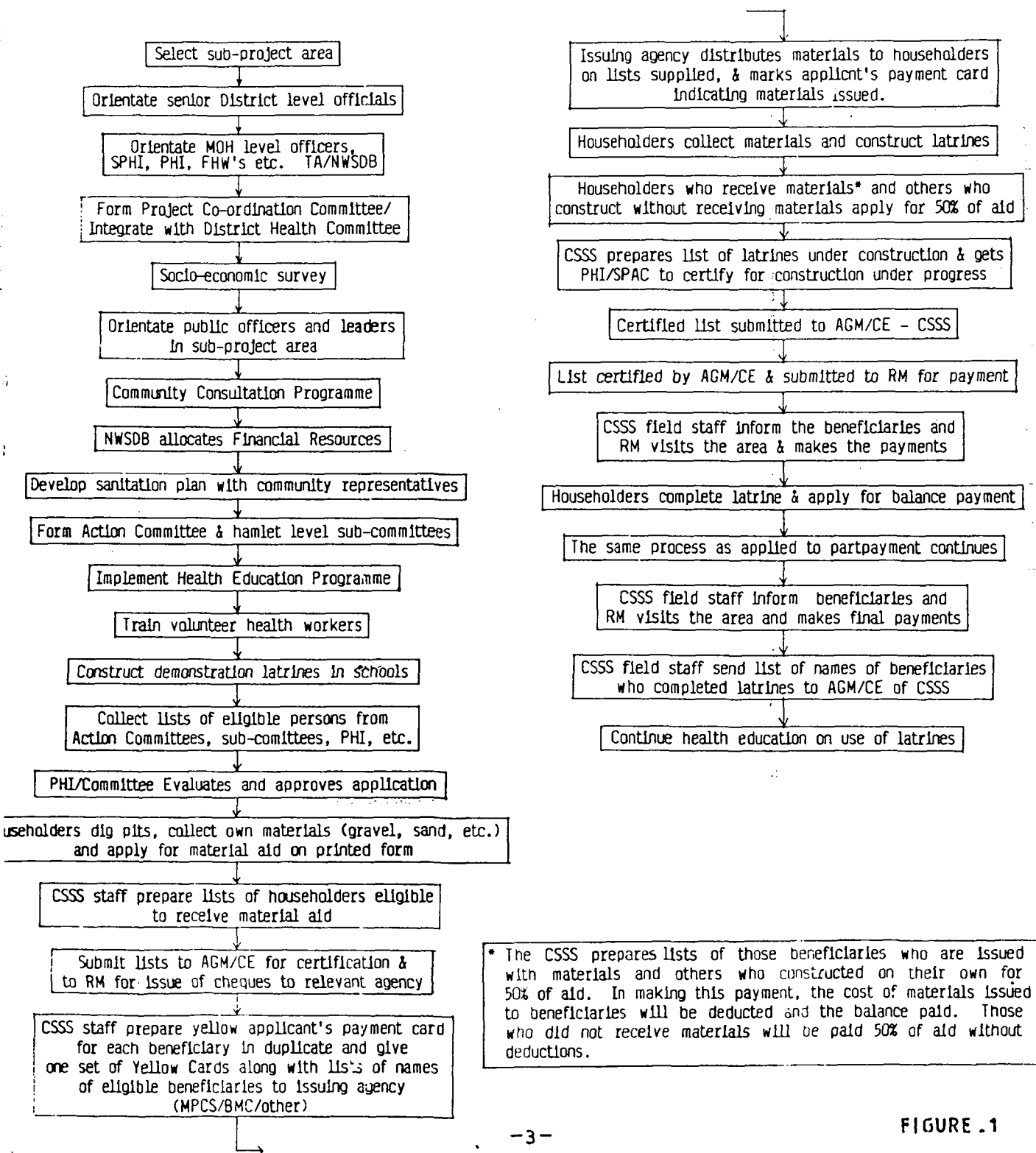


## 2. IMPLEMENTATION

### 2.1 Procedure

Figure 1 illustrates the procedures from the initial selection of sub-project area to planning, construction, use and maintenance of the latrine.

#### IMPLEMENTATION PROCESS



\* The CSSS prepares lists of those beneficiaries who are issued with materials and others who constructed on their own for 50% of aid. In making this payment, the cost of materials issued to beneficiaries will be deducted and the balance paid. Those who did not receive materials will be paid 50% of aid without deductions.

## 2.2 Responsibilities

The responsibilities of the parties are as follows:

a) Responsibilities of the NWSDB Community Support and Sanitation Section (CSSS) and Ministry of Health

- o Plan, implement, monitor and evaluate the Latrine Construction Programme.
- o Initiate surveys, studies and research for the programme.
- o Initiate health education.
- o Initiate procurement of supplies, equipment and materials for latrine construction.
- o Initiate disbursement of latrine subsidies, etc.
- o Plan community participation for latrine construction.
- o Effect liaison and coordination with international/national/NGO sectors.
- o Initiate training programmes.
- o Effect payment of subsidies of beneficiaries.

b) Responsibilities of Project Coordinating Committee (PCC/District Health Committee(DHC))

- o Assist in the solution of problems of planning, implementation, monitoring and evaluation of latrine programme referred by Sub-project Action Committees (SPAC).
- o Establish liaison and coordination with government agencies, NGO and the private sectors.
- o Assist in the procurement/manufacture and distribution of latrine plates and syphons.
- o Assist in the payment of latrine subsidy.
- o Support health education programmes.
- o Promote community participation in latrine construction.

c) Responsibilities of Sub-project Action Committee (SPAC)

- o Assist in the planning, implementation, monitoring and evaluation of the sub-projects.
- o Select, recruit and train field health workers.
- o Recruit, train and deploy health volunteers, and follow up on their work.
- o Solve problems of implementation of the programme.
- o Organize shramadana and community participation in latrine construction.
- o Chairman represents PAC at PCC.
- o Supervise latrine construction.
- o Recommend payment of subsidies.

d) Responsibilities of Householder

- o Participate actively in the latrine construction programme.
- o Attend meetings and latrine demonstrations.
- o Participate with others in shramadana activities.
- o Dig the latrine pit and line the pit as required according to specifications, install latrine plate and syphon and construct the super-structure.
- o Use the latrine subsidy effectively for latrine construction only.
- o Use and maintain latrine in clean condition.

2.3 Composition of the PCC and SPAC

<u>PCC/DHC</u>	<u>SPAC</u>
Government Agent (Chairman)	Chairman of Gramodaya
Additional GA (Development)	Mandala (Chairman)
Chairman SPAC	All members of the
ACLG	Gramodaya Mandalas
Asst. Director, Planning	Principals of leading
DHO/MOH	schools
Regional Manager, NWSDB	Other selected leaders
Representative from CSSS	Health Education Officer
RDHS (Secretary)	Special Services Officer
Asst. Government Agent (AGA)	Public Health Inspector
Consultants/CSSS	Representative from CSSS
	(Secretary)
	Family Health Worker
	TA, NWSDB
	TA, PDS Sub-Office
	Community Development
	Officer
	Chairman Pradeshiya
	Sabha
	Grama Sevaka Officer

### 3. SELECTION OF LATRINE TYPE

The four basic types of latrines recommended are:

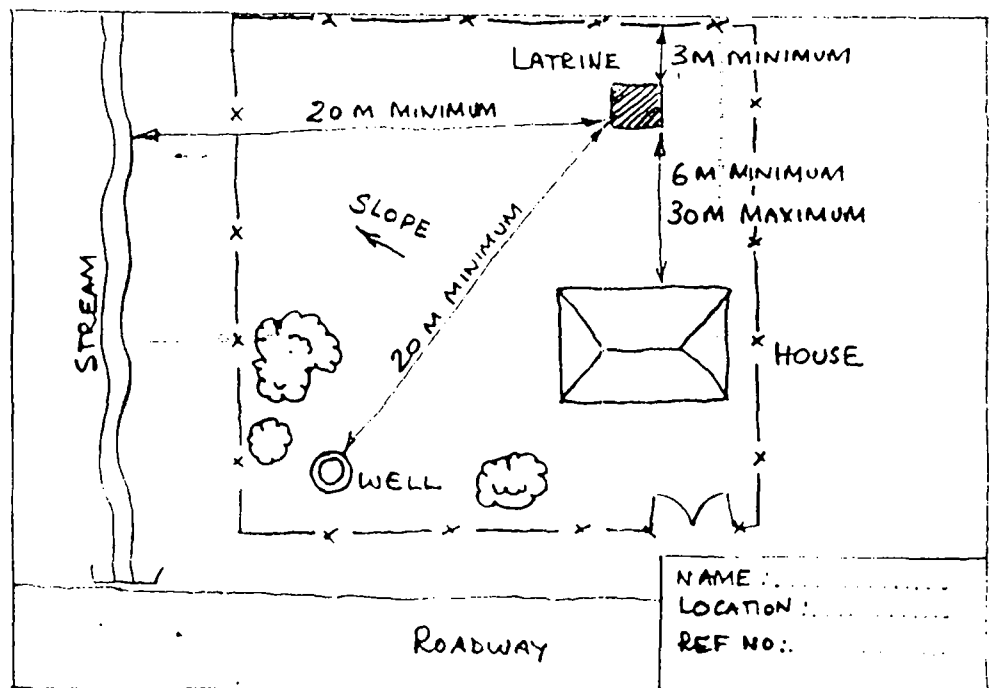
- a. Ventilated improved pit latrine [VIP type] (Figure 3.)
- b. Direct water sealed latrine [DWS type] (Figure 4).
- c. Offset water sealed latrine [OWS type] (Figure 5).
- d. Pre-school latrine [PS type] (Figure 6).

#### 3.1 Selection Criteria

In choosing the type of latrine, there are some important factors to be considered as follows:

- o Distance to the water supply, and how much water can easily be carried to the latrine; the VIP type does not require water for flushing, and is therefore more suitable when the water supply is far away. The DWS and OWS types require flushing water and are suitable only when the water supply is nearby.
- o Groundwater level: if groundwater is permanently or seasonally within 1 meter of ground surface, or the area is subject to flooding, the latrine floor must be raised above ground level to provide adequate storage; lining of the pit walls may be necessary if the ground is unstable; if possible, construct the latrine where the groundwater level is deeper.
- o Soil type: the latrine should be located in permeable soil so that liquids will soak away. Soil which is impermeable, such as clay or rock, is not suitable for water-sealed latrines since the liquids will not soak away and the pit will fill too rapidly. Very permeable, sandy or fractured soils also may not be suitable if there is a possibility that nearby water sources may be polluted by the latrine. For both these situations, a VIP type latrine, requiring no flushing water, is the best solution.
- o Soil stability: in unstable soils the pit must be lined.
- o Housing density: in denser urban areas, the OWS or DWS type is preferable to the VIP type; re-use of waste and reuse of pits will be necessary where space is limited.

- o Pit contents: when filled to within 0.5m of ground level, pits should be filled in and covered with earth. Before this happens, a new pit must be dug, and for VIP and DWS types, the latrine house must be taken down and rebuilt, or converted to an OWS type with offset pit. After a period of 1-2 years of storage, the pit contents mature and become safe to handle and are valuable for use as manure. If pits are emptied periodically in this way, it will never be necessary to have more than 2 pits.
- o Latrine location: latrines should be sited as far as possible from and downstream/downhill of any nearby water sources; factors contributing to possible pollution are:
  - latrine is located close to shallow wells;
  - bottom of latrine pit is below water table;
  - soil contains fissures or cracks or is highly permeable;
  - large volume being extracted from nearby well, inducing drawdown and assisting flow from latrine pit towards well.
- o For each latrine, a sketch of proposed location should be prepared, showing the property boundary, main house, slope of ground, streams and wells, etc. Figure 2 is an example of a location plan, and shows typical distances.



Latrine Location Plan  
Figure 2

- o Latrine demonstrations: prior to latrine construction work, a set of wooden models and/or colour photographs would be exhibited in schools and prospective beneficiaries invited to view the exhibits. The types of latrines favoured by the community will be constructed in one or two leading schools for demonstration purposes, to assist householders in choosing the best type of latrine for their particular use.
- o Construction of latrines: it is up to the householders whether they construct the latrines using their own labour, shramadana or hired labour. The SPAC should assist in organizing shramadana activities and in providing masons or skilled labour, and in organizing casting of slabs.

The four basic types of latrines are described in the following sections:

### 3.2 Ventilated Improved Pit Latrine (VIP Type)

This is a much-improved version of the traditional open pit latrine; the design ensures that nuisance from odours, flies and mosquitoes is minimal.

The ventilation pipe is the key to controlling odours and flies by allowing a constant flow of air down through the squatting hole and up the vent pipe. This flow of air is induced partly by convection caused by the warmth of the sun on the external vent pipe, and partly by the wind blowing across the top of the vent pipe. The interior of the latrine is designed to be dark, so that flies entering the pit are attracted upwards towards the light at the top of the vent pipe, and by the current of air. The top of the vent pipe is covered by a fly screen which traps the flies which eventually die and fall back into the pit. The vent pipe should be at least 100 mm in diameter and painted black to provide sufficient ventilation. The squatting hole should not be covered by an air-tight cover as this will prevent the circulation of air, and the latrine house should have sufficient ventilation openings.

For the optimum functioning of the latrine, the entrance should face the main wind direction and the ventilation pipe should be on the sunny side. (If in a shady location, the warmth of the sun on the vent pipe obviously has less effect). For minimum odour nuisance, the vent pipe should be high enough and, if possible, the latrine should be down-wind of the main house.

With normal use by a family of 5, a 3.5 metre deep pit should last about 8 years. When the latrine pit is full, a new pit must be dug, and the old pit covered with earth. The latrine house and squatting slab will have to be moved to the new pit. Alternatively, the latrine may be upgraded to an OWS type (See Section 3.6)

Typical construction details for the VIP type latrine are given in Figures 3 and 16. Note that the house details shown are optional (see Section 4.5), and the actual type of building is left to the householder. Section 4.1 provides additional information on pits and pit linings.

### 3.3 Direct Water Sealed Latrine (DWS Type)

The standard Ministry of Health latrine, widely used throughout the country for the past 25 years, is of the direct water-sealed type. Although this type of latrine has served its purpose well and is relatively cheap to construct, its main disadvantage has been the cement pan and syphon, which is easily broken through misuse, and is difficult to maintain in a clean condition owing to its bare cement finish. The squatting plates, often constructed and distributed in bulk, were sometimes of a poor standard of finish and not well liked by householders.

This type of latrine relies on a water-seal syphon, below the squatting pan, to contain odours and prevent the entry of flies to the soak-away pit. The latrine house may be directly over the pit, as in the DWS type described here, or offset from the pit, as in the OWS type described in Section 3.4. Although the offset type is preferred, the direct type is included here because of its common usage. Its only advantage over the offset type is that it takes up less space. The cost should be slightly less initially, but this advantage is lessened by having to rebuild the latrine house when the pit fills up.

Since 2-3 litres of water has to be carried to the latrine for flushing (depending on the type of syphon), it is necessary that the water source be quite near, but the latrine should not be nearer than 20 metres to a shallow well.

The pan and syphon should be of fibreglass, if available locally, or other approved material (see Figure 24.3). As noted above, cement pans and syphons are not recommended.

With normal use by a family of 5, a 90 cm square by 3.5 metre deep pit should last about 12 years. When the latrine pit is full, a new pit must be dug and the old pit covered with earth. The latrine house and squatting slab will have to be moved to the new pit.

Typical construction details for the DWS type latrine are given in Figures 4 and 17. Note that the house details shown are optional (see Section 4.5) and the actual type of building left up to the householder. Section 4.1 provides additional information on pits and pit linings.

### 3.4 Offset Water-Sealed Latrine (OWS Type)

This type of latrine is proving to be the most popular type in the sub-project areas, so far. As for the DWS type, the OWS latrine relies on a water-seal syphon, below the squatting pan, to contain odours and prevent the entry of flies to the soak-away pit. The latrine house does not have to be moved when the pit is full; it may therefore be a permanent structure.

Also as for the DWS type, since water has to be carried to the latrine for flushing, it is necessary that the water source be quite near, but not too near if the source is a shallow well. Slightly more flushing water will be required than for the DWS type - about 4 to 5 litres.

The pan and syphon may be of ceramic (porcelain) or other approved type made of fibreglass or plastic, if these are available locally (see Figure 24.2). The pan should have a smooth, durable surface which is easy to keep absolutely clean. The cement pan and syphon (commonly in use owing to its low cost), has an unacceptably rough surface, is not so easily maintained in a clean state and is therefore not recommended.

The water-sealed latrine may, if desired, be built directly over the pit, but this has no advantage over the offset type except that slightly less flushing water is required.

When the soakaway pit is full, a new pit should be made and the drain pipe led into the new pit. After a period of 1 or 2 years, the contents of the first pit will have matured, and it may be emptied and used as manure. The 2 pits may therefore be used in rotation.

If desired, a second pit may be provided when the latrine is first built. Typical construction details for the OWS type latrine are shown in Figures 5 and 19. Note that house details shown are optional (see Section 4.5) and the actual type of building is left to the householder. Section 4.1 provides additional information on pits and pit linings.



### 3.5 Pre-School Latrine (PS Type)

Small children are often unwilling to use latrines, being frightened of the darkness, the enclosure and the pit. For this reason, families having a latrine (of any type) should build a PS type latrine to encourage the latrine habit in their children at an early age.

The latrine may be very simple, a small pit covered by a small squatting plate and water seal syphon. The pit may be surrounded, if desired, by a wall or by bushes or a low fence, but preferably not with a roof. The latrine should be built nearby the house so that the small children do not have far to go. Particular attention should be given to keeping the latrine clean to prevent odour and fly nuisance near the main house.

Typical details are shown in Figures 6 and 20. Details of a suitable fibreglass pan and syphon are shown in Figure 24.4.

Ventilated Improved Pit Latrine - Description (see also Section 3.2)

The pit lining is built in stone masonry or brick with clay or cement, the squatting slab in reinforced concrete and the superstructure with mud bricks built with clay or alternative superstructure as required; the roof is made with G.I. sheets, or clay tiles, the vent pipe is 100 mm PVC pipe, covered with mosquito mesh, the entrance a simple wooden door; outside, the walls are plastered with 2 coats of spatterdash (1m high), inside with 50 cm high smooth plastering (cement paste). For squatting slab see Figure 16.

Material List

a) Pit lining (0.6 m deep)

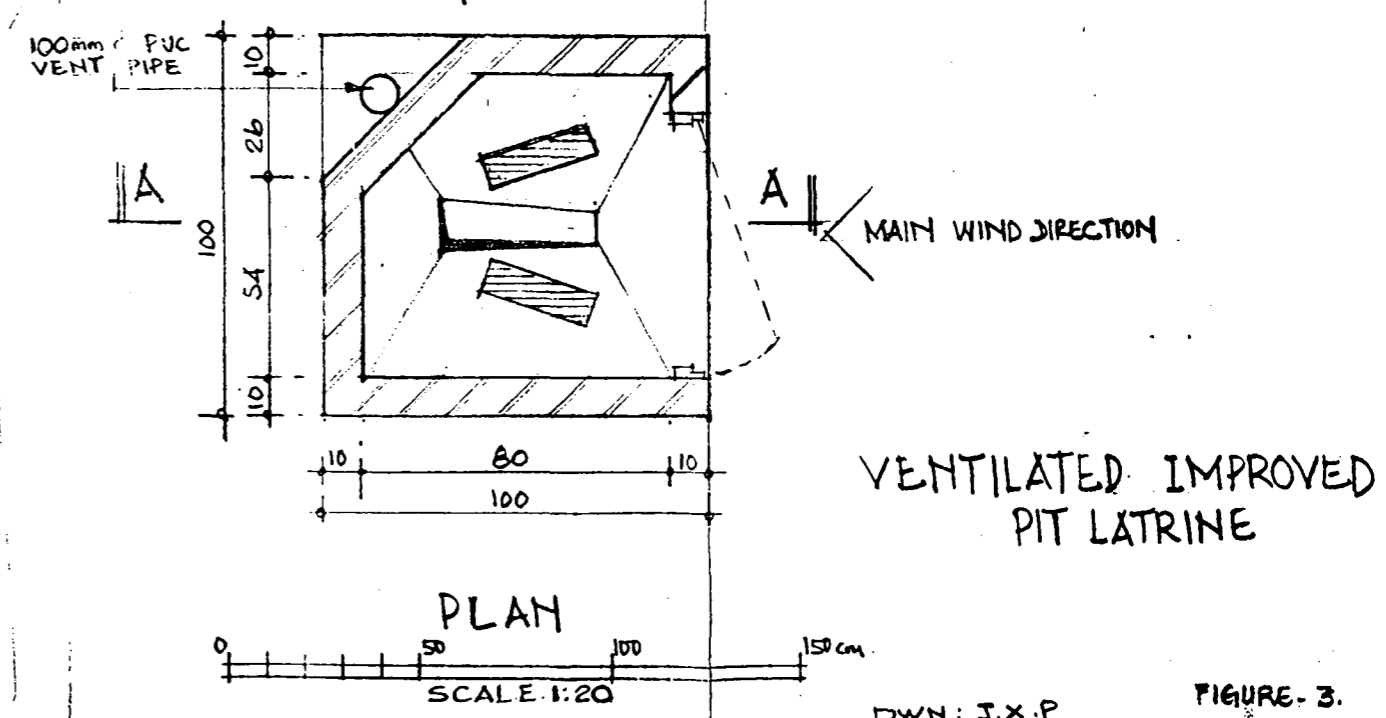
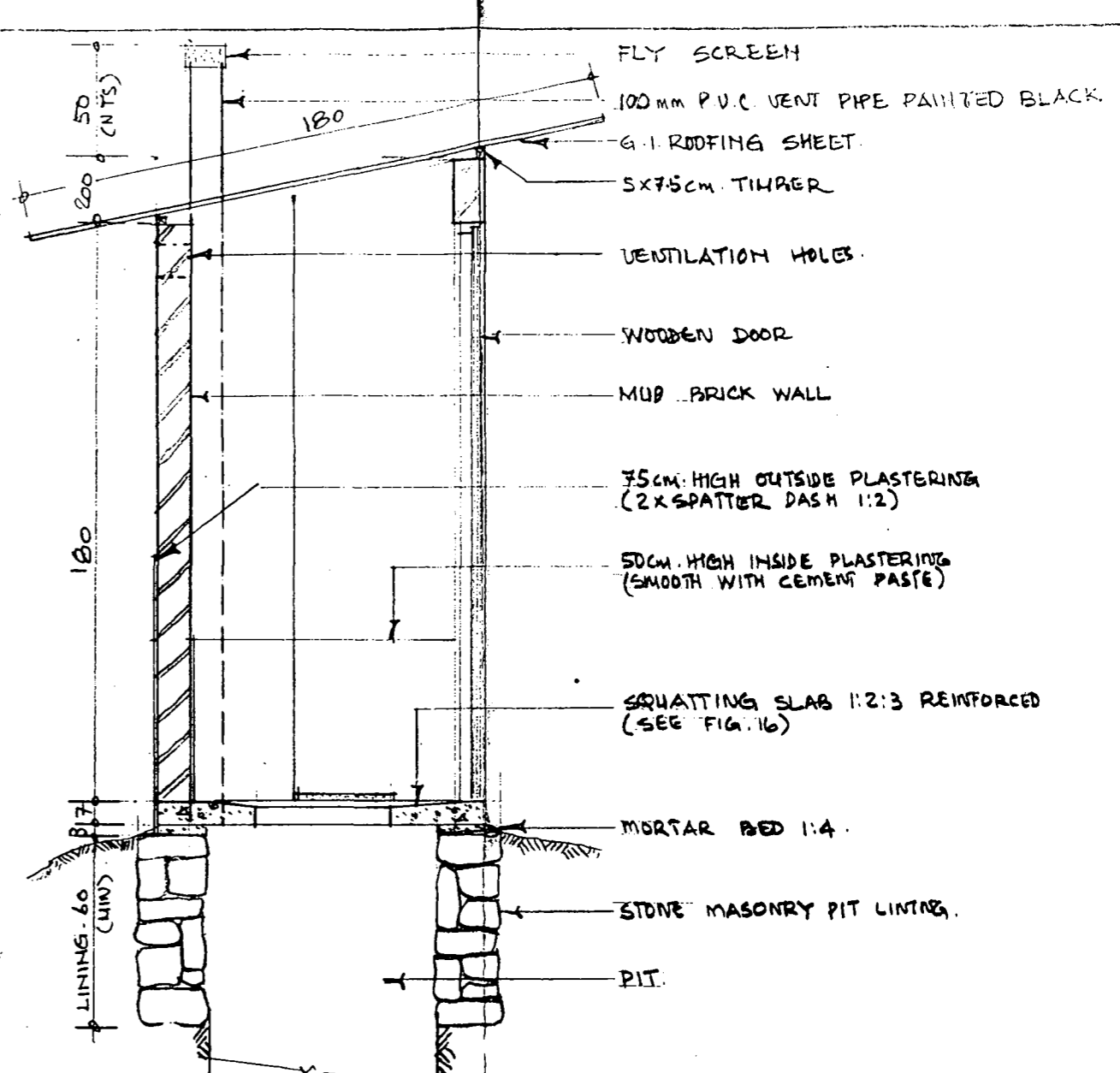
Large stones	0.36 m <sup>3</sup> (13 ft <sup>3</sup> )
Sand	0.16 m <sup>3</sup> (6 ft <sup>3</sup> )
Cement	1 bag

b) House

Mud Bricks (standard)	380 No.
Sand	0.19 m <sup>3</sup> (7 ft <sup>3</sup> )
Cement	1 bag
Roof - GI sheets 32g (180 cm long)	2 1/2 pieces
Vent pipe 100 mm pvc	2.6 m
Wooden door & frame	1 No. (1.8 m x 0.7 m)
Timber for roof (50x75 mm)	2.6 m
Nails, wire, etc.	
Squatting pan	Not required

c) Squatting slab (See Fig.16)

Note: Modified from design by Sarvodaya RTS Kandy.



VENTILATED IMPROVED PIT LATRINE

Direct Water-Sealed Latrine - Description (see also Section 3.3)

The pit lining is built in stone masonry or brick with clay or cement, the squatting slab in reinforced concrete and the superstructure with mud bricks built with clay or alternative superstructure as required; the roof is made with GI sheets or clay tiles, the entrance is a simple wooden door and frame; outside the walls are plastered with 2 coats of spatterdash (1m high), inside with 50 cm high smooth plastering (cement paste). For squatting slab, see Figures 17 or 18.

Material List

a) Pit lining (0.6 m deep)

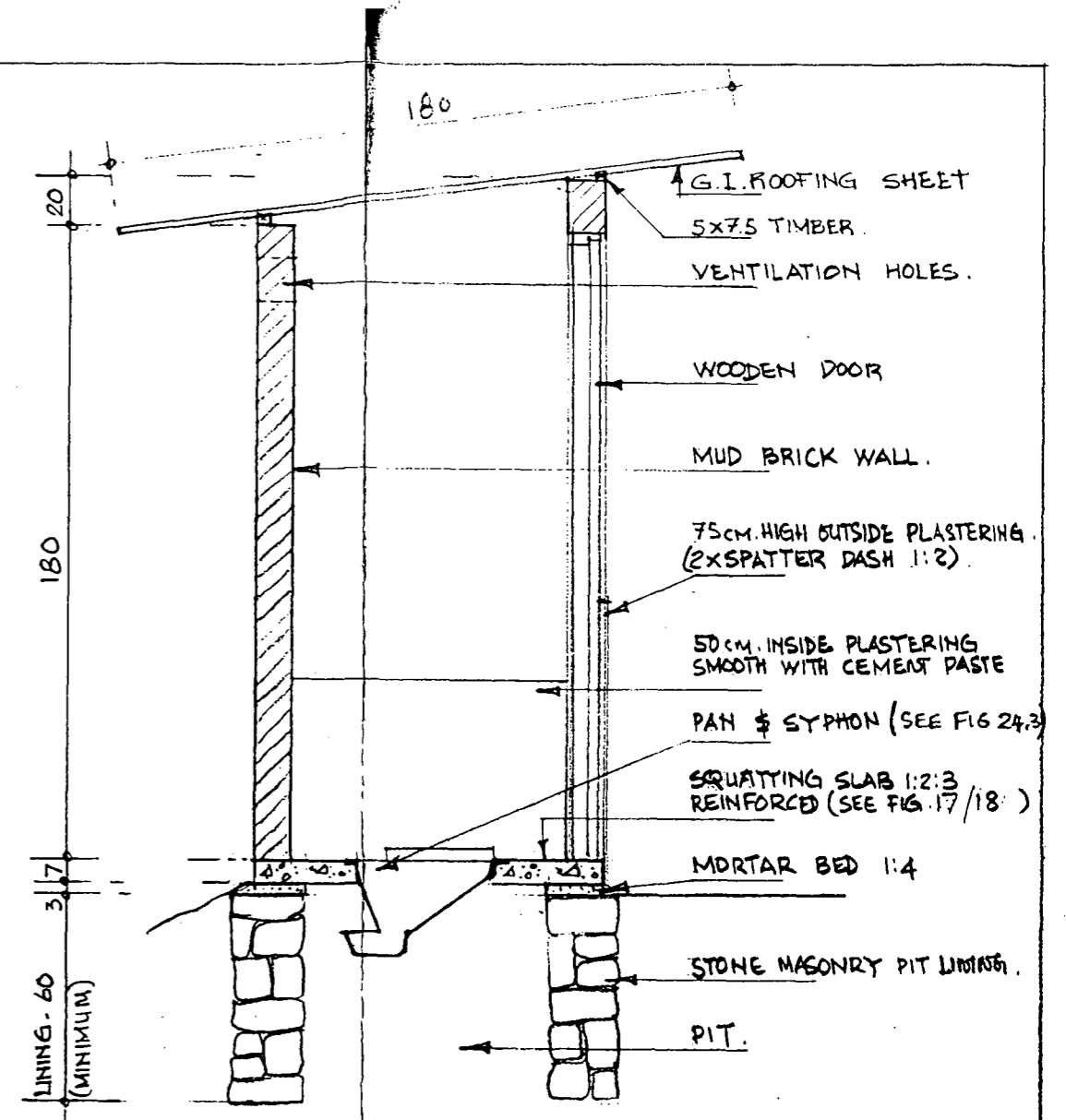
Large stones	0.36 m <sup>3</sup> (13 ft <sup>3</sup> )
Sand	0.16 m <sup>3</sup> (6 ft <sup>3</sup> )
Cement	1 bag

b) House

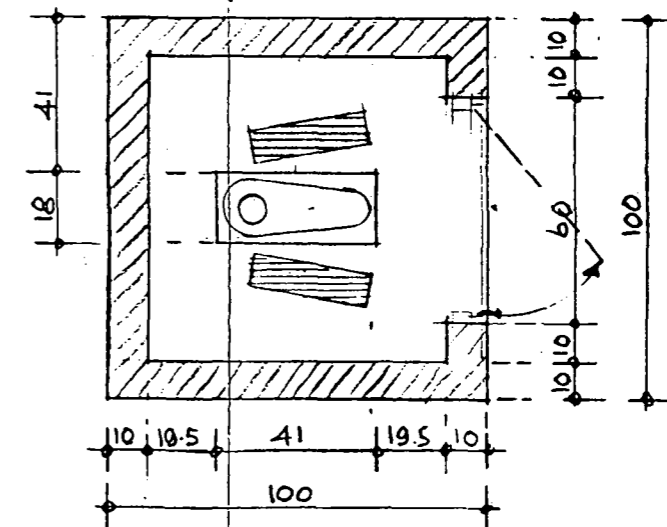
Mud bricks (standard)	380 No.
Sand	0.19 m <sup>3</sup> (7 ft <sup>3</sup> )
Cement	1 bag
Roof - GI sheets, 32g (180 cm long)	2 1/2 pieces
Wooden door and frame	1 No. (1.8 m x 0.6 m)
Timber for roof (50x75 mm)	2.6 m
Squatting pan, with syphon	1 No.
Nails, wire, etc.	

c) Squatting slab (see Fig.17 /18)

Note: Modified from design by Sarvodaya RTS, Kandy.



SECTION A-A  
(ALL DIMENSIONS IN CM)



PLAN.

DIRECT WATER SEALED.  
(DWS) LATRINE

SCALE 1:20

DWN: J.X.P

FIGURE - 4.

Offset Water-Sealed Latrine - Description (see also Section 3.4)

The foundation is built with stone masonry and clay or cement, the floor around the squatting pan and the syphon with lean concrete, top smoothed with cement mortar 1:3 and cement paste. The roof is made with G.I. sheets, or clay tiles, the entrance is a simple wooden door and frame, the walls of the superstructure are built with mud bricks and clay or alternative superstructure as required. Outside, up to 1m, the walls will be plastered with 2 coats of spatterdash, inside up to 50 cm with smooth plastering with cement paste. The pipe line to the soak away is a 75mm PVC pipe.

Material List

a) Pit lining

Large stones/rubble	0.43 m <sup>3</sup> (15 ft <sup>3</sup> )
Sand	0.19 m <sup>3</sup> (7 ft <sup>3</sup> )
Cement	1 bag

b) Latrine foundation

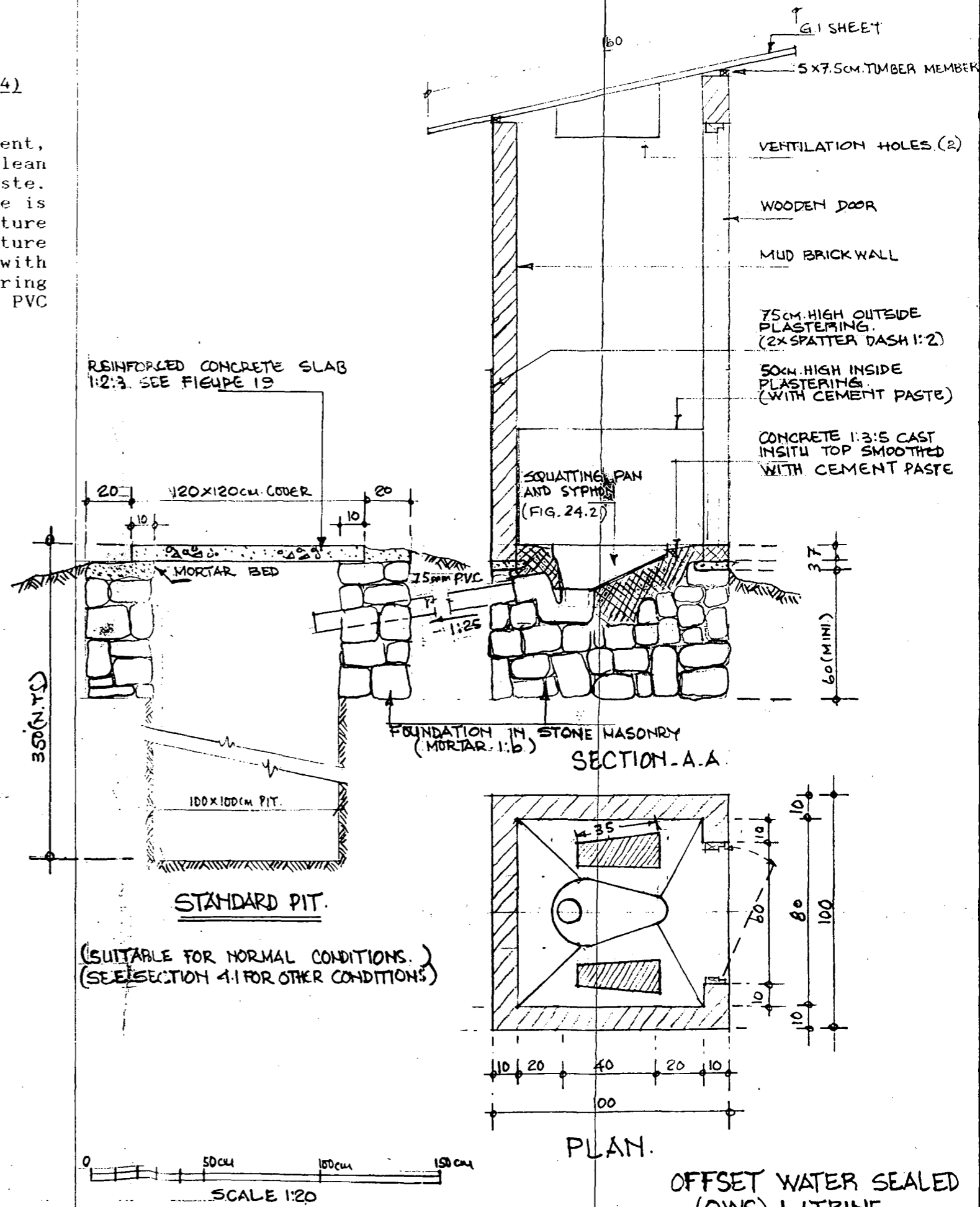
Rubble/stone	0.66 m <sup>3</sup>
Sand	0.45 m <sup>3</sup>
Gravel	0.28 m <sup>3</sup>
Cement	2.8 bags
75 mm PVC pipe	4.0 m

c) Latrine House

Mud bricks (standard)	380 No.
Sand	0.19 m <sup>3</sup> (7 ft <sup>3</sup> )
Cement	1 bag
Roof - GI sheets, 32g. (180 cm long)	2 1/2 pieces
Wooden door and frame	1 No. (1.8 m x 0.6 m)
Timber for roof (50x75 mm)	2.6 m
Squatting pan with syphon	1 No.
Nails, wire, etc.	

d) Pit cover slab (see Fig. 19)

Note: Modified from design by Sarvodaya RTS, Kandy.



OFFSET WATER SEALED (OWS) LATRINE.

DWN: J.X.P. FIGURE - 5.

Pre-School Latrine - Description (see also Section 3.5)

The pit lining is built in stone masonry with clay, or cement, the squatting slab is reinforced concrete and the privacy wall, if desired with mud bricks built with clay or alternative screen, as required. For squatting slab, see Figure 20.

Material List

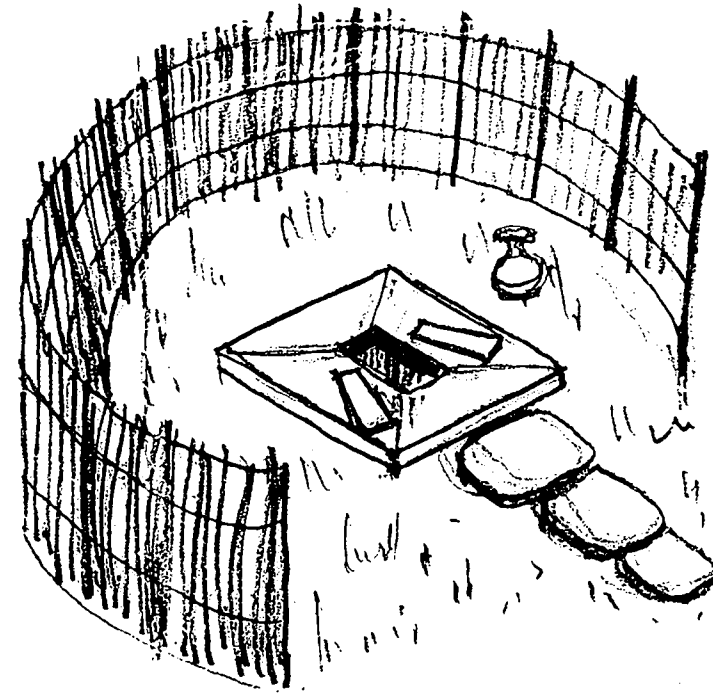
a) Latrine base/pit lining

Large stones/rubble	0.11 m <sup>3</sup> (4 ft <sup>3</sup> )
Sand	0.05 m <sup>3</sup> (2 ft <sup>3</sup> )
Cement	0.3 bag
Pre-school squatting pan with syphon	1 No.

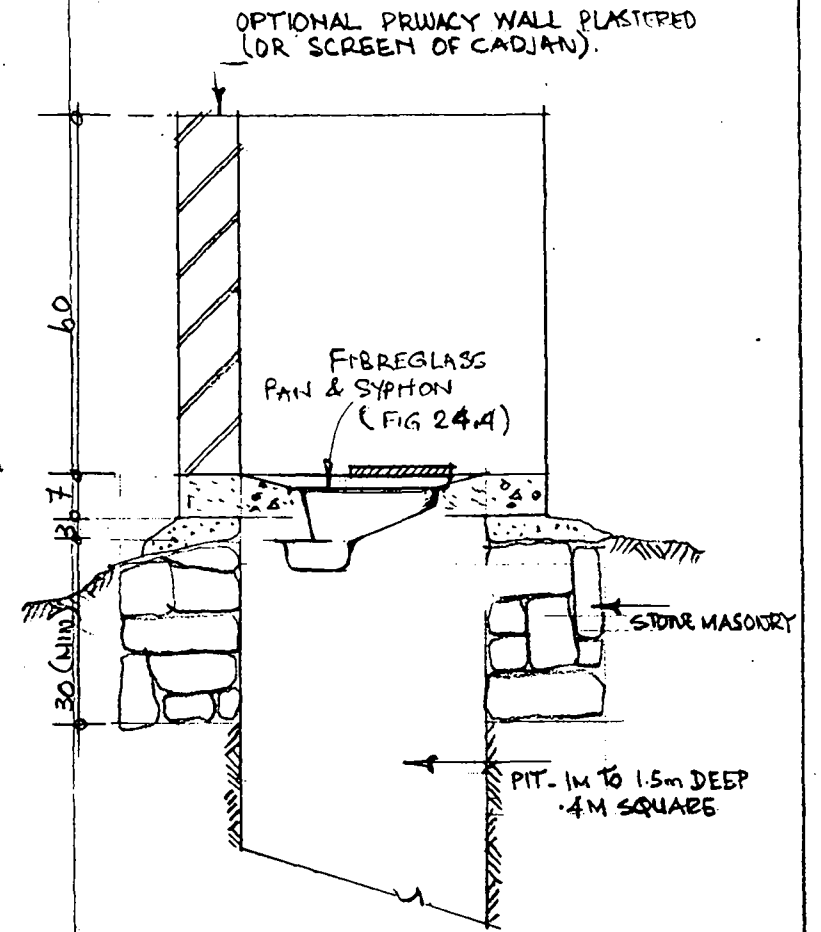
b) Walls

Bricks	100 No.
Sand	0.05 m <sup>3</sup> (2 ft <sup>3</sup> )
Cement	0.2 bag

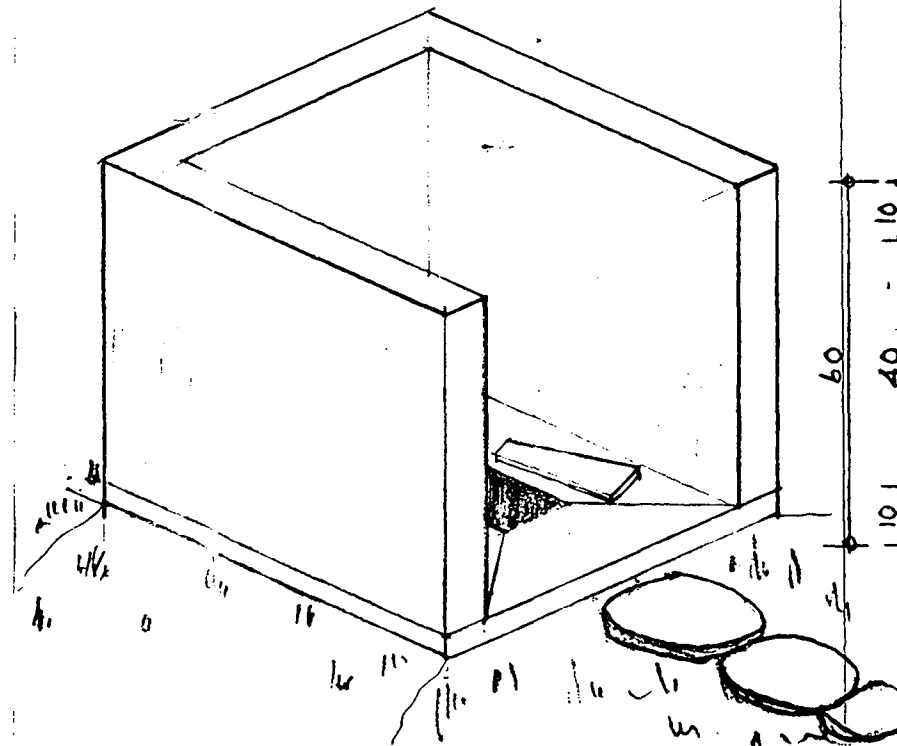
c) Squatting slab (see Fig 20)



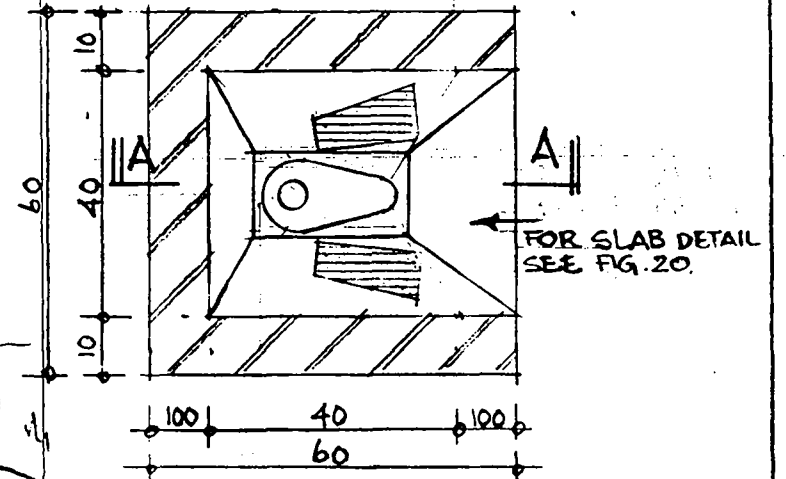
FENCED LATRINE.



SECTION-A.A.

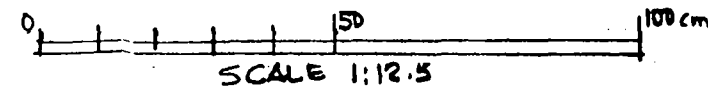


VIEW AT WALLED LATRINE



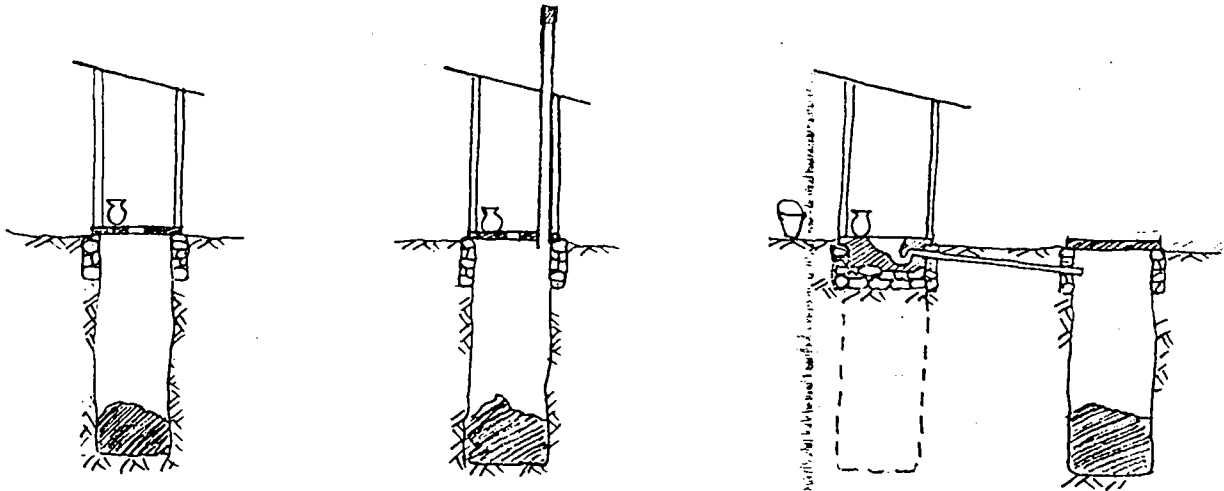
PLAN.

PRE-SCHOOL LATRINE.

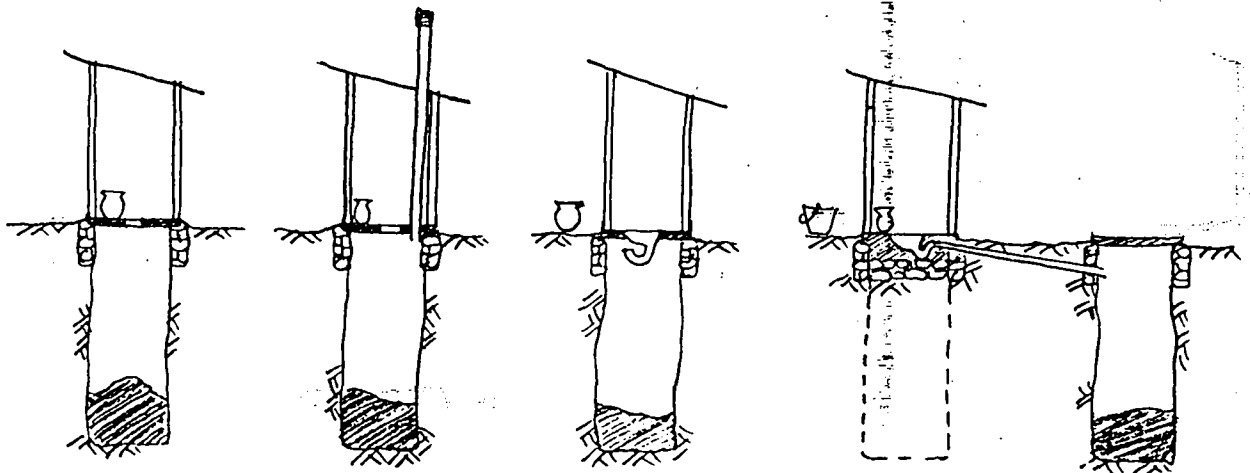


### 3.6 Upgrading and Options

As families become familiar with using latrines and better understand their benefits they may want to improve or upgrade their latrine. The most common upgrading and options are illustrated in Figures 7 and 8.

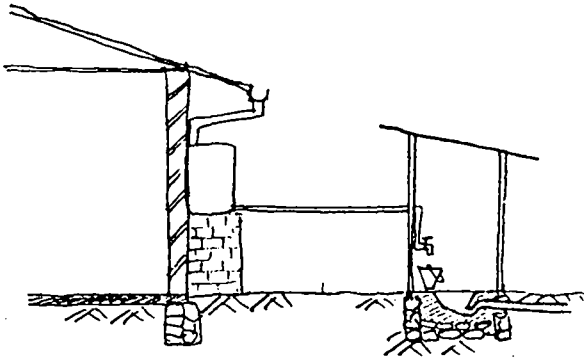


1. Simple pit latrine --> 2. VIP Latrine --> 3. Offset Water-sealed Latrine

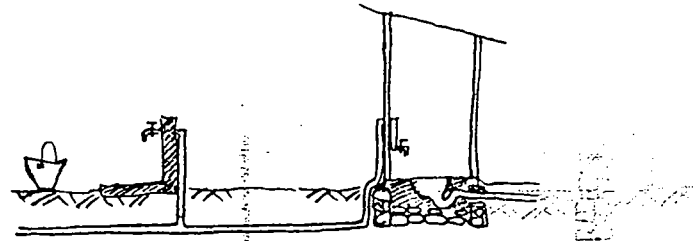


1. Simple pit latrine --> 2. VIP Latrine --> 3. Direct water sealed latrine --> 4. Offset water sealed latrine

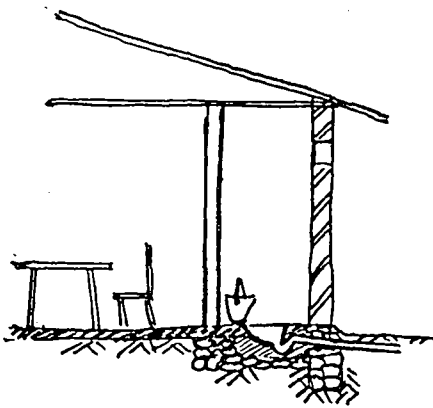
Latrine Upgrading  
Figure 7



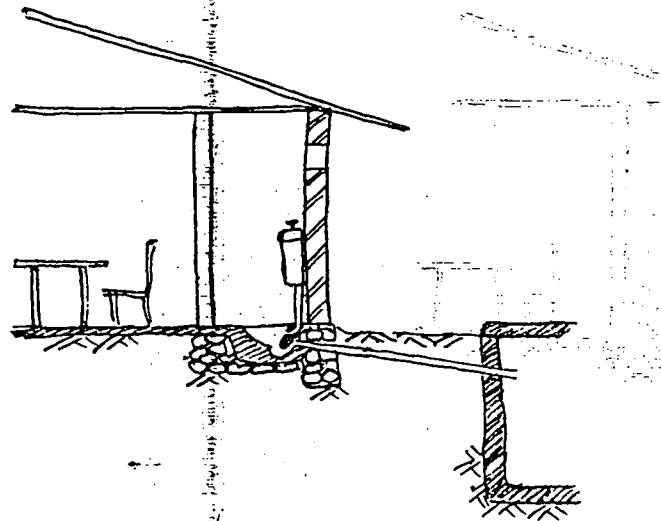
Water supplied by rain water collection system



Piped water supply



Latrine in main house with offset pit



Latrine in house with cistern flush and septic tank

Latrine Options

Figure 8

#### 4. CONSTRUCTION DETAILS

##### 4.1 Pits and Soakaways

###### a) Pits in normal ground

The normal VIP type dry pit or WS type soakway pit should be 90 cm by 90 cm by 350 cm deep (3 feet by 3 feet by 11.5 feet).

The deeper the pit, the longer it will last. The top should not be more than 90 cm or the concrete slab will be too heavy and expensive. The top 60 cm should be lined with stone masonry, or brickwork in mortar or concrete to provide a solid foundation for the slab and superstructure. (Figure 9)

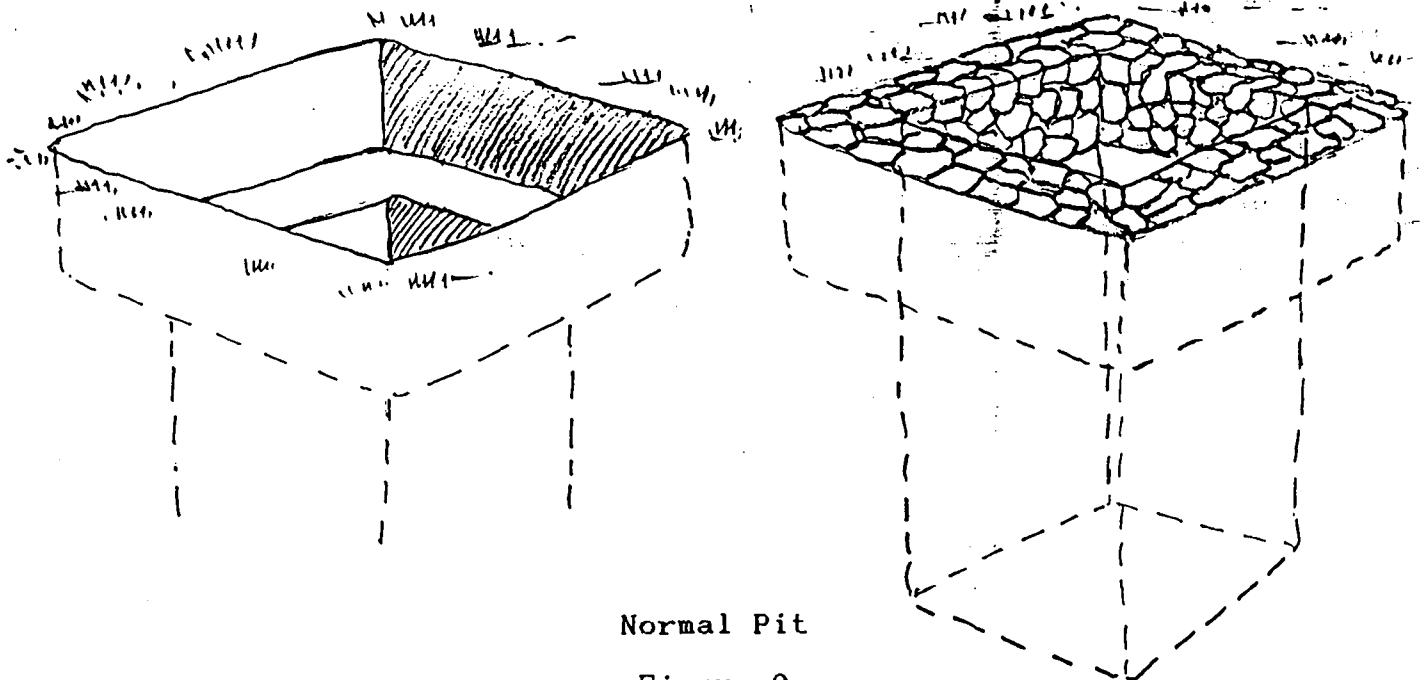
There should be at least 2 labourers to dig the pit, and proper safety precautions must be taken. The pit should be covered or fenced off during construction.

Pit life may be tentatively estimated from the following formula:

$$\text{For VIP type: } Y = \frac{V}{0.6P}$$

$$\text{For WS type: } Y = \frac{V}{0.4P}$$

Where Y = pit life in years, P = number of persons using latrine, V = pit volume in m<sup>3</sup>.



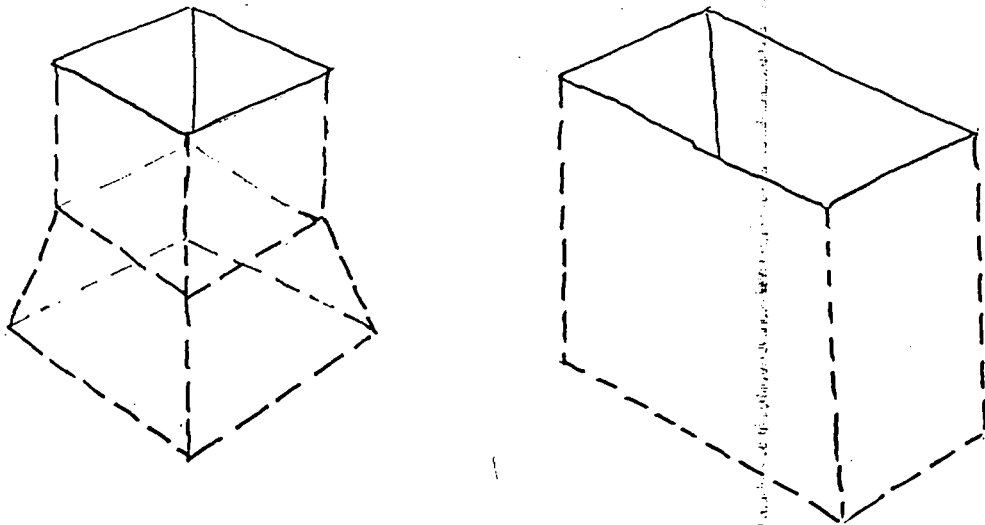
Normal Pit

Figure 9



b) Pits in hard ground

If the soil is too hard or rocky to dig deep, the pit may be made larger at the bottom or extended on one side as shown, to increase the volume. The top 60 cm of the pit should be lined. Note that for a water-sealed latrine the soil must be permeable, or the pit will fill too quickly. (Figure 10)

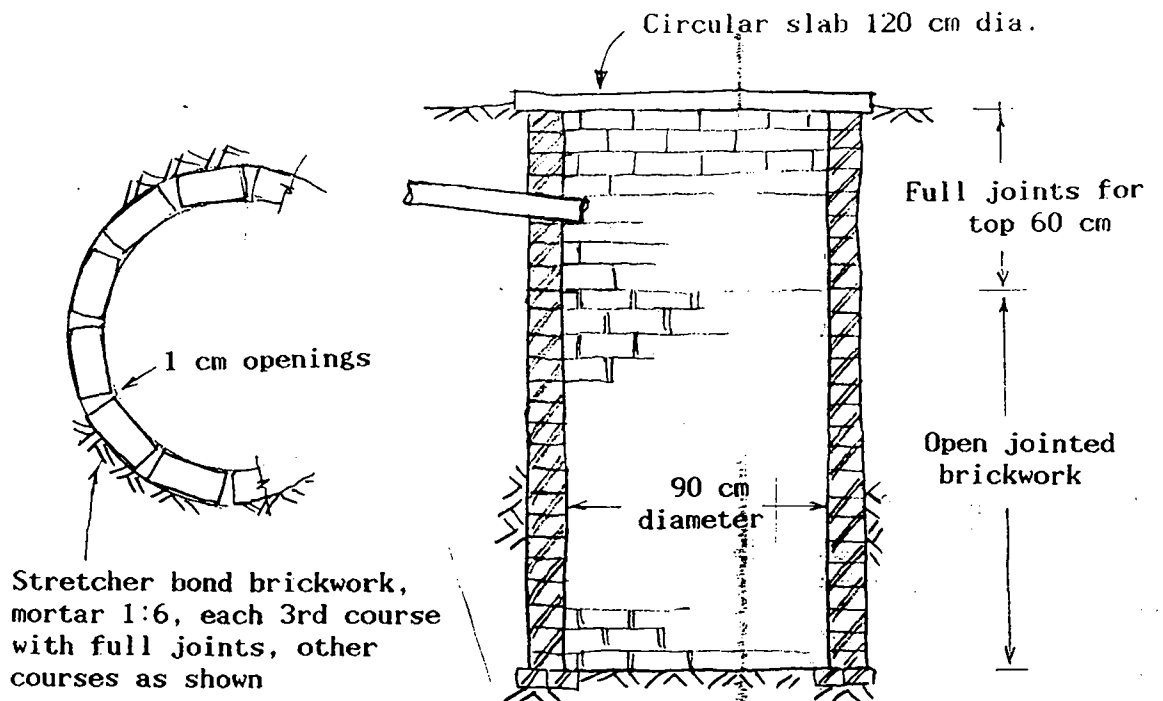


Enlarged Pits

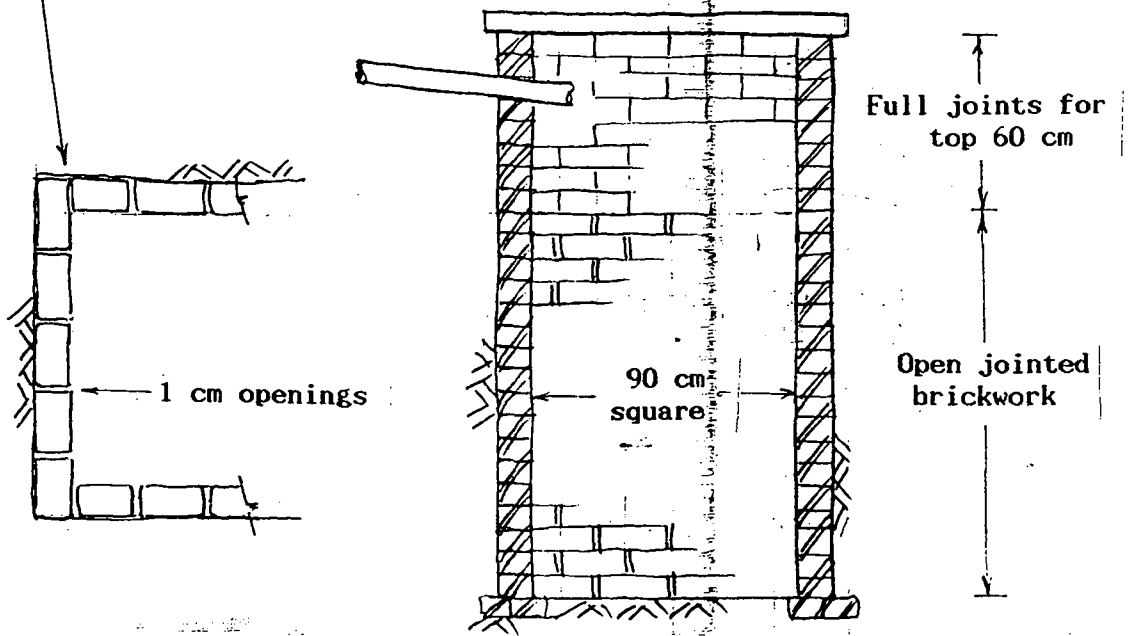
Figure 10

c) Pits in soft or sandy soil

The complete pit should be lined if it is at all likely to cave in due to soft ground. Lining may be of burned bricks set in mortar, with openings as shown. Alternatively, concrete blocks, stone masonry or porous concrete filter rings may be used. Wood or bamboo linings may also be used, but cannot be expected to last as long as a brick lining.



Circular Soak-away Pit



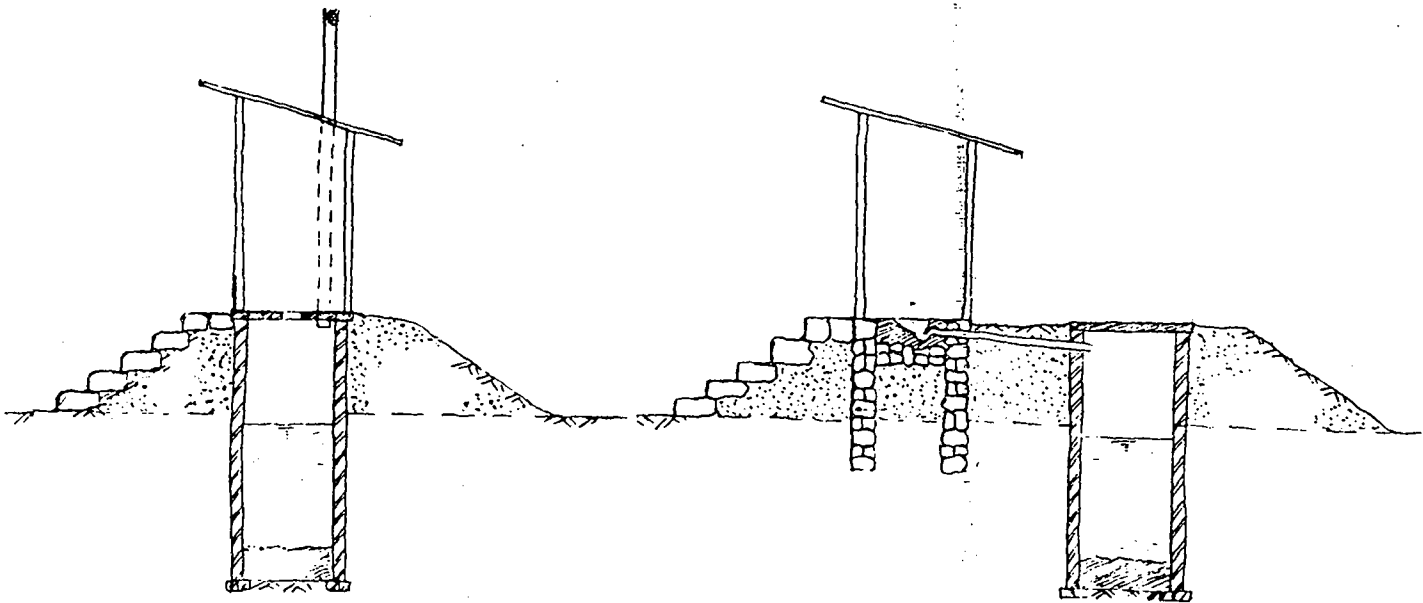
Square Soak-away Pit

Pit Linings  
Figure 11

d) Pits in water logged ground

This situation is best avoided and another location should be looked for. If, however, there is no alternative, and shallow wells are not being used in the area, some problems have to be dealt with:

- o it may be difficult to dig the pit deeply, particularly in soft ground; a pump may be necessary to remove water from the excavation; if necessary, enlarge the pit as shown in Figure 10.
- o the pit should be lined, as shown in Figure 11.
- o the distance between the highest ground water or flood level and squatting slab (VIP type) should be at least 1 metre; it may be necessary to raise the latrine floor; the WS type must also be constructed above flood level (see Figure 12).

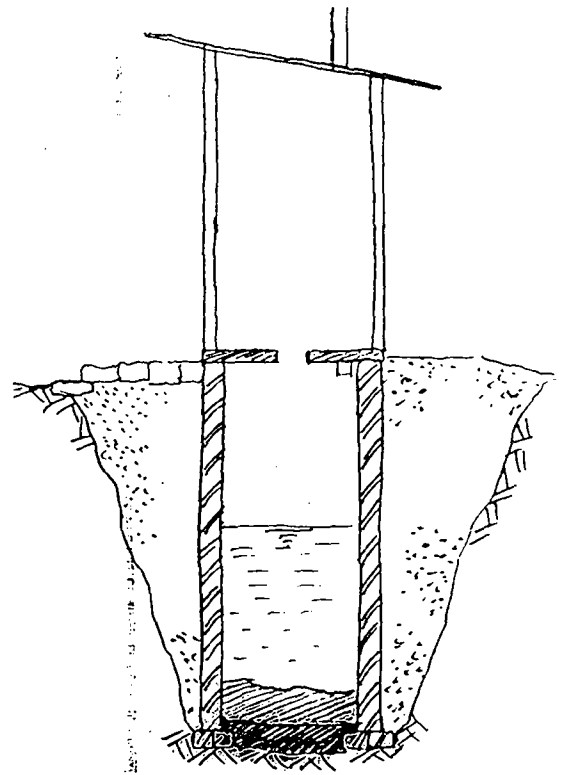


Raised Latrine

Figure 12

e) Pits in loose soil

In loose soil, if the pit excavation will not stand up, the space between the lining and excavation must be back-filled with soil or fine sand, and the bottom of the pit sealed with a clay layer or polyethelene sheet



Pit in Loose Soil  
Figure 13

4.2 Construction of Slabs

The 5 common types of slabs are shown in Figures 16 to 20.

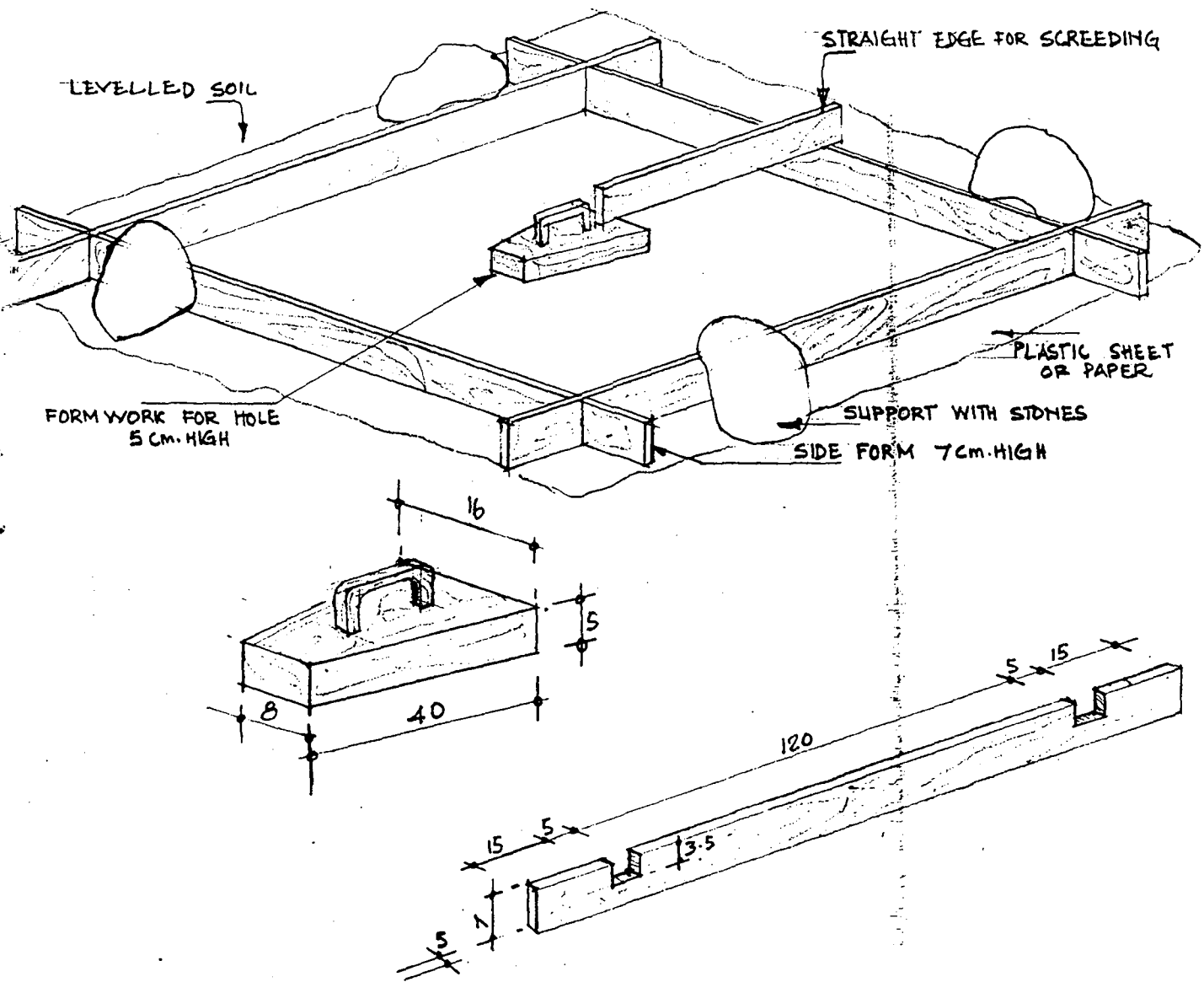
Adopt the following basic procedure:

- a) Prepare the casting surface, on firm level ground or concrete floor; cover the surface with polyethelene sheet or wet cement bag paper.
- b) Prepare the formwork required (see Figure 14).
- c) Prepare the reinforcement required.
- d) Mix stiff plastic concrete in ratio 1:2:3 (cement:sand:12 cm crushed stone or gravel)

In actual terms the mix is:

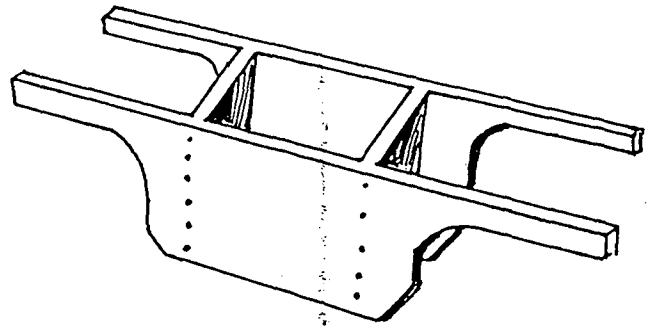
- ° One 50 kg bag of cement ( $1 \frac{1}{4} \text{ ft}^3$ );
- °  $0.07\text{m}^3$  (70 litres) dry sand ( $2 \frac{1}{2} \text{ ft}^3$ );
- °  $0.105\text{m}^3$  (105 litres) gravel/crushed stone ( $3 \frac{3}{4} \text{ ft}^3$ ).

Note that when using wet sand (which is bulkier than dry sand) the volume should be increased by about 25%. The total volume of the constituents above is  $0.21 \text{ m}^3$  ( $7.5 \text{ ft}^3$ ) which is equivalent to about  $0.14\text{m}^3$  ( $5 \text{ ft}^3$ ) of concrete in place.



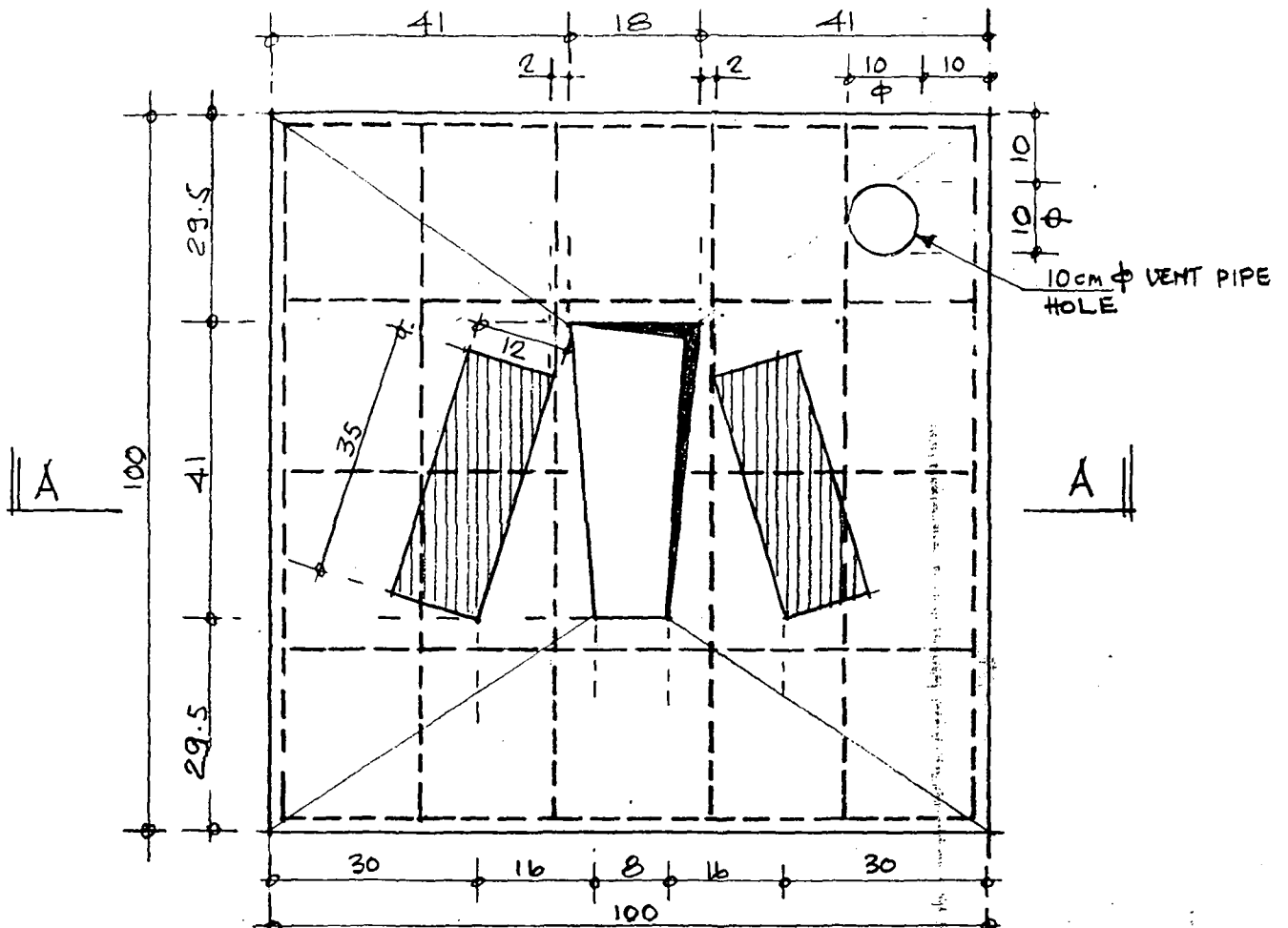
Typical Formwork for Slabs  
Figure 14

It is convenient to use a gauge box for measuring the volume of materials - a suitable size would be 28 litres ( $1\text{ft}^3$ ). Always use clean water, and clean sand and gravel.

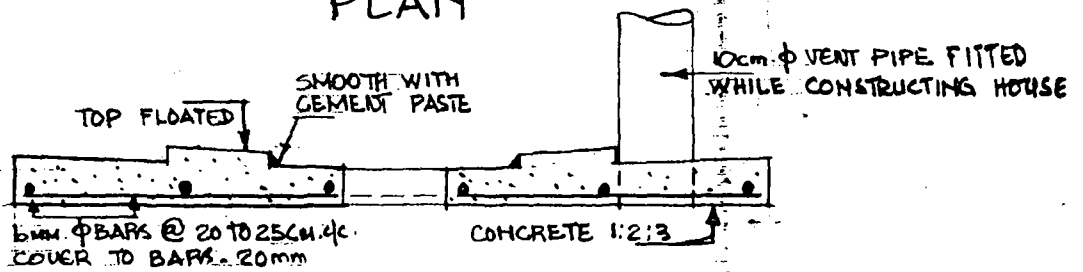


Gauge Box  
Figure 15

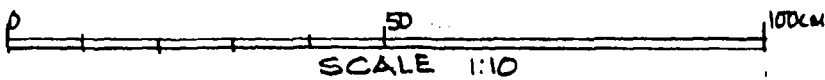
- e) Pour about 2 cm of concrete over the whole area of slab and tamp it.
- f) Place reinforcement in correct place.
- g) Fill the form with concrete and compact well; use fine 1:3 cement mortar for edges around the squatting hole.
- h) Screed the top of the slab according to the design and float the top, using 1:3 cement mortar.
- i) Cast the 2 footrests using stiff 1:3 cement mortar.
- j) Smooth the top of the slab (except the footrests) with a trowel.
- k) As soon as the surface is hardening, cover the slab with wet cadjan or matting and keep it wet for at least 7 days; the formwork can be removed after 1 day; after 7 days the slab may be placed in position.



PLAN



SECTION - AA



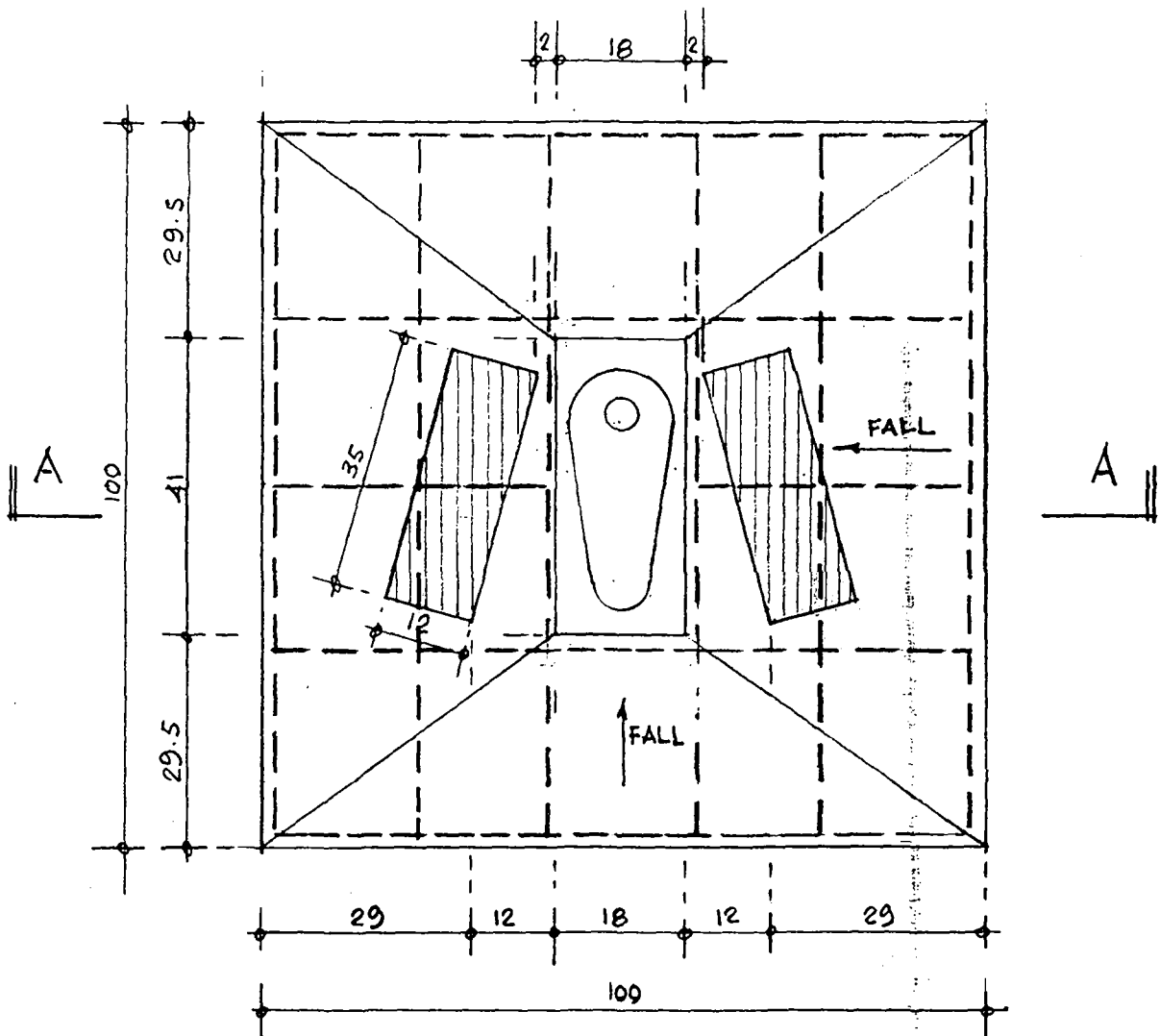
MATERIAL LIST

CEMENT	-	1/2 BAG.
SAND	-	.033 m <sup>3</sup> - 1.2 ft <sup>3</sup>
GRAVEL	-	.05 m <sup>3</sup> - 1.8 ft <sup>3</sup>
6mm φ BARS	-	12M - 2.5 kg.
FORMWORK, WIRE, etc.	-	

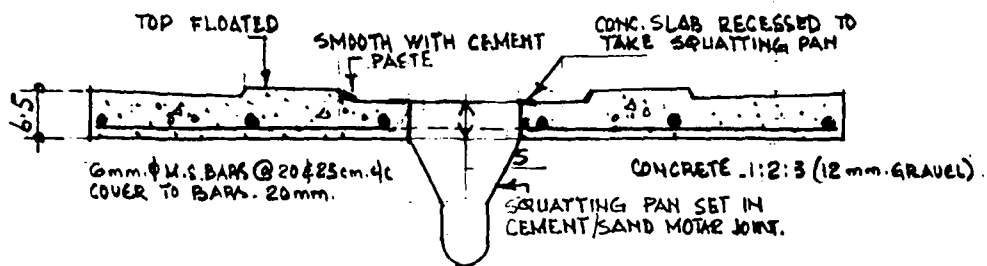
V.I.P. LATRINE SLAB.

NOTE  
MODIFIED FROM DESIGN BY  
SARVODAYA RTS. KANDY.

FIGURE - 16



PLAN.



SECTION-A.A

SCALE - 1:10  
(ALL DIMENSIONS IN CM.)

MATERIAL LIST

CEMENT	- 1/2 BAG.
SAND	- 0.33 m <sup>3</sup> - 1.12 FT <sup>3</sup>
GRAVEL	- 0.50 m <sup>3</sup> - 1.8 FT <sup>3</sup>
6mm φ BARS	- 12M - 2.5 kg.
FORMWORK, WIRE, ETC.	

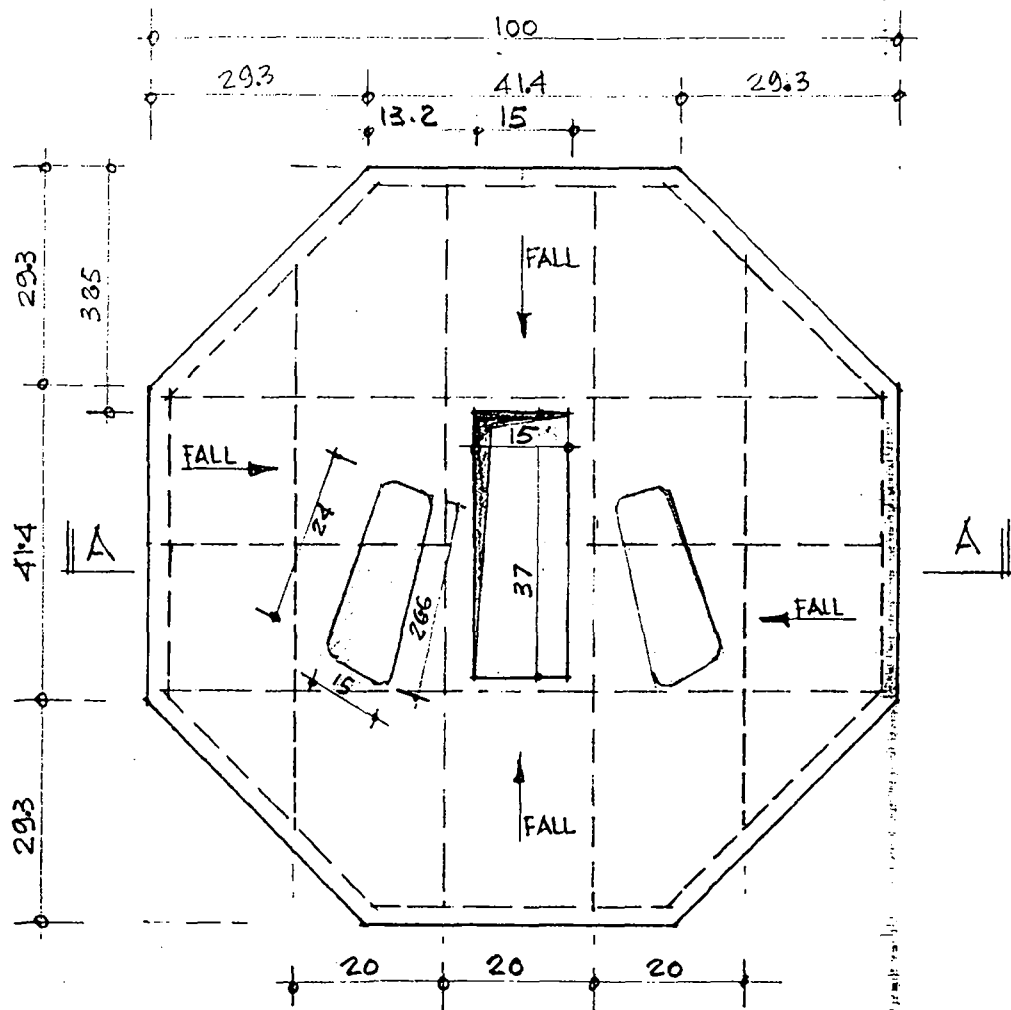
NOTE:

1) MODIFIED FROM DESIGN BY SARVODAYA RTS KANDY.

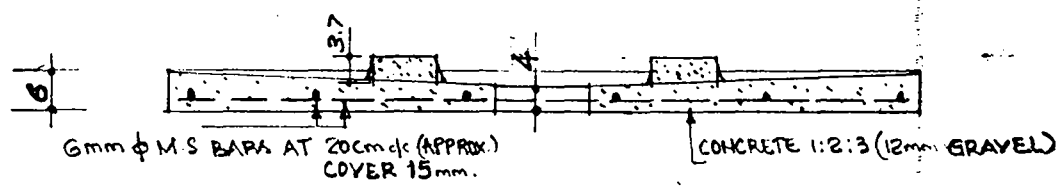
DWS LATRINE SLAB.

FIGURE - 17





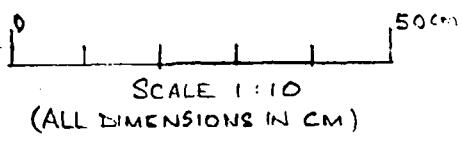
PLAN



SECTION-A.A

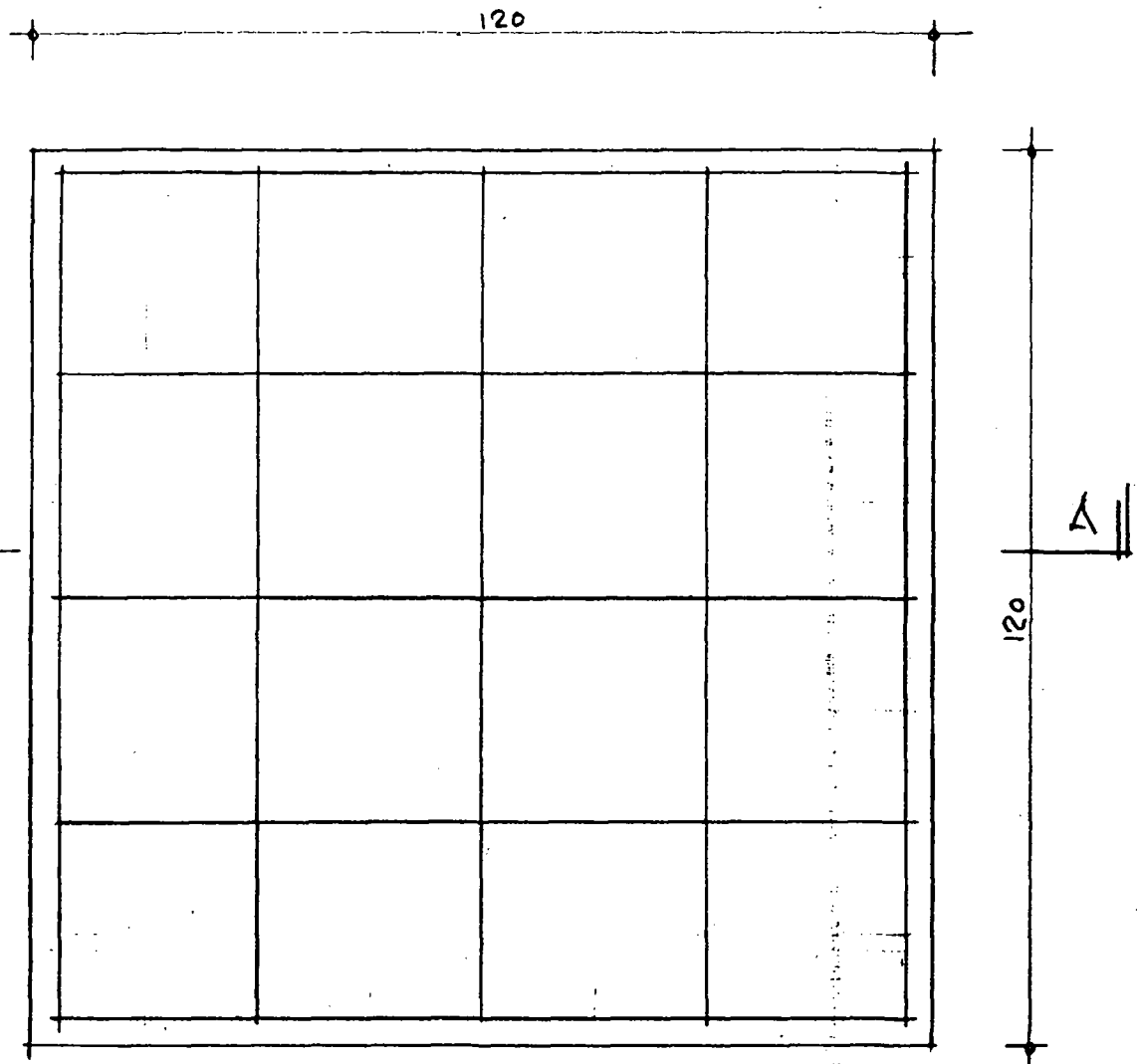
MATERIAL LIST.

- CEMENT - 1/3 BAG.
- SAND - 0.25 m<sup>3</sup> (0.9 FT<sup>3</sup>)
- GRAVEL - 0.37 m<sup>3</sup> (1.3 FT<sup>3</sup>)
- 6mm  $\phi$  RODS - 10.3 m - (2.3 kg)
- FORMWORK, WIRE Etc.

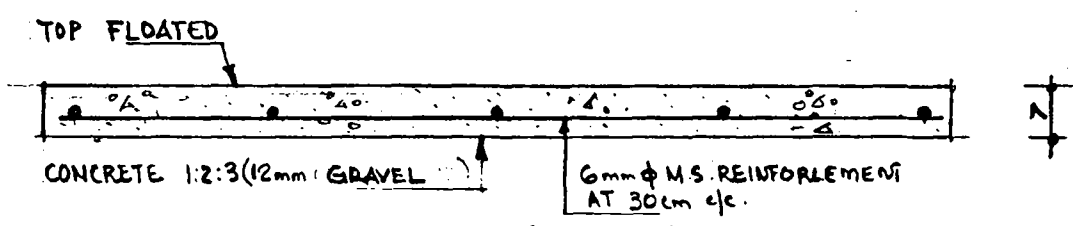


MOH LATRINE SLAB.

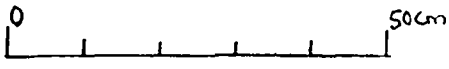
FIGURE 18



PLAN



SECTION. AA



SCALE 1:10  
(ALL DIMENSIONS IN CM)

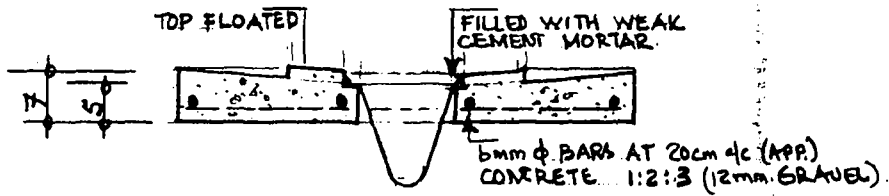
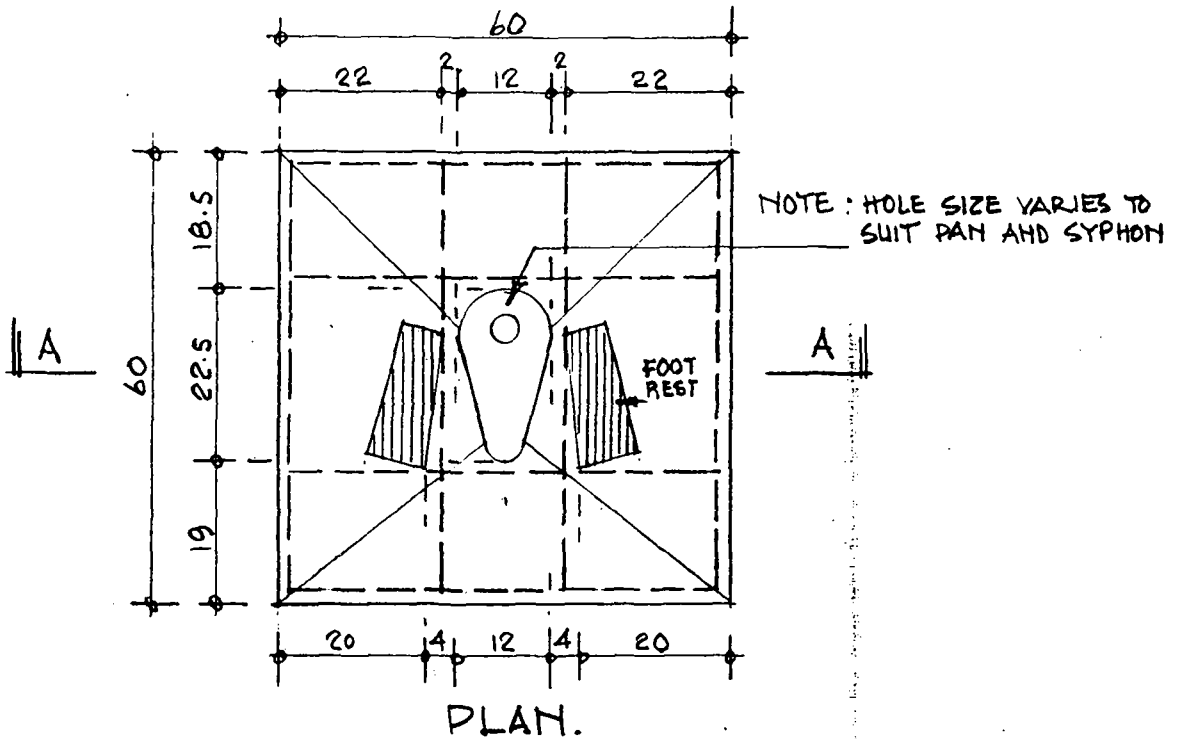
**MATERIAL LIST:**

CEMENT	- 3/4 BAG
SAND	- .055 m <sup>3</sup>
GRAVEL	- .083 m <sup>3</sup>
6mm φ RODS	- 12.8m (2.8kg)
FORMWORK, WIRE Etc.	

ALTERNATIVE SLAB CIRCULAR OF 120cm φ.  
NOTE: BASED ON DESIGN BY SARYODAYA RTS KANDY

SOAK AWAY COVER SLAB.

FIGURE-19



### MATERIAL LIST

- CEMENT - 0.2 BAG.
- SAND - 0.014 m<sup>3</sup> (0.5 FT<sup>3</sup>)
- GRAVEL - 0.021 m<sup>3</sup> (0.74 FT<sup>3</sup>)
- 6mm  $\phi$  RODS - 4.8m (1.1 Kg).
- FORMWORK, WIRE, ETC.

PRE-SCHOOL LATRINE SLAB.

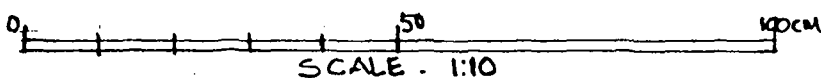
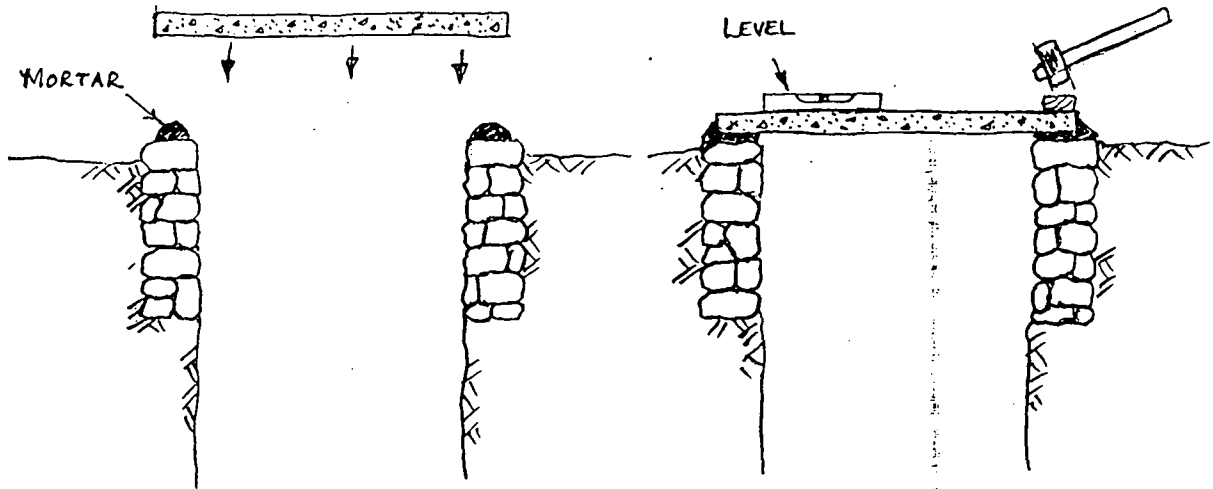


FIGURE 20

#### 4.3 Placing of Slabs

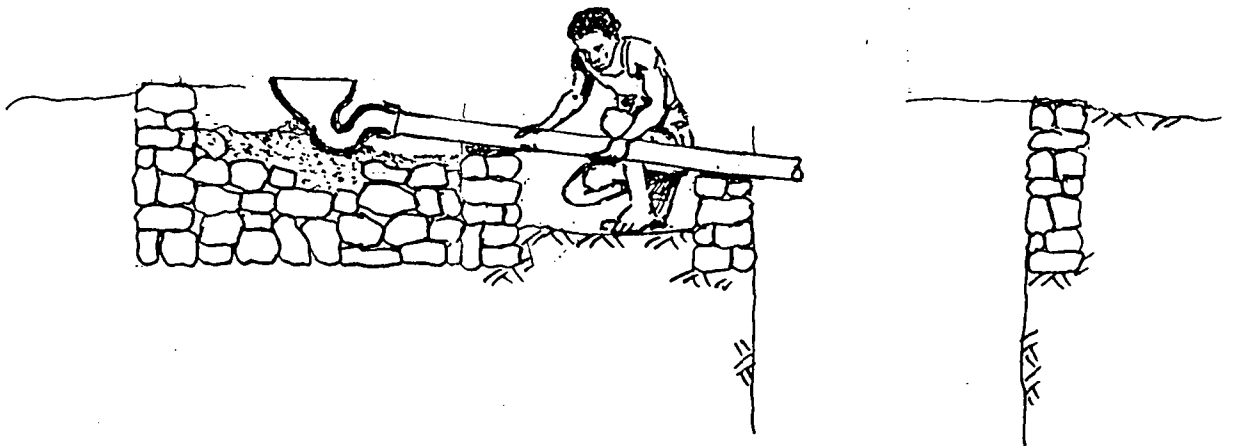
The slabs should be set in place on stiff cement mortar and carefully knocked into place, as shown.



Placing Slabs  
Figure 21

#### 4.4 Placing Pan, Syphon and Drain

The pan and syphon should be fixed in place and set in lean concrete (1:3:5 mix) and the floor around the pan carefully screeded and smoothed with 1:3 cement mortar.



Placing Drain  
Figure 22

Lay the drain pipe connecting the syphon to the pit. The fall on the pipe should be at least 1 in 25. Cement the pipe through the pit walls and backfill around the pipe.

#### 4.5 Latrine House

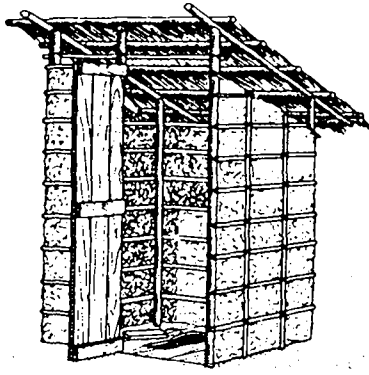
The type of latrine house is left up to the householder. The type shown in Figures 3 to 5 is a permanent structure, but if this is not in keeping with the style of the main house or the available budget, any alternative building style may be used that will serve to provide the necessary privacy. Some typical examples of different styles are shown in Figure 23.

#### 4.6 Types of Pans and Syphons Available

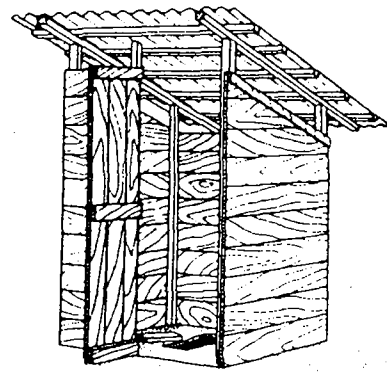
The most common pans and syphons being used are the ceramic (used for OWS type) and fibreglass. The fibreglass DWS type has been developed for the DANIDA project in Matale/Polonnaruwa Districts and about 20,000 have been installed, to date, successfully. A smaller version is being developed through the USAID Project for use in pre-school latrines. Sketches of the different types available, with their availability and cost, are given in Figures 24.1 to 24.4.

#### 4.7 Materials and Estimating

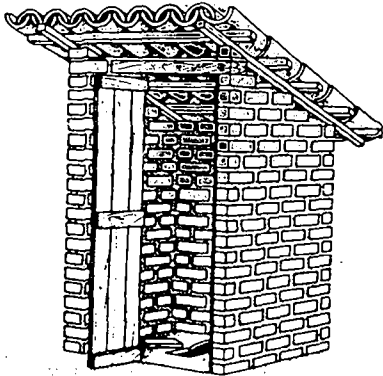
Prior to construction of the latrine, a location plan (see Figure 2) and an estimate should be prepared by the householder with assistance as required. A suitable format for the estimate is shown in Figure 25.



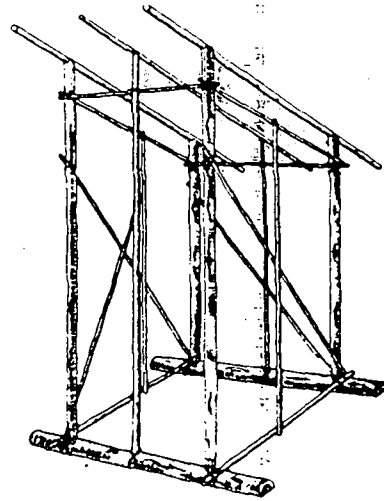
Mud and wattle walls and palm-thatch roof



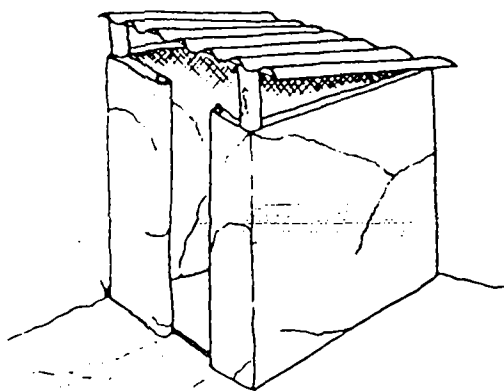
Timber walls and corrugated iron or asbestos-cement roof



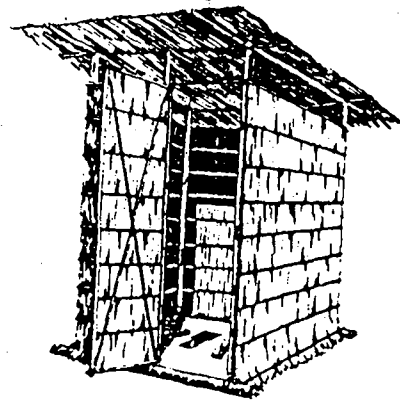
Brick and tile



Rough-cut tree limbs and logs



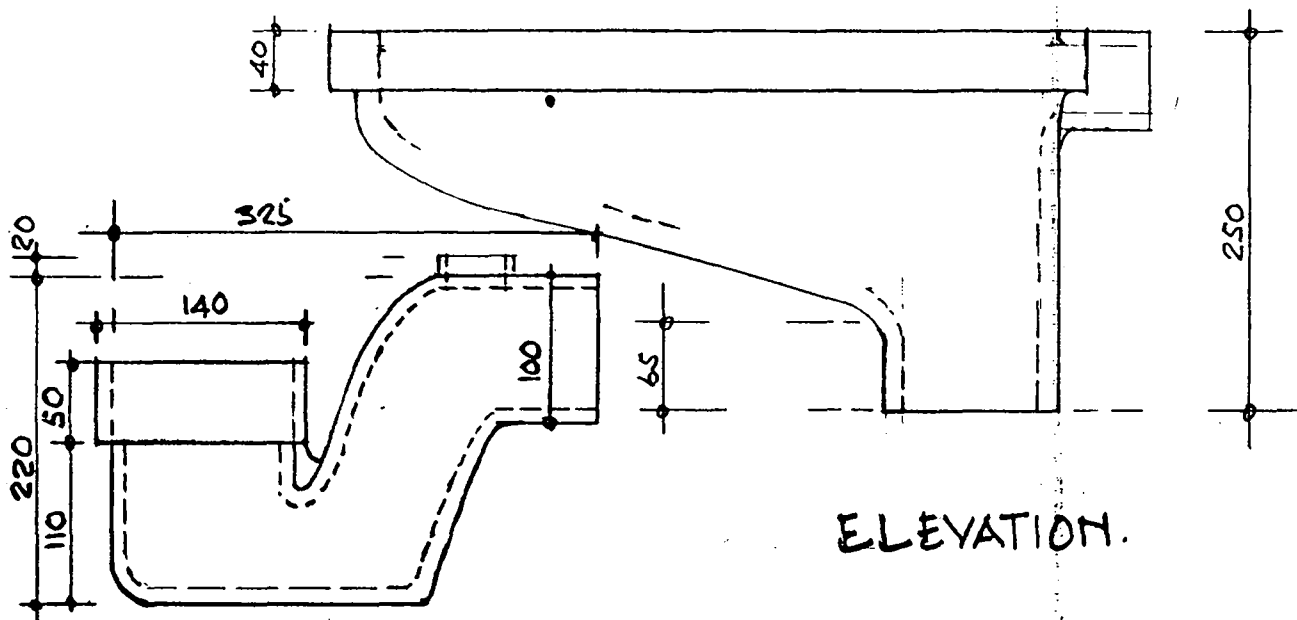
Mud brick walls and plaster



Cadjan

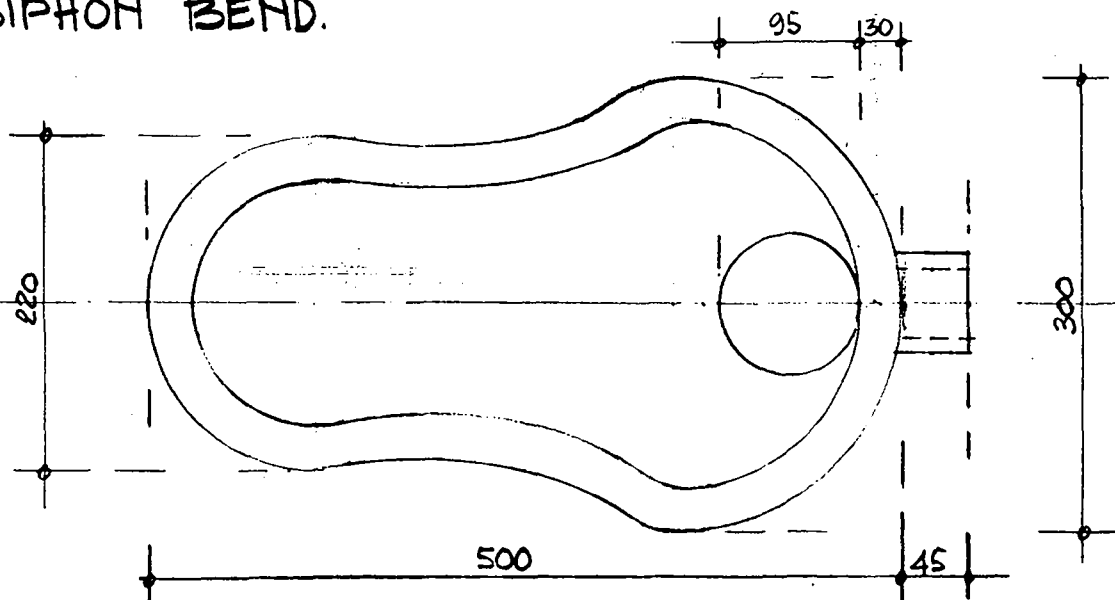
Alternative House Styles  
Figure 23

APPLICATION : FLUSH TYPE TOILETS/OWS LATRINES WITH SEPTIC TANK OR SEWERAGE.  
 AVAILABLE FROM: CERAMICS CORPORATION  
 COST : RS 290/-



ELEVATION.

SIPHON BEND.

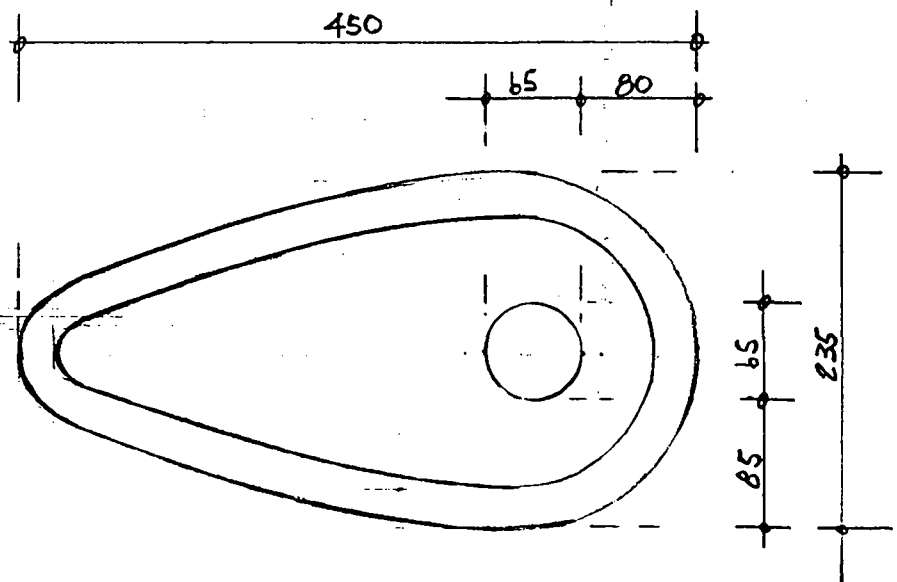
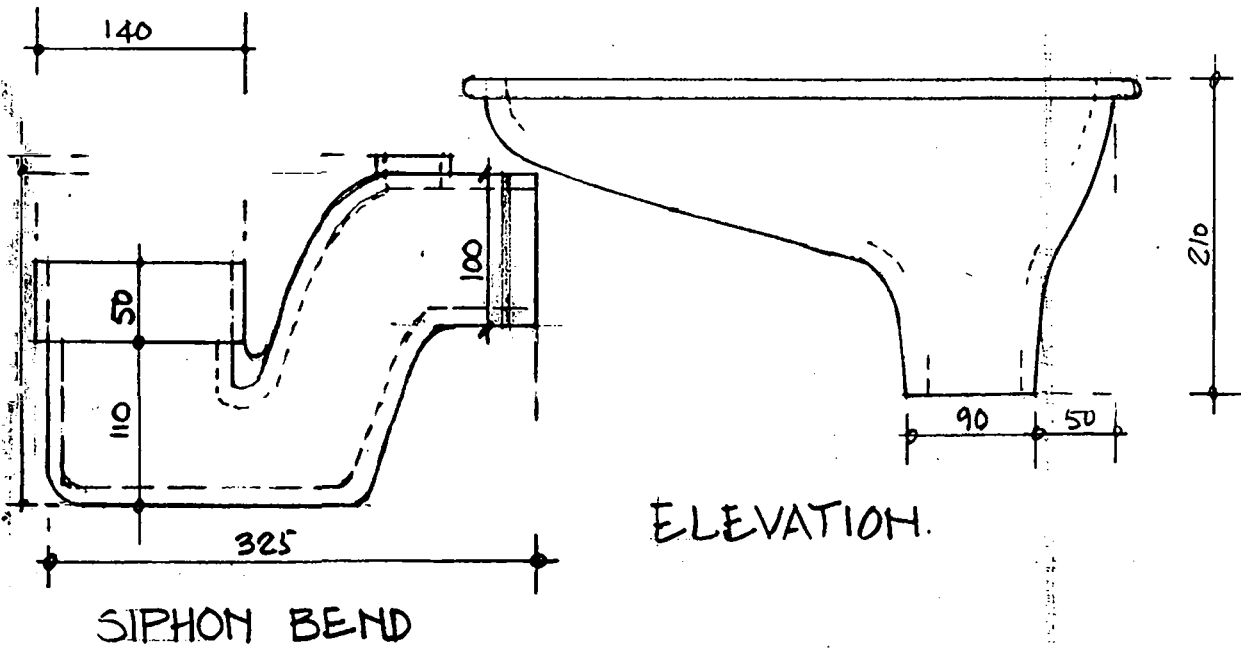


PLAN SCALE 1:5

CERAMIC PAN - LARGE SIZE

FIGURE.24.1

APPLICATION : OWS TYPE LATRINES.  
 AVAILABLE FROM: CERAMICS CORPORATION  
 COST : RS. 220/-



CERAMIC PAN, MEDIUM SIZE

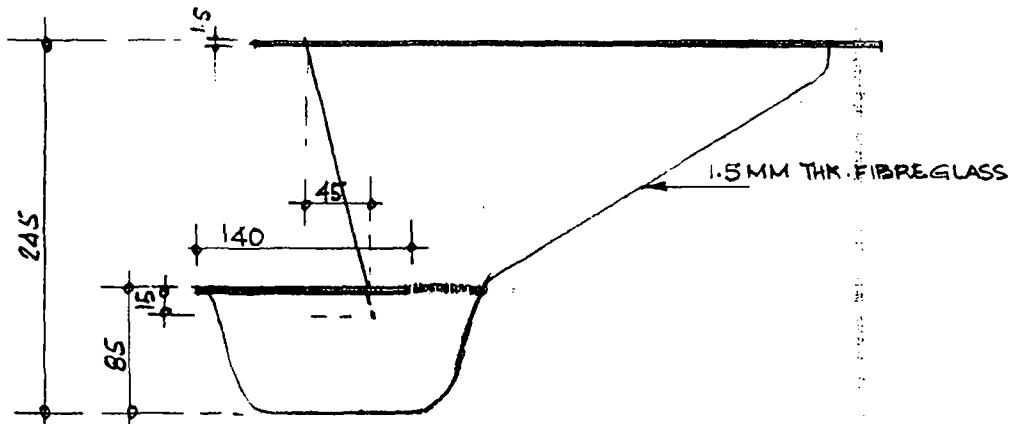
FIGURE 242.



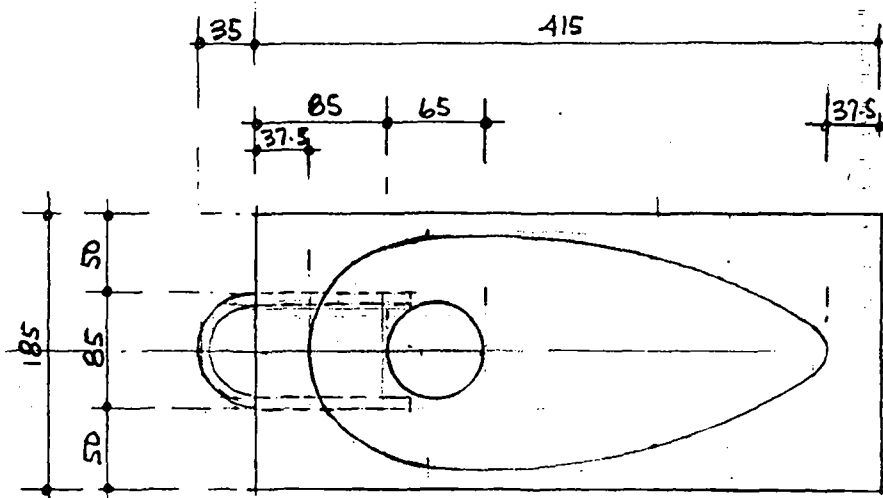
APPLICATION : DWS TYPE LATRINES.

AVAILABLE FROM : FIBRE GLASS INDUSTRIES, MATALE RD.  
KATUGASTOTA.

COST : RS 90/- (APPROX)



ELEVATION: SCALE 1:5



PLAN. SCALE 1:5

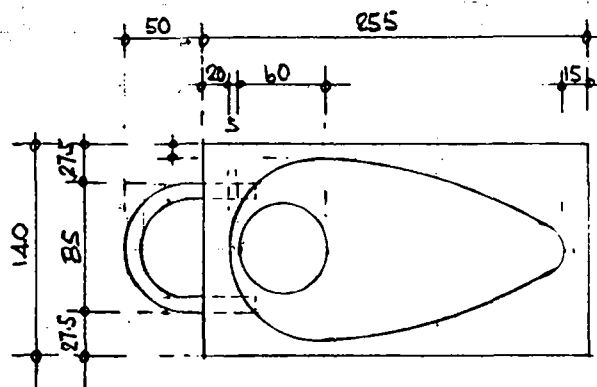
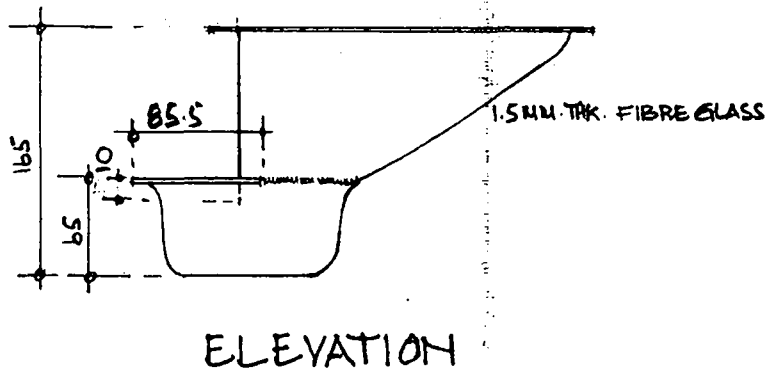
FIBREGLASS PAN - MEDIUM SIZE

FIGURE 2A.3

APPLICATION : PRE SCHOOL LATRINES.

AVAILABLE FROM : FIBRE GLASS INDUSTRIES, MATALE RD.  
KATUGASTOTA.

COST : Rs 70/- (APPROX.)



FIBRE GLASS PAN. SMALL SIZE (PRE. SCHOOL)

FIGURE 24.4

Item	Description	Qty	Unit	Rate	Amount
	<u>Labour</u>				
1	Excavation of pit - labour				
2	Lining pit - mason - labourer				
3	Constr. of slab base - mason - labourer				
4	Installing slab - mason - labourer				
5	Constr. of house - mason - carpenter - labourer				
6	Transport of materials - labourer				
	Total, Labour:				
	<u>Materials</u>				
7	Pit lining - bricks - cement - sand				
8	Slab base - stones - cement - sand				
9	Latrine slab (complete)				
10	Wood				
11	Hinges, latches				
12	Galvanized steel sheets				
13	PVC pipe				
14	Nails				
15	Other				
	Total, materials:				
	<u>Tools and Equipment</u>				
16	Rope				
17	Shovel				
18	Ladder				
19	Saw				
20	Bucket				
21	Hammer				
22	Carpenter's square/level				
23	Measuring tape				
24	<del>Trowel</del>				
25	Plumb line				
26	Wheelbarrow				
27	Ox cart				
28	Other				
	Total, tools and equipment				
	Total Project Cost - Labour - Materials - Equipment				
	Total:				

Estimate for Latrine (Format)  
Figure 25

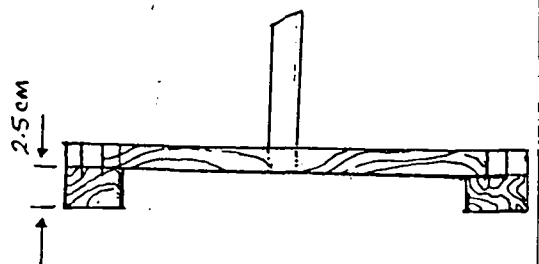
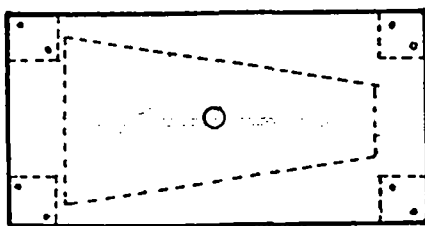
## 5. LATRINE USE AND MAINTENANCE

### 5.1 Surface Drainage

Ensure that there is efficient surface drainage around the latrine to prevent ponding or rainwater entering the pit, and keep the drains clean. Rocks, grass or vegetation placed around the latrine will help prevent erosion.

### 5.2 VIP Type

- a. Wash hands with soap after using the latrine.
- b. After each use, sprinkle a small amount of ash or soil through the hole, to help eliminate odours and prevent fly-breeding.
- c. Every day, wash the latrine floor and the edge of the squatting pan thoroughly. Use disinfectants at least once a week. If not kept clean, the latrine will soon become unpleasant to use and a health risk. Use a toilet brush.
- d. As flies will escape if light falls into the pit through the squatting opening, the inside of the latrine should be kept dark. A wooden cover should be made to prevent light entering the pit, but it must have short legs, as shown, to allow sufficient air flow into the pit and out of the vent.



Squatting Hole Cover  
Figure 26

- e. Do not block vent openings.
- f. Keep vent pipe clear and free of leaves; if the pipe gets blocked the latrine will start to smell.
- g. Maintain the fly screen on top of the vent pipe frequently; a broken screen will allow flies to escape.

### 5.3 DWS and OWS Type

- a. After using the latrine use a bucket of water containing a minimum of 4 litres of water to flush the pan and syphon.
- b. Wash hands with soap after using the latrine.
- c. Every day, wash the latrine floor and the squatting pan thoroughly. If not kept clean, the latrine will soon become unpleasant to use and a health risk. Use a toilet brush.
- d. Before the soakaway pit is full, a second pit should be dug. The cover slab should be moved to the new pit and the first pit filled in and covered with earth.

For direct pit (DWS) type the squatting plate and latrine house will have to be dismantled and moved to the new pit. Before the second pit is filled, the first pit should be emptied. The contents may be used as manure quite safely after 1 or 2 years of storage in the pit.

### 5.4 PS Type

- a. Ensure that children wash hands with soap after using the latrine.
- b. Every day, wash the latrine floor and the edge of the squatting pan thoroughly. If not kept clean, the latrine will soon become unpleasant to use and a health risk. Use a toilet brush.

## ANNEXES

- A. Administrative Aspects
- B. Financial and Other Arrangements
- C. Letter from Ceramics Corporation
- D. Standard Forms
- E. Actual Latrine Costs

## ANNEX A

### ADMINISTRATIVE ASPECTS

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A.2 Collection of Data	1
A.3 Health Education	1
A.4 Training	2
A.5 Health Volunteers	2
A.6 Payments	2
A.7 Procedures for Payments	3
A.8 Monitoring	3
A.9 Coordination with Government Agencies and the NGO Sector	4

## ANNEX A

### ADMINISTRATIVE ASPECTS

#### A.1 PLANNING

- o The Health Sub-Committee at the project area level, headed by the Gramodaya Mandalaya should take responsibility for the planning of the Latrine Construction Programme.

#### A.2 COLLECTION OF DATA

- o At the outset, a latrine survey/community health survey should be undertaken by the Public Health staff/volunteer health workers. The objective of this survey is to assess the requirements of adult and pre-school latrines in the community, with other details of health.
- o Subsequently, a comprehensive community survey should be undertaken to obtain information on community structure, social institutions, voluntary organisations, leadership, infrastructure and services, social welfare aspects, etc. This should serve as a baseline/benchmark study for the project and should be done at the feasibility stage.

#### A.3 HEALTH EDUCATION

- o A continuous ongoing health education (HE) programme should be undertaken systematically in the five sub-project areas by the local field health staff under the guidance of the Health Education Officers.
- o Planning, implementation, monitoring and evaluation of the HE programme should be an integrated one with the Health Education Bureau, the Regional Health Education Unit (of RDHS Office), the Medical Officer of Health and the Community Support and Sanitation Section of NWSDB.
- o A continuous well-planned health education programme should be implemented by the public health field staff (FHW, PHI, PHN Health Education Officers).



#### A.4 TRAINING

- o All appropriate field officers, community leaders, teachers, indigenous medical practitioners, the clergy, and members of Gramodaya Mandalas should be trained as per curricula developed under CSSS sponsorship.

#### A.5 HEALTH VOLUNTEERS

Arrangements should be made to recruit Health Volunteers following Health Ministry criteria. The Health Volunteers will:

- o be trained as per curriculum developed by the CSSS.
- o work under the direction and guidance of the FHW and project staff;
- o carry out community health and sanitation surveys;
- o assist the FHW and the PHI, PHN and project staff in carrying out health education programmes in the community;
- o serve as on-site coordinators of the project.

#### A.6 PAYMENTS OF SUBSIDIES

- o As an inducement and to facilitate the construction of latrines it is essential that beneficiaries should be issued with a medium size squatting pan (as manufactured by the Ceramics Corporation or similar approved type), and other materials, including cement, steel, etc.
- o The quantity of materials to be issued depends upon the type of latrine. Arrangements should be made with the RM, NWSDB to issue these materials to beneficiaries through the Multi Purpose Co-operative Society or Building Materials Corporation or other suitable outlet against lists submitted by Project Staff in the respective sub-project areas. The cost of these materials will be deducted when payment of subsidies is made by the RM.
- o Total subsidies for one completed latrine to be Rs.1,000/- for a new latrine or Rs.500/- for a rehabilitated latrine. There should be no objection if the householder wishes to spend more (from his own funds). In cases where the pit has to be lined (with brick or concrete rings) because of sandy location, total subsidies could be up to Rs.1,500/-.

- o The RM, NWSDB should coordinate with suppliers and manufacturers to ensure that suitable materials are available.
- o Payments of subsidies are to be made by the RM, NWSDB on certification by the SPAC and PHI.
- o A concrete slab made according to CSSS specifications with a pre-school fibreglass pan will be issued free of charge to all householders having children 5 years and below.

#### A.7 PROCEDURES FOR PAYMENTS

- o As indicated earlier, payments of subsidies should be made on an incremental basis as construction takes place, according to the procedures given in Annex B and Standard Forms, Annex D.
- o There must be no duplication of MOH and NWSDB subsidies, and the project subsidy should only be paid for latrines sponsored by the project.
- o Subsidised latrines must only be built for poorer families - using the same income guidelines as MOH, i.e. families whose income is less than Rs.1,000/- per month.
- o All payments of subsidies in materials and cash for latrine construction, including the issue of pre-school latrine slabs and fibreglass pans, are on the basis of 60% USAID and 40% NWSDB.

#### A.8 MONITORING

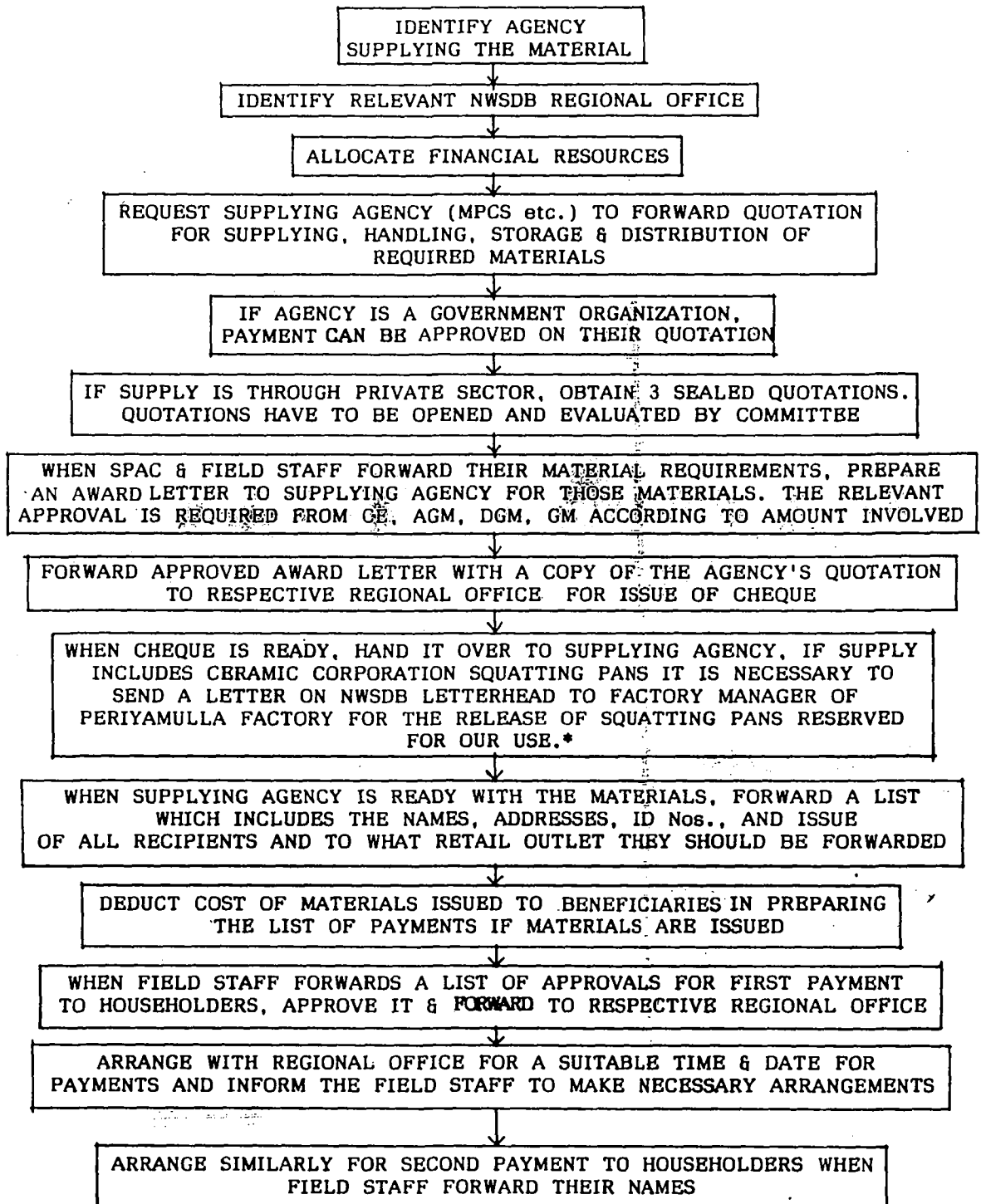
- o The Sub-Project Action Committee (SPAC)/Gramodaya Mandala System supplemented by field officers of the Health Department and other government agencies should monitor regularly the latrine construction programme, and subsequently the latrine usage. Reduction of indiscriminate soil pollution by families and reduction in water and sanitation related morbidity could be good indicators of usage of latrines.
- o Problems and constraints of the latrine construction programme, if they cannot be resolved at the SPAC, should be referred to the Project Coordinating Committee.
- o The local PHI/Project Staff should maintain proper records of the progress of the latrine construction programme and submit a progress report in duplicate to the CSSS. One copy should be sent to the AGM/CE of CSSS and one copy should be retained by SPAC/Project Staff.

A.9 COORDINATION WITH GOVERNMENT AGENCIES AND THE NGO SECTOR

- o It should be emphasised that the island-wide latrine construction programme remains a direct responsibility of the Health Ministry; therefore, in all instances, the Ministry of Health should be given the leadership. The CSSS of the NWSDB provides guidance and support to the Health Ministry field officials, but the programme is the Ministry's.
- o Where feasible, the water and latrine construction programmes should be incorporated in the Primary Health Care Programme of the Health Ministry. Our primary contribution to the PHC programme should be confined to water and sanitation. CSSS field officers should bear this in mind as full involvement is not feasible.
- o RMs, Engineers and TAs of NWSDB should participate actively in the latrine construction programme.
- o All equipment, materials, payments should be channelled through the RM, NWSDB.

ANNEX B

FINANCIAL & OTHER ARRANGEMENTS FOR  
LATRINE CONSTRUCTION PROGRAMME



\*(There is a letter sent by the Ceramic Corporation to that effect on file "CSS/Latrine Construction" and it is better if a copy can be attached - See Annex C).

Note: The following records must be maintained by the field staff (see Annex - D).

1. Statement of Payments and Statement of Commitment forms (Annex - D1, D2)
2. The Latrine Application which has to be recommended by SPAC & PHI (Annex - D6).
3. Issue of Payment Cards (yellow cards) to householders when they and the materials are ready (and also on SPAC recommendation). A duplicate card to be kept by field staff (Annex - D3).
4. Forwarding of a list with names of householders, addresses, ID Nos., and materials to be supplied, to the supplying agency. (Copy to be kept with Field staff: Annex - D4).
5. Forwarding of list of householders who require payments, to the Regional Office. (Copy to be kept with field staff: Annex - D5).

\*\* It is important that field staff transfer all the above data to the "Latrine Card" so that everything could be extracted from one source.

CSS / Lavinia Ceramics

Dr. Kamnadan  
Pl. note & return

ලංකා පීලින කර්මාන්ත සංග්‍රහණ මණ්ඩලය

(ජනතා මාර්ගික සංග්‍රහණ මණ්ඩලයකි)

CEYLON CERAMICS CORPORATION

(A State Industrial Corporation)



මහල කාර්යාලය: පිලියන්දල

HEAD OFFICE: PILIYANDALA.

විකුණුම් අංශය Sales Division	පිලියන්දල PILIYANDALA	අපේ අංකය Our Ref
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දුරකථන Telephone	202 / 211 / 215

30th April, 1987

Mr. D.S.D. Jayasiriwardena,  
 Chief Engineer/Community Support & Sanitation,  
 National Water Supply and Drainage Board,  
 Planning and Design Section,  
 P. O. Box 14,  
 Mt. Lavinia.

2

Dear Sir,

SUPPLY OF SQUATTING PANS

This refers to the discussion we had sometime back regarding the Sanitation Projects to be handled by N.W.S.D.B. with US Aid - in Ratnapura, Puttlam and Galle Districts.

We are pleased to inform, that we are now in a position to supply you, your monthly requirement of 800 Nos. Medium Squatting Pans for the said projects.

All issues will be from our Ceramic Factory at Periyamulla, Negombo and who ever calls for collection will have to settle the payments in full at the rate of Rs. 220/- per unit and also should produce a Letter of Authority from you to hand over the items to them on behalf of your Board.

Payments could be made either in cash or by cheque issued by N.W.S.D.B. or by Bank Draft, if it is a M.P.C.S. .

We shall be thankful if you could kindly send us your programme for collection at your earliest.

Assuring you of our best attention at all times.

Thanking You,

Yours faithfully,  
CEYLON CERAMICS CORPORATION,

*[Handwritten signature]*

ASST. MARKETING MANAGER.

*noted Pl.  
D.S.K.*

ANNEX D

STANDARD FORMS

- D.1 Statement of Payments (Table A)
- D.2 Statement of Commitment (Form C)
- D.3 Applicant's Payment Card (Yellow Card)  
(original in Sinhalese)
- D.4 Issue of Materials by Local Co-operative Branch
- D.5 List of Payments for Latrine Construction
- D.6 Application for Materials and Financial Assistance for Latrine  
Construction
- D.7 Note on Assistance for Latrine Construction

USAID WATER SUPPLY & SANITATION SECTOR PROJECT

Latrine Construction Programme - .....

Statement of Payments for ..... 1987.

Latrine Code No.	Name of Chief Occupant	Materials	Amount Paid		Total
			1st Payment	2nd Payment	

Code No. for Latrine:    Wennappuwa    - W/l etc.  
    Kakkapalliya    - KP  
    Kahawatta        - KH  
    Eheliyagoda     - E

-/sh:



USAID WATER SUPPLY & SANITATION SECTOR PROJECT

Latrine Construction Programme

Project area : .....

Statement of Commitment for the Month of .....

Number of beneficiaries 1	Total Cost of Materials				Cash payment to be made to beneficiaries 6 Rs. Cts.	Any other payment to be made 7 Rs. Cts.	Total of columns 2+3+4+5+6+7 8 Rs. Cts.
	Syphon 2 Rs. Cts.	Cement 3 Rs. Cts.	Steel 4 Rs. Cts.	Others 5 Rs. Cts.			

SANITATION PROJECT

PROJECT AREA : .....

GRAMASEVAKA NILADARI DIVISION : .....

P.H.I. DIVISION : .....

NAME OF APPLICANT : .....

ADDRESS: .....

SPECIMEN SIGNATURE: ..... IDENTITY CARD No.: .....

Material/ Cash	Approval for issue of mate- rials/payment		Issue of materials/ payment		Any other informa-	Received the materials in good condition
	Action Commi- tee Member	P.H.I.	Qty. issued	Sig- natu re & date		
1. Latrine Pan & Syphon						
2. Fibre Glass Pan						
3. Cement Bags						
4. Round Iron 6 mm						
5. P.V.C. Pipes 100 mm 4inch						
6.						
7.						
8.						
Payments 1. 1st Payment 2. 2nd Payment						

IMPORTANT

1. Please keep this Payment Card in a conspicuous place in the house.
2. Submit this to P.H.I., Project Officers, or members of the Action Committee when they come to inspect the progress.
3. Produce this Card and the Identity Card when obtaining materials/payments. If not, it will not be possible to obtain materials/payments.
4. Keep this Card with you until completion of the latrine construction.
5. It must be certified that the materials were inspected and received in good condition.

# සහිපාරක්ෂක ව්‍යාපෘතිය

ANNEX - D3  
(Sinhala)

ග්‍රාමසේවක නිලධාරී කොට්ඨාශය : ..... ව්‍යාපෘති ප්‍රදේශය : .....  
 1. සෞ. පරීක්ෂක කොට්ඨාශය : .....  
 ඉල්ලුම්කරුගේ නම : .....  
 ප්‍රිතිතය : .....  
 ආදර්ශ අත්සන : ..... හැඳුනුම්පත් අංකය : .....

ද්‍රව්‍ය/මුදල්	ද්‍රව්‍ය නිකුත් කිරීම/ගෙවීම සඳහා අනුමැතිය		ද්‍රව්‍ය නිකුත් කිරීම/ගෙවීම		අනෙකුත් තොරතුරු	ද්‍රව්‍ය හොඳ තත්වයෙන් ලබා ගනිමින් අත්සන
	ක්‍රියාකාරී කමිටු සාමාජික	ම. සෞ. පරීක්ෂක	නිකුත් කල ප්‍රමාණය	අත්සන සහ දිනය		
1. වැසිකිලි පෝච්චිය සහ සයිපනය						
2. පයිබර් ග්ලාස් පෝච්චිය						
3. සිමෙන්ති කොටට						
4. මි. මි. 6 රවුම් කමිටි						
5. අඟල් 4 පි.පි.ස. පයිප්පා						
6. ....						
7. ....						
8. ....						
ගෙවීම්:						
1. පළවෙනි ගෙවීම						
2. දෙවෙනි ගෙවීම						

අ.ප.බ.

### සැලකිය යුතු කරුණු

1. මෙම ගෙවීම් පහ නිවැරදි පැහැදිලිව පෙනෙන තැනක තබන්න.
2. මහජන සෞඛ්‍ය පරීක්ෂක, ව්‍යාපෘති නිලධාරීන් හෝ ක්‍රියාකාරී කමිටුවේ සාමාජිකයන් ප්‍රගතිය පරීක්ෂා කිරීමට පැමිණීමට මෙය ඉදිරිපත් කරන්න.
3. ද්‍රව්‍ය නිකුත් කරන/ගෙවීම් කරන අවස්ථාවේදී මෙම කාඩ්පත සහ පුද්ගලයන් ලියාපදිංචි කිරීමේ හැඳුනුම් පත ඉදිරිපත් කරන්න. නැතහොත් ද්‍රව්‍ය/ගෙවීම් ලබාගැනීමට නොහැකි වනු ඇත.
4. මෙම කාඩ්පත වැසිකිලිය සෑදූ අවසන් වන තුරුම ලඟ තබා ගන්න
5. ද්‍රව්‍ය ලබාගැනීමේදී ඒවා හොඳින් පරීක්ෂා කර හොඳ තත්වයෙන් ලබා ගත් බවට සහතික කළ යුතුය.

## WATER SUPPLY AND SANITATION PROJECT

PROJECT AREA : .....

## ISSUE OF MATERIALS FOR LATRINE CONSTRUCTION PROGRAMME

LOCAL CO-OPERATIVE BRANCH ISSUING MATERIALS : .....

Ref No.	Name	I.DD No.	Address	Materials needed & Quantity

I approve the issue of necessary materials to the above named person.

.....  
Representative of the Action Committee.....  
PHI .....

Date: .....

.....  
Project Officer

..... ජනරාල් ප්‍රවේශය

වැඩිදිළි වැඩ සටහන සඳහා ප්‍රවේශය නිකුත් කිරීම

ප්‍රවේශය නිකුත් කරන සම්පූර්ණ ප්‍රාදේශීයය: .....

යොමු අංකය	නම	සැලසුම්පත් අංකය	ලිපිනය	අවසන් ප්‍රවේශය වන ප්‍රවේශය

ඉහත සඳහන් ප්‍රදේශයන්හි ප්‍රවේශය නිකුත් කිරීම අනුමත කරමි.

.....  
ප්‍රියාකාරී නම් ප්‍රතිපෝෂිත

.....  
ම. සෞ. ප. / .....

දිනය: .....

.....  
ජනරාල් නිකුතය



SANITATION PROGRAM

Application for materials and financial assistance necessary for latrine construction

Gramaseva Niladari Division: .....

Project Area : .....

P.H.I. Division : .....

1. Name of Applicant: .....

2. Address where house is situated: .....

3. What is the present condition of latrine facilities of this house ? .....

4. What is the present condition of water facilities of this house ? .....

5. What type of latrine are you applying for ?  
Water Seal latrine with outside pit/Water seal latrine directly above the pit/latrine with improved ventilation

6. Is it necessary to build the latrine wall completely ? Yes/No.

I agree to construct a private latrine under the following conditions.

1. To dig the latrine pit and carry out construction work according to instructions given by PHI of the area/Project Officers/Members of the Action Committee.
2. To complete the digging of the latrine pit properly before obtaining the materials.
3. To make own arrangements to transport the latrine pan etc. to the house when they are received at the nearest Co-op Stores Branch/or Centre.
4. To return the materials and refund the payment obtained for latrine construction if I fail to complete the work according to the prescribed conditions.

.....  
Applicant's signature

Date: .....

Identity Card Number: .....

(Office minutes)

Construction of a ..... latrine for the above mentioned house is recommended.

It is necessary/not necessary for its pit to be completely built.

.....

Action Committee Member..... PHI .....  
(with name)

Date of receipt of application:..... Date materials delivered : .....

Date of payment : 1st .....  
2nd ..... National Identity Card No.

**සනීපාරක්ෂක වැඩ සටහන්**  
**වැසිකිළියක් ඉදිකිරීමට අවශ්‍ය ද්‍රව්‍ය හා මුදල් ආධාර ලබා ගැනීමේ**  
**ඉල්ලුම් පත්‍රය.**

ව්‍යාපෘති ප්‍රදේශය : ..... ග්‍රාමසේවා නිලධාරී කොට්ඨාශය : .....

මහජන සෞඛ්‍ය පරීක්ෂක කොට්ඨාශය : .....

1. ඉල්ලුම්කරුගේ නම :- .....
2. නිවාසය පිහිටි ලිපිනය :- .....
3. දැනට මෙම නිවසේ ඇති වැසිකිළි පහසුකම් කෙසේද? :- .....
4. දැනට මෙම නිවසේ ඇති ජල පහසුකම් කෙසේද? :- .....
5. ඔබ ඉල්ලා සිටින්නේ කුමන වර්ගයේ වැසිකිළියක්ද?  
පිටතින් වළ සහිත ජල මුද්‍රිත වැසිකිළිය / ඊසාන ජල මුද්‍රිත වැසිකිළිය / සංචානනය  
දියුණු කරණ ලද වැසිකිළිය.
6. වැසිකිළි වල සම්පූර්ණයෙන් බැඳීම අවශ්‍යද? : ඔව් / නැත.

පහත සඳහන් කොන්දේසි යටතේ පුද්ගලික වැසිකිළියක් සාදා ගැනීමට මම පොරොන්දු වෙමි.

1. පලාතේ සෞඛ්‍ය පරීක්ෂක / ව්‍යාපෘතියේ නිලධාරීන් / ක්‍රියාකාරී කමිටුවේ සාමාජිකයින් විසින් දෙනු ලබන උපදෙස් අනුව වැසිකිළි වළ කැපීම, සහ සියළු ඉදිකිරීම් කටයුතු නිම කිරීම.
2. ව්‍යාපෘතිය විසින් සපයනු ලබන ද්‍රව්‍ය ලබා ගැනීමට පෙර වැසිකිළි වල නිසි පරිදි කපා නිමකර ගැනීම.
3. කිවුම් සමුපකාර ශාඛාවට / හෝ අදාළ මධ්‍යස්ථානයට වැසිකිළි පෝච්චිය, ආදි ද්‍රව්‍ය ලැබුණු පසු ගෘහ විසින් එය තමන්ගේම නිවස පිහිටි ස්ථානයට ගෙන යාමට කටයුතු යෙදීම.
4. නියමිත කොන්දේසි අනුව වැඩය නිම කිරීමට අත්පසු වුවහොත්, ලබාගත් උපකරණ සහ මුදල් ආපසු දීමට පොරොන්දුවෙමි.

දිනය .....

හැඳුනුම්පත් අංකය:- ..... ඉල්ලුම්කරුගේ අත්සන

( කාංතීලියා සටහන් )

ඉහත නිවාසයට ..... වැසිකිළියක් සාදා ගැනීමට නිර්දේශ කරමි.

එහි වැසිකිළි වල සම්පූර්ණයෙන්ම බැඳීමට අවශ්‍යය / අවශ්‍ය නැත.

ක්‍රියාකාරී කමිටු සාමාජිකයන්ගේ මහජන සෞඛ්‍ය පරීක්ෂක ( නම ලියන්න )

ඉල්ලුම්පත භාරගත් දිනය :- ..... ද්‍රව්‍යයන් භාරදුන් දිනය:- .....

ගෙවීම් කළ දිනය :- පලමුවන ..... ජාතික හැඳුනුම්පත් අංක:- .....

දෙවන:- .....

ප්‍රජා සහාය සහ යනිතරක්ෂක අංශය, ජාතික ජල සම්පාදන හා ජලාපවහන මණ්ඩලය, කන්දපොල.



SANITATION PROGRAM

## ASSISTANCE FOR LATRINE CONSTRUCTION

1. The project will supply Rs. 1,000/- per a new latrine, and Rs. 500/- for a rehabilitated latrine (on the recommendation of the PHI, and the Project Officer of the Action Committee). If it is necessary for the pit to be completely lined the payment will be increased up to Rs. 1,000/-.
2. This grant will be given partly in cash and partly in materials.
3. The Project will make arrangements to supply the following materials through Co-operative Branches:
  - Squatting pan and syphon (for water seal latrines)
  - 1 bag cement (02 bags if it is necessary to line the pit completely)
  - 6 (4 m) steel reinforcement (necessary quantity)
  - 100 mm PVC Pipes(These materials will be issued when digging of the latrine pit is completed)
4. The cost of the above materials will be deducted from the grant and the balance paid in cash on completion of the latrine construction.
5. The national identity card should be produced when obtaining materials and cash payments.

Basic Instruction for Construction of the latrine

1. Latrine pit should generally be 1m (3 feet) in length, 1m (3 feet) in width and about 3.5m (12 feet) in depth (if circular the diameter should be 1m (3 feet)). 0.6 meters (2 feet) from the surface of the pit should be built in rubble. If necessary, the pit should be completely built in rubble.
2. Instructions of the PHI of the area or Project Officers should be obtained as regards the site for the latrine.
3. The latrine building should be according to your needs, but should be a permanent building.
4. All the instructions necessary to construct the latrine to a high standard at low cost will be given by the Project Officers and the PHI.

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Community Support & Sanitation Section, NWSDB, Ratmalana.

**සනීපාරක්ෂක වැඩ සටහන**  
**වැසිකිළි සෑදීම සඳහා දෙනු ලබන ආධාර.**

1. අළුතින් තනන ලද වැසිකිළියක් සඳහා රු. 1000/- ක මුදලක් ද, පුනරුත්ථාපනය කරණ ලද වැසිකිළියක් සඳහා රු. 500/- ක මුදලක්ද (ම. සෞ පරික්ෂක සහ ක්‍රියාකාරී කළිටු ව්‍යාපෘති නිලධාරී නිර්දේශ මත) ව්‍යාපෘතිය මගින් සපයනු ලැබේ.  
තවද, වැසිකිළි වල සම්පූර්ණයෙන් බැඳීමට අවශ්‍යතම, සපයන මුදල රු. 1500/- දක්වා වැඩිකරනු ලැබේ.
2. මෙම සහනාධාර මුදලින් කොටසක් ද්‍රව්‍ය වලින්ද, ඉතිරිය මුදලින්ද, ගෙවනු ලැබේ.
3. පහත සඳහන් ද්‍රව්‍යයන් සමුපකාර ශාඛා මගින් ලබා දීමට ව්‍යාපෘතිය කටයුතු කරණු ලැබේ.  
 - අවශ්‍ය උක්කුටික පෝච්චිය හා සයිපනය ( පල මුද්‍රිත වැසිකිළි සඳහා )  
 - සීමෙන්ති කොටට 01 ක් ද, ( වළ බැඳීමට නිර්දේශිත නම් කොටට 02 ක් ද, )  
 - මී මී. 6 රවුම් කමබ් ( අවශ්‍ය ප්‍රමාණයට )  
 - අහල් 4 පී වී සී. පයිප්ප.  
 ( මෙම ද්‍රව්‍යයන් නිකුත් කරණු ලබන්නේ වැසිකිළි වළ කැපීම නිම කළ පසුවය )
4. ඉහත සඳහන් කළ ද්‍රව්‍යයන් සඳහා වැය වූ මුදල අඩුකර ඉතිරි මුදල, වැසිකිළි ගොඩනැගිල්ල සාද නිම කළ පසු ගෙවනු ලැබේ.
5. මුදල් සහ ද්‍රව්‍යයන් ලබා ගැනීමට පැමිණෙන අවසානවේදී තම ජාතික හැඳුනුම්පත ඉදිරිපත් කළ යුතුය.

**වැසිකිළිය සාදා ගැනීම සඳහා මූලික උපදෙස්:-**

1. සාමාන්‍යයෙන් වැසිකිළි වළක් අඩු තරමින් අඩි 3 ක් දිග, අඩි 3 ක් ඉළල, හා අඩි 12 ක් පමණ ගැඹුරු විය යුතුය. ( කාචාකාර නම් විෂකම්භය අඩි 3 ක් විය යුතුය. ) වැසිකිළි වලෙහි ඉහල සිට මුල් අඩි 2 ( මීටර් 0.6 ) ගලෙන් බැඳ ඔක්තිමත් කළ යුතුය. තවද, අවශ්‍ය නම් වළ සම්පූර්ණයෙන් ගලෙන් බැඳිය යුතුය.
2. වැසිකිළි වළ සෑදිය යුතු ස්ථානය පිළිබඳ උපදෙස් පලාපත් මහජන සෞඛ්‍ය පරීක්ෂක හෝ ව්‍යාපෘති නිලධාරීන්ගෙන් ලබා ගත යුතුය.
3. වැසිකිළි ගෙය තමන්ට අවශ්‍ය පරිදි, එහෙත් සූරි වැසිකිළි ගෙයක් විය යුතුය.
4. වැසිකිළිය ඉතා අඩු වියදමින් හා තාක්ෂණිකව ඉහල මට්ටමින් සාදා ගැනීම පිණිස අවශ්‍ය සියළු උපදෙස් ව්‍යාපෘති නිලධාරීන් හා මහජන සෞඛ්‍ය පරීක්ෂක විසින් සපයනු ඇත.

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පුරා සහාය සහ සනීපාරක්ෂක අංශය, ජාතික පලසම්පාදන හා ජලාපවහන මණ්ඩලය, රත්මලාන.

## Actual Costs of Typical OWS Type Latrine - Wennappuwa

Item	Description	Qty	Unit	Rate (Rs.)	Amount (Rs)
<u>Labour</u>					
1.	Excavation of pit - Labour	3	Manday	50	150
2.	Lining pit - mason	2	"	100	200
	- labourer	2	"	50	100
3.	Const. & Inst. of slab - mason	1	"	100	100
	- labourer	1	"	50	50
4.	Construction of house - mason	2	"	100	200
	- carpenter	1	"	150	150
	- labourer	2	"	50	100
5.	Transport of materials - labourer	-	-	-	-
Total - Labour					1,050
<u>Materials</u>					
6.	Pit lining & house - bricks	1500	No.	0.55	825.00
	- cement	5	bags	120	600.00
	- sand	½	cube	220	110.00
7.	Slab - stones 20mm metal				37.50
	- reinforcement	4	bars	20	80.00
8.	Wood (roof)	6	pcs.	-	88.50
9.	Door hinges, latches nails	1	No.	250	250.00
10.	Roof Tiles	-	-	-	-
11.	PVC Pipe (100 mm)	1.5	m	33	50.00
12.	Water seal syphon (Lanka Ceramics)	1	No.	265	265.00
Total - Materials					2,306.00
<u>Tools and Equipment</u>					
	Rope				Provided by mason/ carpenter/ Householder
	Shovel				
	Ladder				
	Saw				
	Bucket				
	Hammer				
	Carpenter's square/level				
	Measuring tape				
	Trowel				
	Plumb line				
	wheelbarrow				
	Ox cart				
	other				
Total - Tools and equipment					-

Note: in Kakkapalliya, cost will be about Rs. 200 more due to higher cost of bricks and tiles.

Total Cost - Labour	1,050.00
Materials	2,306.00
Equipment	-
<b>Total</b>	<b>Rs. 3,356.00</b>