



4. Water-flushed toilets





4.1 POUR-FLUSH TOILET WITHOUT WATER-SEAL

4.1.1 POUR-FLUSH TOILET WITHOUT WATER-SEAL, INSTALLED ON VENTILATED PIT



Applicability

- This design is a slightly upgraded version of 3.1, achieved by installing a pour-flush squatting pan instead of the drop-hole
- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable only if there is dependable water supply (requires at least 1 or 2 liters per use).
- Suitable where users are accustomed to using water for anal cleansing. Where people use solid/ hard materials, these can be directly deposited into the toilet pit.
- Suitable in places where water in the P-trap is prone to freezing.

Construction

1. **Pit cover-slab/ floor:** This can be made out of round timber ballies with fine earth on top or RCC slab using bamboo or steel reinforcement. The floor should be smoothly finished and made impervious to water and urine penetration.
2. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground- level will help avoid rotting of timber.
3. **Roof:** This can be made from wooden shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
4. **Vent-pipe:** The vent-pipe can be PVC, HDPE, timber planks or large diameter bamboo. The top of the vent-pipe must be fitted with a fly-screen and must also allow sunlight to enter the pipe.
5. **Superstructure:** The recommended superstructure is the G-shaped design (refer page 48) with an open entrance.
6. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
7. **The pit** can be lined with dry hammer-dressed stones 1'4" thick to prevent rat nuisance and collapse of the earth.(refer page 47)



Toilet location, proper use and hygiene

1. This toilet can be built closer to the house than the traditional basic pit latrine.
2. The location should be chosen considering wind and sunlight direction.
3. The toilet should be located at a minimum distance of 15 meters from any type of water source.
4. For the air to be able to flow, use of a squatting pan cover is not recommended during day time.
5. Pour some water on the pan before using the toilet to avoid sticking of faeces on the pan.
6. Once a week, sweep, wash and clean the toilet floor and squatting pan (preferably using disinfectant), and clean the toilet surrounding area.
7. Once a month, clean the walls, door and ceiling.
8. Once every six months check the fly-screen on top of the vent-pipe and check the pipe is not obstructed.
9. Repairs should be carried out immediately.
10. The pit must not be used for garbage disposal.

Hand washing with soap is among the most effective ways to prevent diarrhoeal diseases



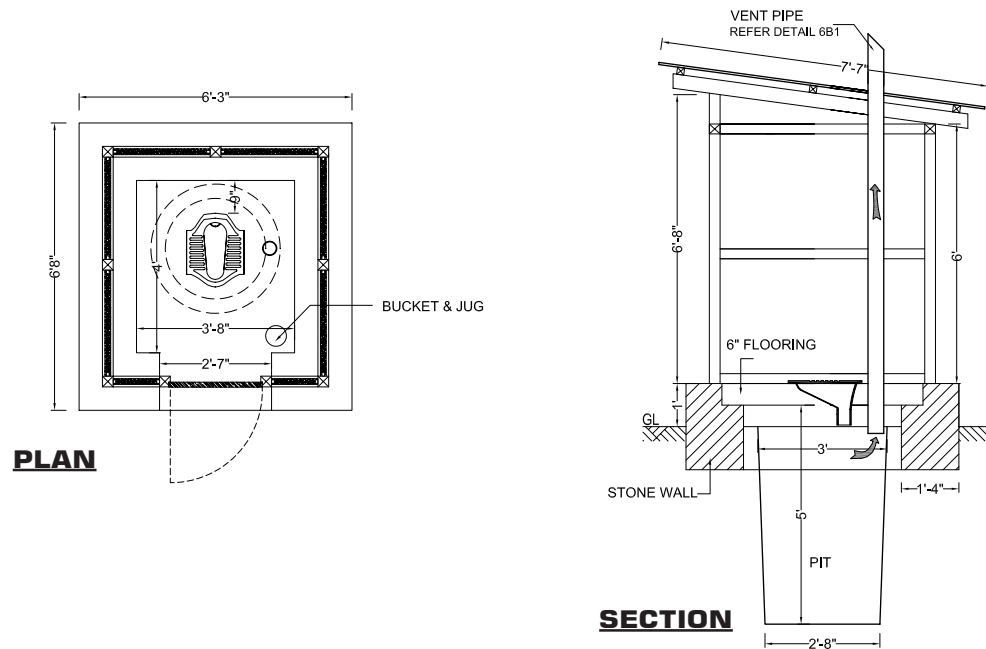
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Pour-flush squatting pan	1	No
2	Pipe 4" diameter (10' long)	1	No
3	Sliding bolt	1	No
4	Tower bolt	1	No
5	Handle	2	No
6	Nails	3	Kgs
7	Hinges	3	No
8	Timber	15	cft
9	Stone	70	cft
10	Skilled labour	10	work-day
11	Unskilled labour	20	work-day

Approximate minimum cost excluding local materials and labour = Nu. 1500/-



4.1.1 Pour-flush toilet without water-seal, installed on ventilated pit.



Scale: Not to scale



4.1.2 POUR-FLUSH TOILET WITHOUT WATER-SEAL, CONNECTED TO SINGLE OFF-SET LEACH-PIT



Applicability

- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable only if there is dependable water supply (requires at least 1 or 2 liters per use).
- Suitable where users are accustomed to using water for anal cleansing. Where people use solid/ hard materials, these must not be put into the toilet. Instead they should be put in a covered container kept inside the toilet, and disposed off each day by burning and/ or burying.
- Suitable in places where water in the P-trap is prone to freezing.

Construction

1. **Floor:** This can be made of compacted earth covered by concrete, smoothly finished and made impervious to water and urine penetration.
2. **Squatting place:** If a pour-flush squatting pan is not available, the squatting place can be home-made using cement mortar.
3. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground- level will help avoid rotting of timber.
4. **Roof:** This can be made from wooden shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
5. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
6. **The leach-pit** can be lined with dry hammer-dressed stones 1'4" thick. The cover can be made with concrete (1:2:4) with either bamboo or steel reinforcement (8 mm dia @ 200 mm c/c b/w). It can be made in two pieces for easy handling. A gas-pipe should be fitted in the leach-pit cover. (refer page 47)





Toilet location, proper use and hygiene

1. This toilet can be built close to the house.
2. The location of the leach-pit should be chosen considering wind direction.
3. A good fitting lid for the squatting pan is recommended.
4. Once a week, sweep, wash and clean the toilet floor and squatting place (preferably using disinfectant), and clean the toilet surrounding area.
5. Once a month, clean the walls, door and ceiling.
6. Once every six months check the fly-screen on top of the gas-pipe fitted to the leach-pit cover and check the pipe is not obstructed.
7. Repairs should be carried out immediately.

Lets aim towards ZERO open defecation



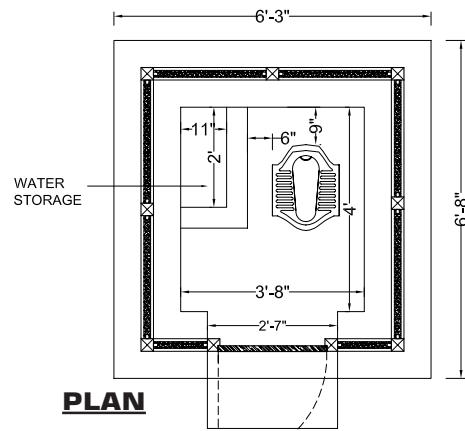
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Cement (50 Kgs bags)	6	bags
2	Pour-flush squatting pan	1	No
3	Pipe 4" diameter (10'long)	2	No
4	Sliding bolt	1	No
5	Tower bolt	1	No
6	Handle	2	No
7	Nails	3	Kgs
8	Hinges	3	No
9	Timber	15	cft
10	Sand	50	cft
11	Gravel	20	cft
12	Stone	100	cft
13	Skilled labour	15	work-day
14	Unskilled labour	20	work-day

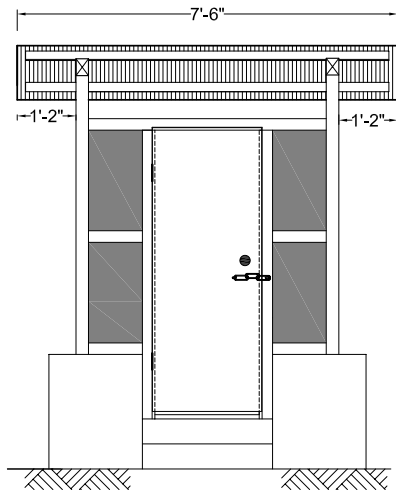
Approximate minimum cost excluding local materials and labour = Nu. 4500/-



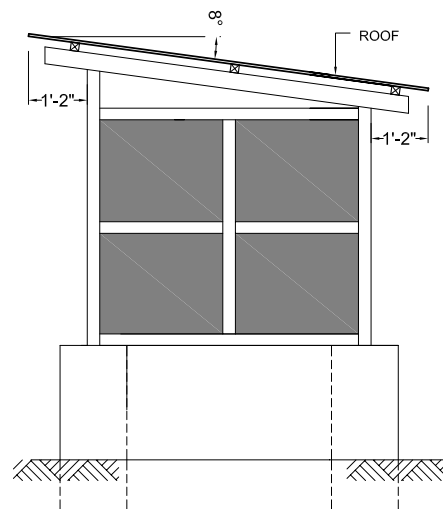
4.1.2 Pour-flush toilet without water-seal, connected to single off-set leach-pit.



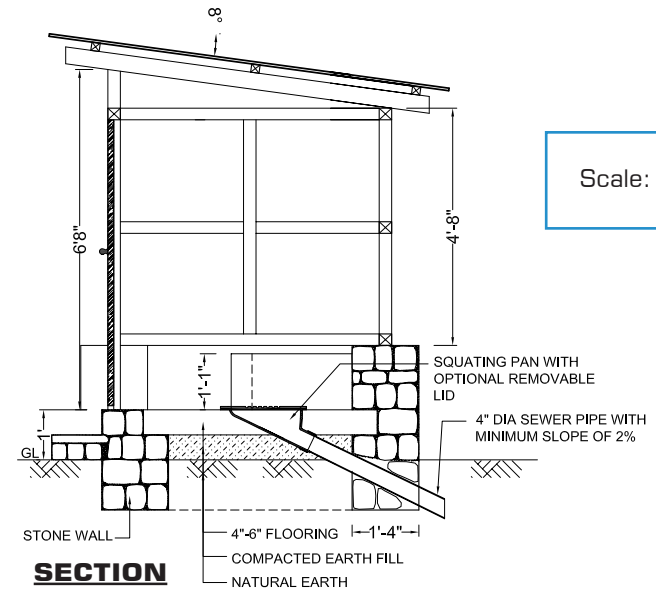
PLAN



FRONT ELEVATION



SIDE ELEVATION

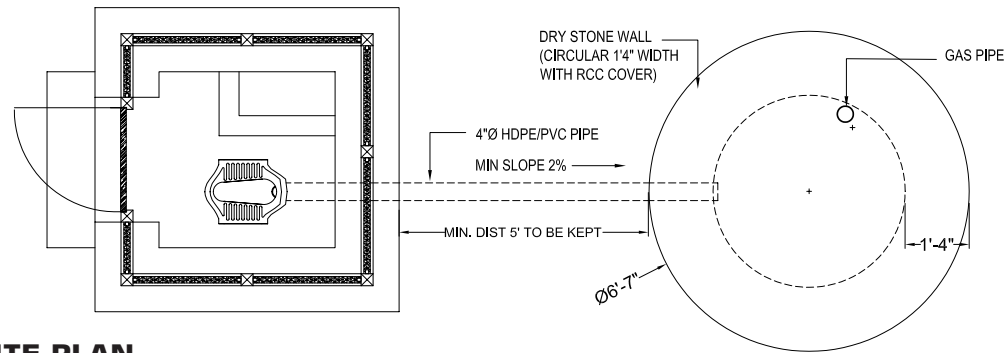


SECTION

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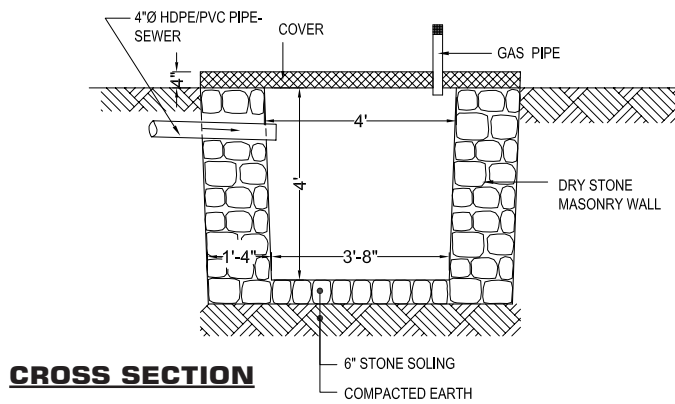


4.1.2 Pour-flush toilet without water-seal, connected to single off-set leach-pit.



SITE PLAN

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CROSS SECTION



4.1.3 POUR-FLUSH TOILET WITHOUT WATER-SEAL, CONNECTED TO TWIN OFF-SET LEACH-PITS



Applicability

- This design is the same as 4.1.2 but has an additional leach-pit. The alternating use of the two leach-pits allows the toilet to be used continuously without any interruption.
- When the first leach-pit becomes full, the pipe from the junction box is closed and the second leach-pit is put into use. When the second leach-pit becomes full, the first leach-pit is emptied and put back into use.
- The decomposed contents of the leach-pits are safe to use as a plant fertiliser if desired.

- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable only if there is dependable water supply (requires at least 1 or 2 liters per use).
- Suitable where users are accustomed to using water for anal cleansing. Where people use solid/ hard materials, these must not be put into the toilet. Instead they should be put in a covered container kept inside the toilet, and disposed of each day by burning and/ or burying.
- Suitable in places where water in the P-trap is prone to freezing.

Construction

1. **Floor:** This can be made of compacted earth covered by concrete, smoothly finished and made impervious to water and urine penetration.
2. **Squatting place:** If a pour-flush squatting pan is not available, the squatting place can be home-made using cement mortar.
3. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground- level **will help avoid rotting of timber.**
4. **Roof:** This can be made from wood shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
5. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
6. **The leach-pit** can be lined with dry hammer-dressed stones 1'4" thick. The cover can be made with concrete (1:2:4) with either bamboo or steel reinforcement (8 mm dia @ 200 mm c/c b/w). It can be made in two pieces for easy handling. A gas-pipe should be fitted in the leach-pit cover. (refer page 47 for details)



Toilet location, proper use and hygiene

1. This toilet can be built close to, or attached to the house.
2. The location of the leach-pits should be chosen considering wind direction. There should be enough space to allow at least 4-5 feet between the two pits.
3. A good fitting lid for the squatting pan is suggested if smell is found to be a nuisance.
4. Once a week, sweep, wash and clean the toilet floor and squatting pan (preferably using disinfectant), and clean the toilet surrounding area.
5. Once a month, clean the walls, door and ceiling.
6. Once every six months check the fly-screen on top of the gas-pipe fitted to the leach-pit covers and check the pipe is not obstructed.
7. Repairs should be carried out immediately.

Children faeces must be disposed off properly

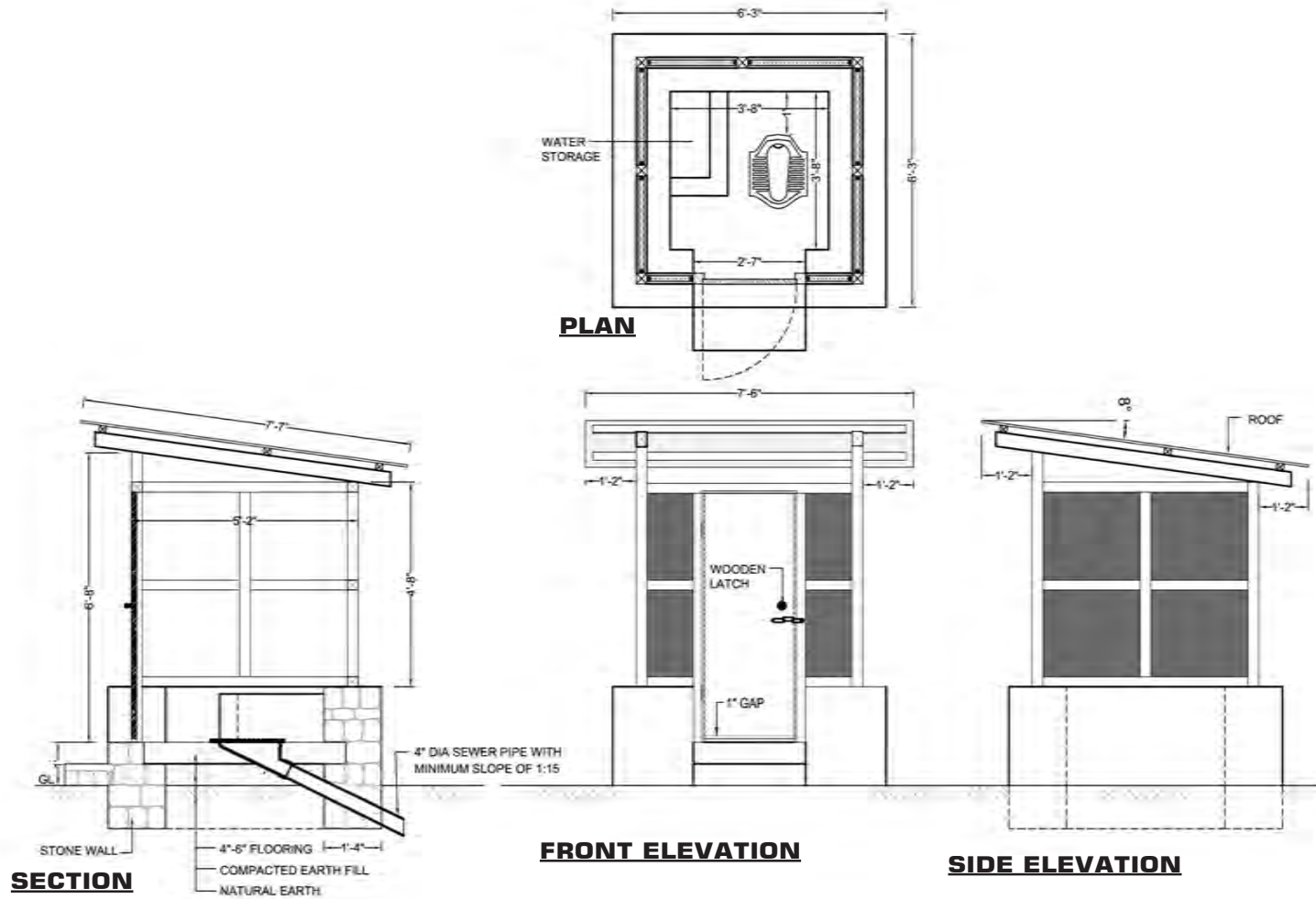
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Cement (50 Kgs bags)	8	bags
2	Pour-flush squatting pan	1	No
3	Pipe 4" diameter (10'long)	2	No
4	Sliding bolt	1	No
5	Tower bolt	1	No
6	Handle	2	No
7	Nails	3	Kgs
8	Hinges	3	No
9	Timber	15	cft
10	Sand	80	cft
11	Gravel	30	cft
12	Stone	160	cft
13	Skilled labour	15	work-day
14	Unskilled labour	25	work-day

Approximate minimum cost excluding local materials and labour = Nu. 5000/-



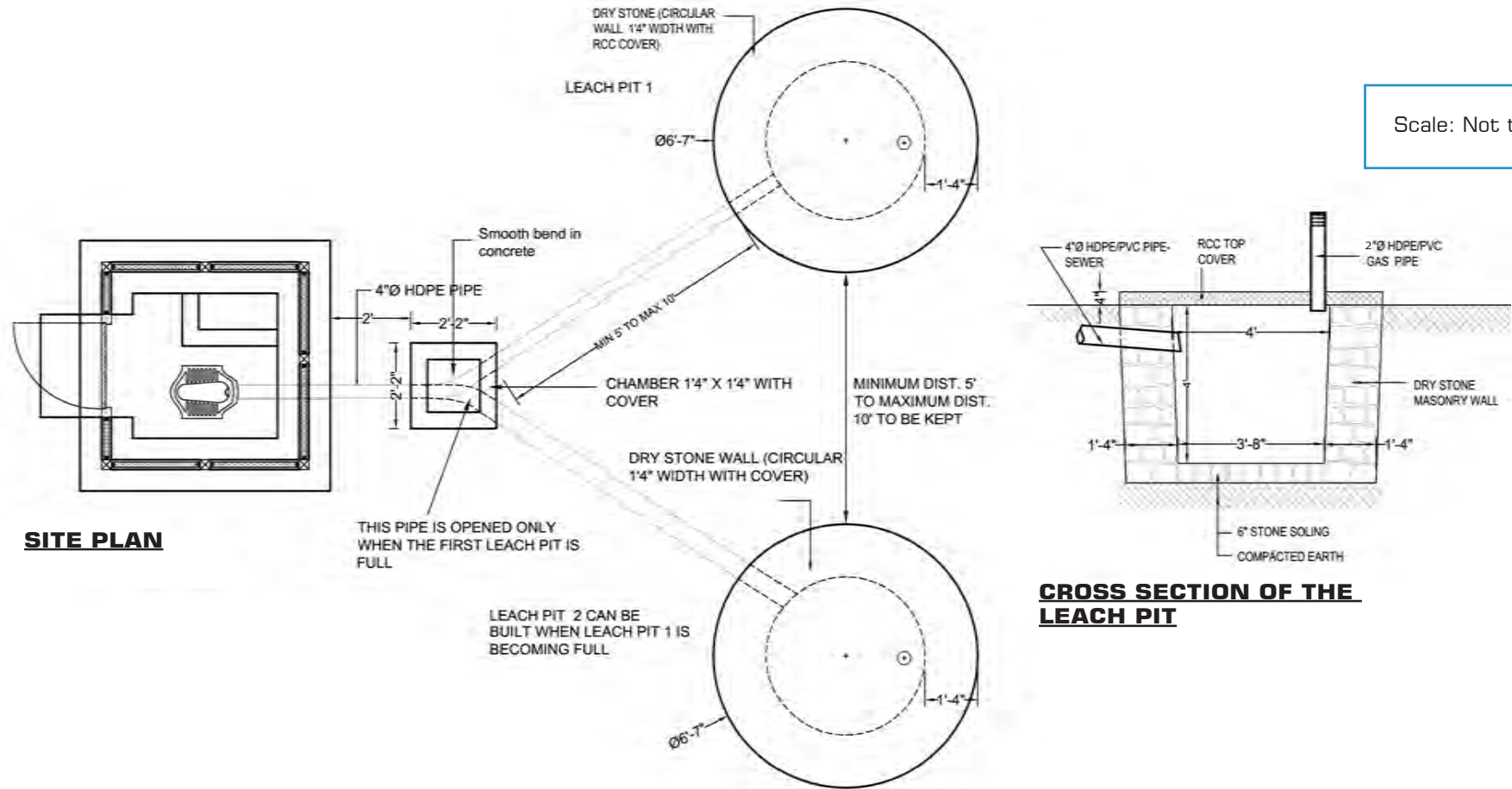
4.1.3 Pour-flush toilet without water-seal, connected to twin off-set leach-pits



Scale: Not to scale



4.1.3 Pour-flush toilet without water-seal, connected to twin off-set leach-pits





4.2 POUR-FLUSH TOILET WITH WATER-SEAL

4.2.1 POUR-FLUSH TOILET WITH WATER-SEAL, INSTALLED ON VENTILATED PIT



Applicability

- This design is an upgraded version of 3.1 achieved by installing a pour-flush squatting pan with water-seal instead of the drop-hole.
- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable only if there is dependable water supply (requires at least 3 or 4 liters per use).
- Suitable where users are accustomed to using water for anal cleansing.
- Where people use solid/ hard materials, these must not be put into the toilet. Instead they should be put in a covered container kept inside the toilet, and disposed of each day by burning and/ or burying.

Construction

1. **Pit cover-slab/ floor:** This can be made out of round timber ballies with fine earth on top or RCC slab using bamboo or steel reinforcement. The floor should be smoothly finished and made impervious to water and urine penetration.
2. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground-level will help avoid rotting of timber.
3. **Roof:** This can be made from wood shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
4. **Vent-pipe:** The vent-pipe can be PVC, HDPE, timber planks or large diameter bamboo. The top of the vent-pipe must be fitted with a fly-screen and must also allow sunlight to enter the pipe.
5. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
6. **The pit** can be lined with dry hammer-dressed stones 1'4" thick to prevent rat nuisance and collapse of the earth.



Toilet location, proper use and hygiene

1. This toilet can be built closer to the house than the traditional basic pit latrine.
2. The location should be chosen considering wind and sunlight direction.
3. Once a week, sweep, wash and clean the toilet floor and squatting pan (preferably using disinfectant), and clean the toilet surrounding area.
4. Once a month, clean the walls, door and ceiling.
5. Once every six months check the fly-screen on top of the vent-pipe and check the pipe is not obstructed.
6. Repairs should be carried out immediately.

Do not defecate in the open in any circumstances

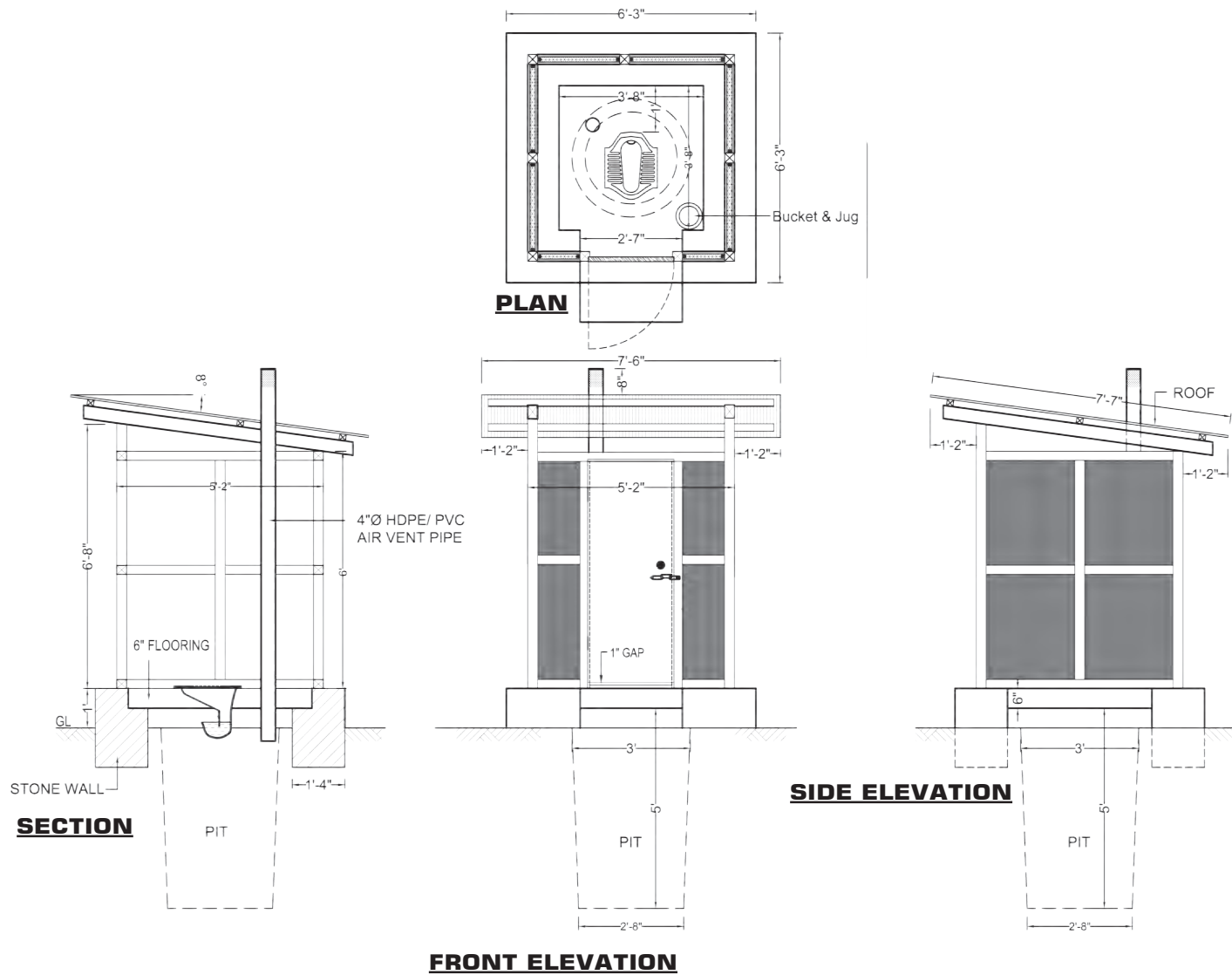
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Pour-flush squatting pan (with water trap)	1	No
2	Pipe 4" diameter (10' long)	2	No
3	Sliding bolt	1	No
4	Tower bolt	1	No
5	Handle	2	No
6	Nails	3	Kgs
7	Hinges	3	No
8	Timber	15	cft
9	Stone	70	cft
10	Skilled labour	10	work-day
11	Unskilled labour	20	work-day

Approximate minimum cost excluding local materials and labour = Nu. 2000/-



4.2.1 Pour-flush toilet with water-seal, installed on ventilated pit



Scale: Not to scale



4.2.2 POUR-FLUSH TOILET WITH WATER-SEAL, CONNECTED TO SINGLE OFF-SET LEACH-PIT



Applicability

- This design is an upgraded version of 2.2 achieved by the addition of a water-seal to the pour-flush squatting pan.
- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable only if there is dependable water supply (requires at least 3 or 4 liters per use).

- Suitable where users are accustomed to using water for anal cleansing. Where people use solid/ hard materials, these must not be put into the toilet. Instead they should be put in a covered container kept inside the toilet, and disposed of each day by burning and/ or burying.

Construction

1. **Floor:** This can be made of compacted earth covered by concrete, smoothly finished and made impervious to water and urine penetration.
2. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground- level will help avoid rotting of timber.
3. **Roof:** This can be made from wooden shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
4. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
5. **The leach-pit** can be lined with dry hammer-dressed stones 1'4" thick. The cover can be made with concrete (1:2:4) with either bamboo or steel reinforcement (8 mm dia @ 200 mm c/c b/w). It can be made in two pieces for easy handling. A gas-pipe should be fitted in the leach-pit cover. (refer page 47 for details)



Toilet location, proper use and hygiene

1. This toilet can be built inside, attached to, or close to the house.
2. The location of the leach-pit should be chosen considering wind direction.
3. Once a week, sweep, wash and clean the toilet floor and squatting pan (preferably using disinfectant), and clean the toilet surrounding area.
4. Once a month, clean the walls, door and ceiling.
5. Once every six months check the fly-screen on top of the gas-pipe fitted to the leach-pit cover and check the pipe is not obstructed.
6. Repairs should be carried out immediately.

Washing hands with water alone is significantly less effective than washing hands with soap



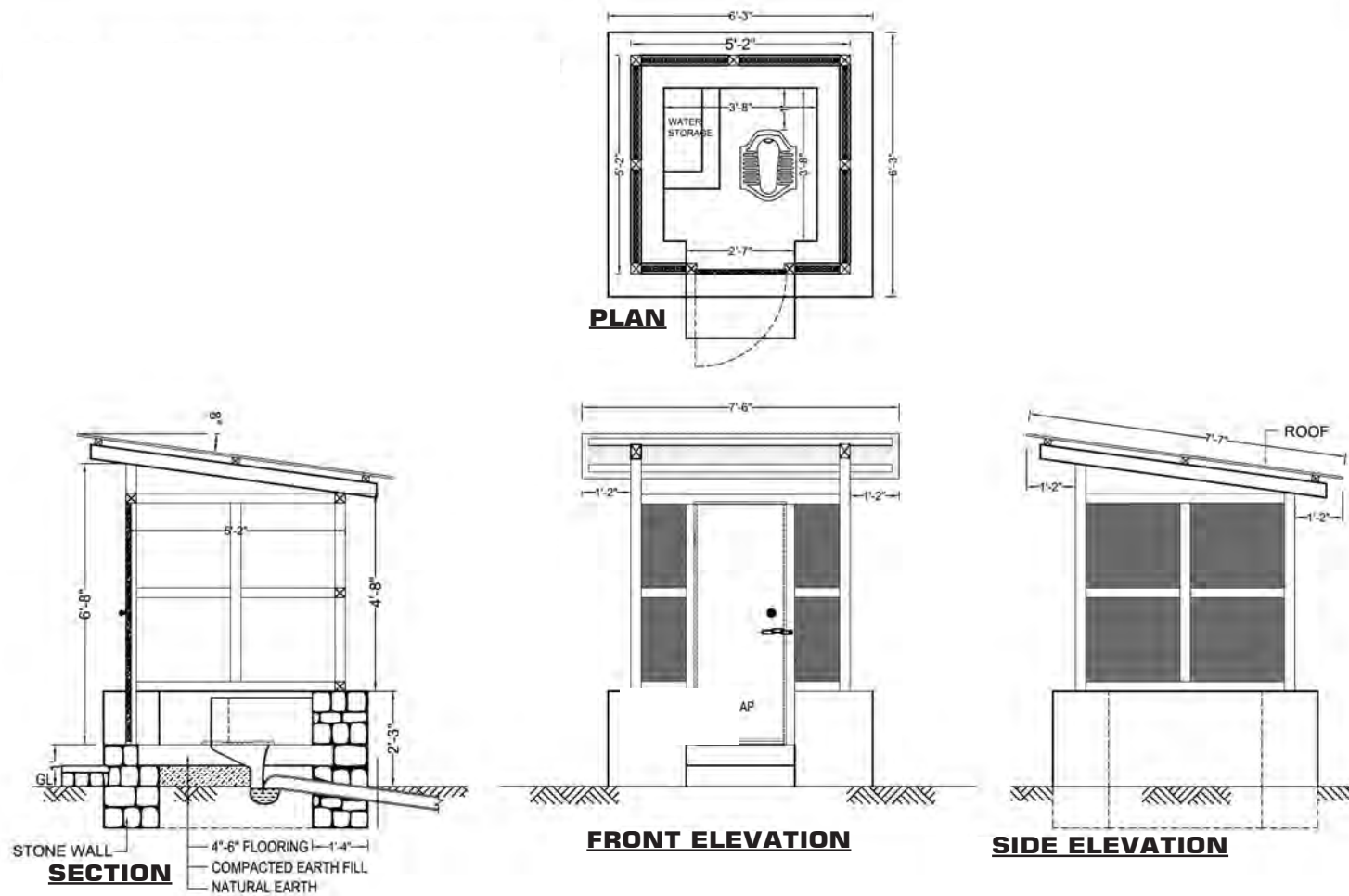
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Cement (50 Kgs bags)	6	bags
2	Pour-flush squatting pan (with water trap)	1	No
3	Pipe 4" diameter (10'long)	2	No
4	Sliding bolt	1	No
5	Tower bolt	1	No
6	Handle	2	No
7	Nails	3	Kgs
8	Hinges	3	No
9	Timber	15	cft
10	Sand	50	cft
11	Gravel	20	cft
12	Stone	100	cft
13	Skilled labour	15	work-day
14	Unskilled labour	20	work-day

Approximate minimum cost excluding local materials and labour = Nu. 4500/-



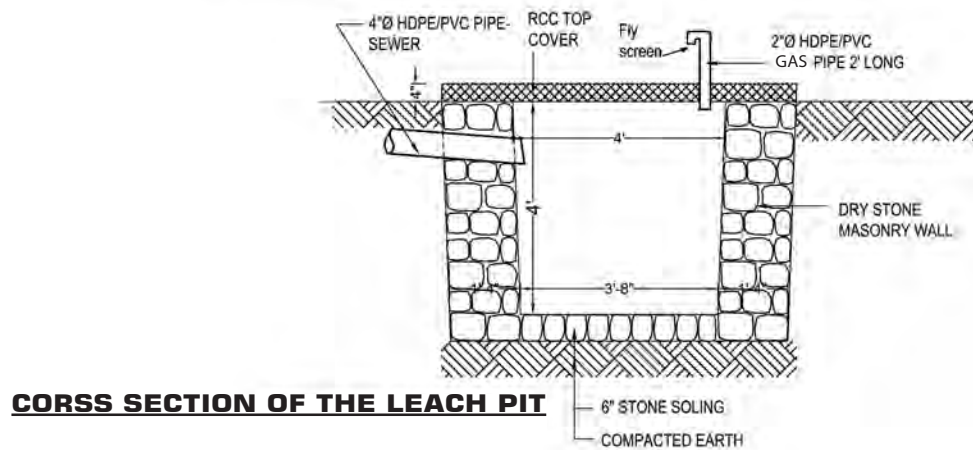
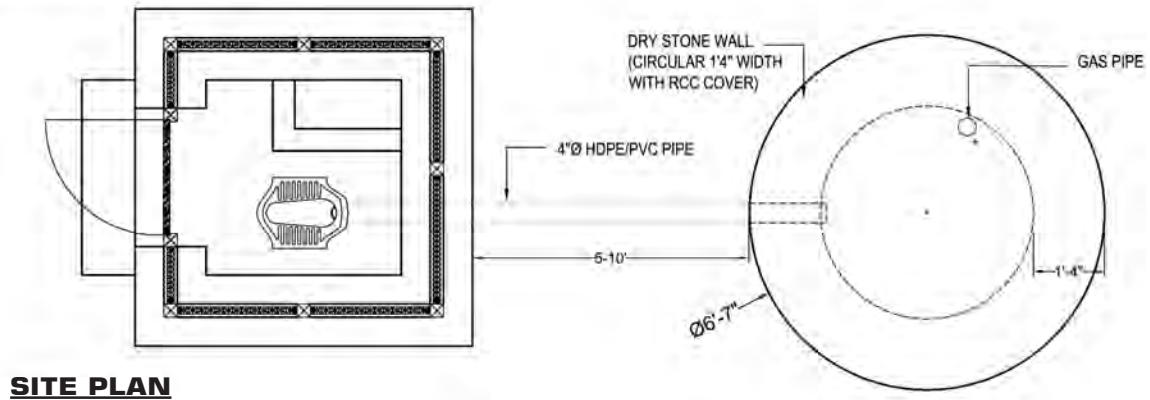
4.2.2 Pour-flush toilet with water-seal, connected to single off-set leach-pit



Scale: Not to scale



4.2.2 Pour-flush toilet with water-seal, connected to single off-set leach-pit



Scale: Not to scale



4.2.3 POUR-FLUSH TOILET WITH WATER-SEAL, CONNECTED TO TWIN OFF-SET LEACH-PITS



Applicability

- This design is the same as 4.2.2 but has an additional leach-pit. The alternating use of the two leach-pits allows the toilet to be used continuously without any interruption.
- When the first leach-pit becomes full, the pipe from the junction box is closed and the second leach-pit is put into use. When the second leach-pit becomes full, the first leach-pit is emptied and put back into use.
- The decomposed contents of the leach-pits are safe to use as a plant fertiliser if desired.

- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable only if there is dependable water supply (requires at least 3 or 4 liters per use).
- Suitable where users are accustomed to using water for anal cleansing. Where people use solid/ hard materials, these must not be put into the toilet. Instead they should be put in a covered container kept inside the toilet, and disposed of each day by burning and/ or burying.

Construction

1. **Floor:** This can be made of compacted earth covered by concrete, smoothly finished and made impervious to water and urine penetration.
2. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground- level will help avoid rotting of timber.
3. **Roof:** This can be made from wooden shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
4. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
5. **The leach-pits** can be lined with dry hammer-dressed stones 1'4" thick. The covers can be made with concrete (1:2:4) with either bamboo or steel reinforcement (8mm dia @ 200mm c/c b/w). They can be made in two pieces for easy handling. Gas-pipes should be fitted in the leach-pit covers. (refer page 47 for details)



Toilet location, proper use and hygiene

1. This toilet can be built inside, attached to, or close to the house.
2. The location of the leach-pits should be chosen considering wind direction. There should be enough space to allow at least 4-5 feet between the two pits.
3. Once a week, sweep, wash and clean the toilet floor and squatting pan (preferably using disinfectant), and clean the toilet surrounding area.
4. Once a month, clean the walls, door and ceiling.
5. Once every six months check the fly-screen on top of the gas-pipe fitted to the leach-pit covers and check the pipe is not obstructed.
6. Repairs should be carried out immediately.

Please do not forget to wash your hands.....always!

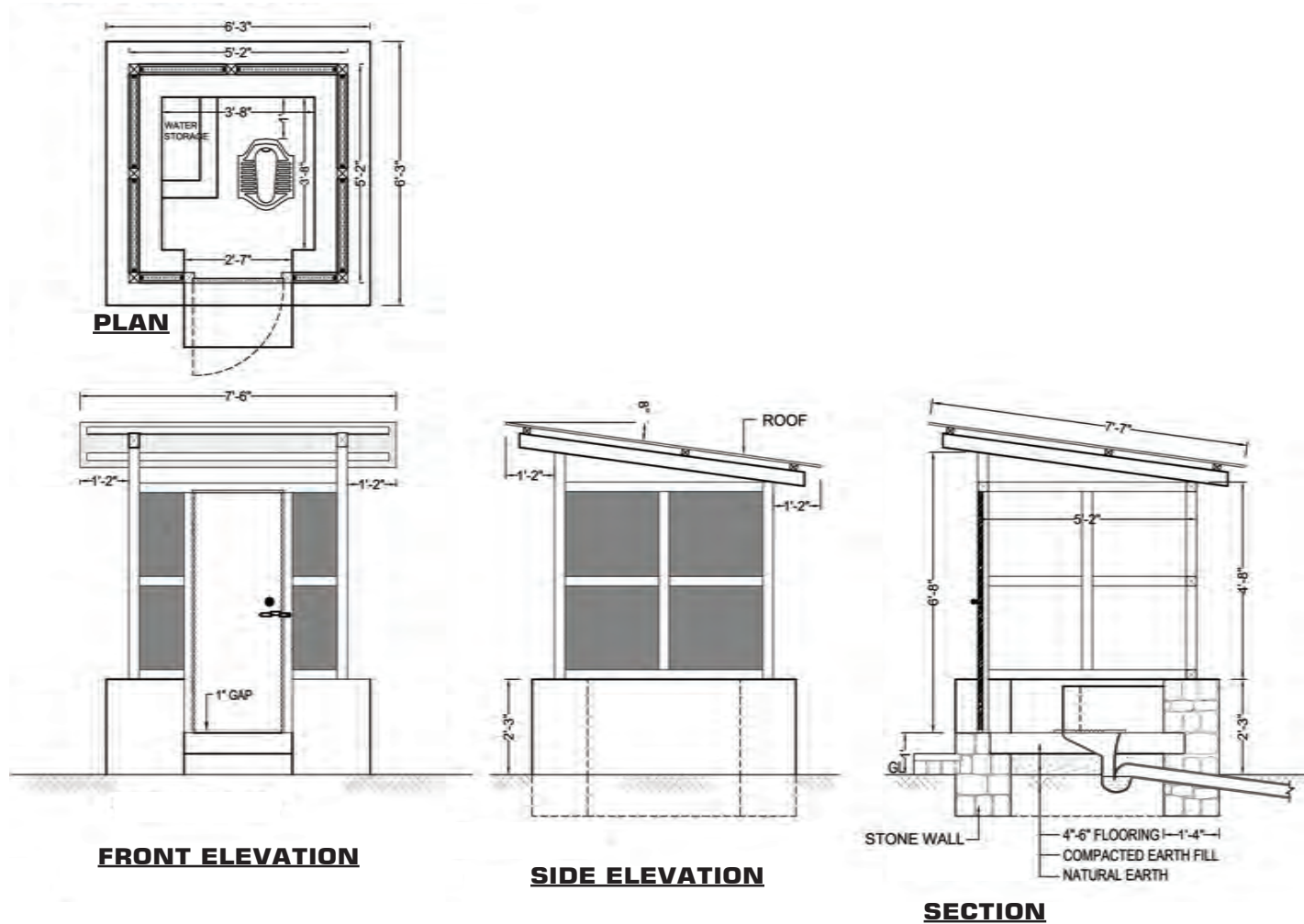
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Cement (50 Kgs bags)	8	bags
2	Pour-flush squatting pan (with water trap)	1	No
3	Pipe 4" diameter (10'long)	2	No
4	Sliding bolt	1	No
5	Tower bolt	1	No
6	Handle	2	No
7	Nails	3	Kgs
8	Hinges	3	No
9	Timber	15	cft
10	Sand	80	cft
11	Gravel	30	cft
12	Stone	160	cft
13	Skilled labour	15	work-day
14	Unskilled labour	25	work-day

Approximate minimum cost excluding local materials and labour = Nu. 5000/-



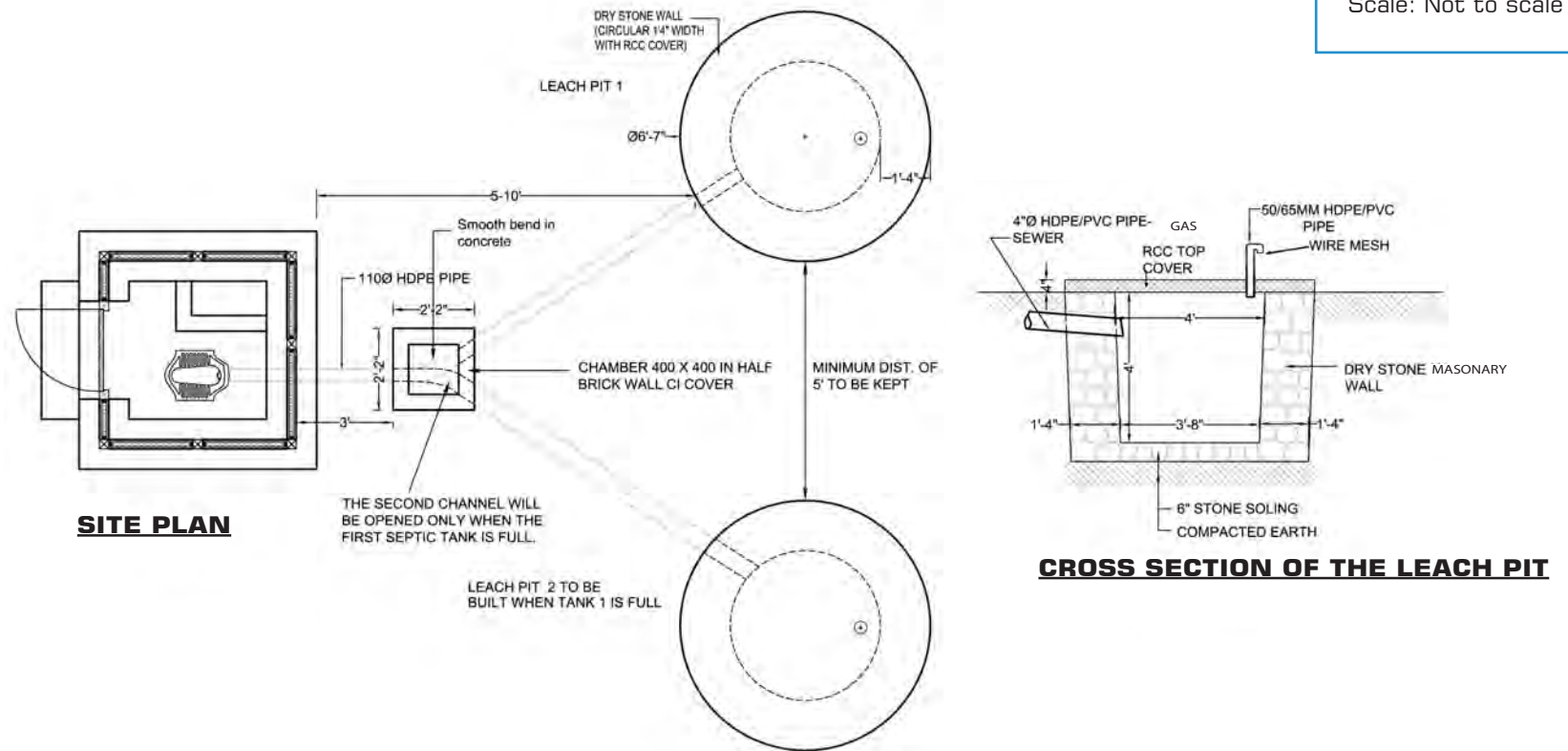
4.2.3 Pour-flush toilet with water-seal, connected to twin off-set leach-pits



Scale: Not to scale



4.2.3 Pour-flush toilet with water-seal, connected to twin off-set leach-pits





4.2.4 IMPROVED LONG-DROP TOILET



Applicability

- Suitable for houses that already have a traditional long-drop toilet.
- Suitable where users are accustomed to using water for anal cleansing.
- Suitable only if there is dependable water supply.
- Pour-flush without water-seal requires at least 1 or 2 liters per use; with water-seal requires at least 2 or 4 liters per use.

Construction

1. **Floor:** Can be made out of timber or RCC slab and should be smoothly finished and impervious to water and urine penetration.
2. **Walls:** Can be of same material as the walls of the house.
3. **Roof:** Can be made from CGI sheets, wooden shingles, or same material as the roof of the house.
4. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
5. **Toilet waste-pipe:** Can be of HDPE or PVC with glued socket firmly fixed. Toilet waste-pipe could be connected to a septic tank or an off-set leach pit. Septic tank is a water-tight two compartment tank with the second compartment twice the length of the first. (Septic tank details not included in this handbook)



Toilet location, proper use and hygiene

1. This toilet is traditionally built on the first floor of the house, protruding from the side.
2. If the toilet waste pipe is connected to a septic tank, it should be located at a minimum of 10 feet from the house.
3. If the toilet waste pipe is connected to a soak-pit, it should be located away from the house considering wind direction.
4. Once a week, sweep, wash and clean the toilet floor and squatting pan (preferably using disinfectant).
5. Once a month, clean the walls, door and ceiling.
6. Once every six months check the fly-screen on top of the gas-pipe fitted to the septic tank cover or soak pit and check the pipe is not obstructed.
7. Once a year check if the septic tank needs emptying. The sludge from the septic tank must be further composted before using as a fertilizer or safely buried.
8. Repairs should be carried out immediately.



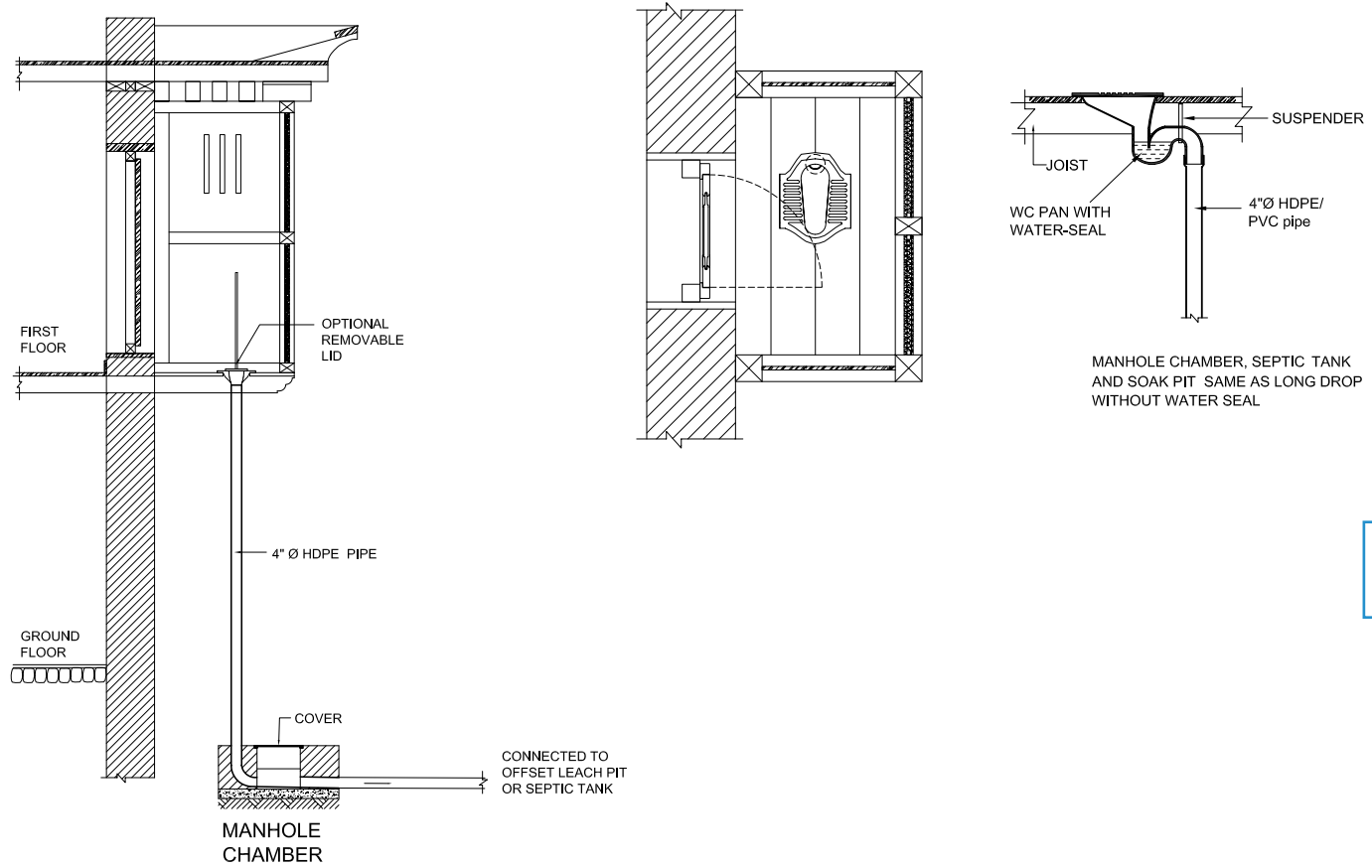
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Cement (50 Kgs bags)	10	bags
2	Pour-flush squatting pan	1	No
3	Pipe 4" diameter (10'long)	4	No
4	Sliding bolt	1	No
5	Tower bolt	1	No
6	Handle	2	No
7	Nails	3	Kgs
8	Hinges	3	No
9	Timber	15	cft
10	Sand	80	cft
11	Gravel	30	cft
12	Stone	120	cft
13	Skilled labour	15	work-day
14	Unskilled labour	25	work-day

Approximate minimum cost excluding local materials and labour = Nu. 7000/-



4.2.4 Improved long-drop toilet



Scale: Not to scale



4.3 POUR-FLUSH TOILET WITH BATHROOM COMBINED



Applicability

- This design is the same as 4.2.3 but has a bathroom attached.
- Suitable where the ground is easy to excavate and where there is no high water-table, water-logging, or flooding.
- Suitable where users are accustomed to using water for anal cleansing.
- Suitable only if there is dependable water supply. The addition of the bathroom increases the toilet water requirements by at least 50 liters per bather.
- The bathroom waste-water must be properly drained off and not into the leach pit.

Construction

1. **Floor:** This can be made of compacted earth covered by concrete, smoothly finished and made impervious to water and urine penetration.
2. **Walls:** Walls can be of ekra on 3"x3" ballies/ battens with mud/ cement plaster. Stone walling built up to 1' above ground- level will help avoid rotting of timber.
3. **Roof:** This can be made from wood shingles, bamboo matting, CGI sheets, or old bitumen sheets over timber/ ballies rafter and purlins (size of rafter is 3"x4" and purlins 2"x3"). The roof should be firmly secured to prevent wind damage.
4. **Water storage:** The toilet must have inbuilt water storage of 75-80 liters or a water storage container (with a lid in mosquito-prone areas).
5. **The leach-pits** can be lined with dry hammer-dressed stones 1'4" thick. The covers can be made with concrete (1:2:4) with either bamboo or steel reinforcement (8mm dia @ 200mm c/c b/w). They can be made in two pieces for easy handling. Gas-pipes should be fitted in the leach-pit covers. (refer page 47)





Toilet location, proper use and hygiene

1. This toilet and bathroom can be built inside, attached to, or close to the house.
2. The location of the leach-pits should be chosen considering wind direction. There should be enough space to allow at least 4-5 feet between the two pits.
3. Once a week, sweep, wash and clean the bathroom, toilet floor and squatting pan (preferably using disinfectant), and clean the toilet surrounding area.
4. Once a month, clean the walls, door and ceiling.
5. Once every six months check the fly-screen on top of the gas-pipe fitted to the leach-pit covers and check the pipe is not obstructed.
6. Repairs should be carried out immediately.

Always leave the toilet the way you would like to find it - clean, tidy and ready to use - and always wash your hands with soap after using the toilet.



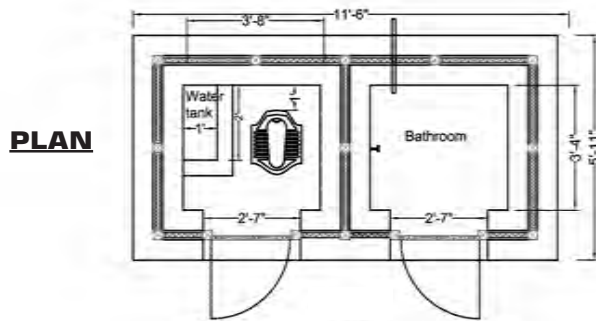
Approximate material estimate

Sl. No.	Particular	Qty	Unit
1	Cement (50 Kgs bags)	12	bags
2	Pour-flush squatting pan	1	No
3	Pipe 4" diameter (10'long)	2	No
4	Sliding bolt	2	No
5	Tower bolt	2	No
6	Handle	4	No
7	Nails	6	Kgs
8	Hinges	6	No
9	Timber	20	cft
10	Sand	80	cft
11	Gravel	30	cft
12	Stone	120	cft
13	Skilled labour	15	work-day
14	Unskilled labour	25	work-day

Approximate minimum cost excluding local materials and labour = Nu. 7000/-

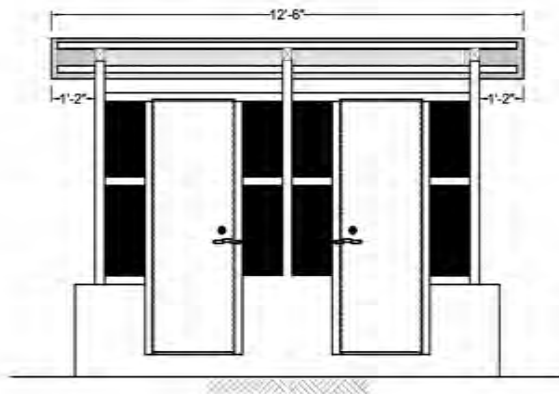


4.3 Pour flush toilet with bathroom combined

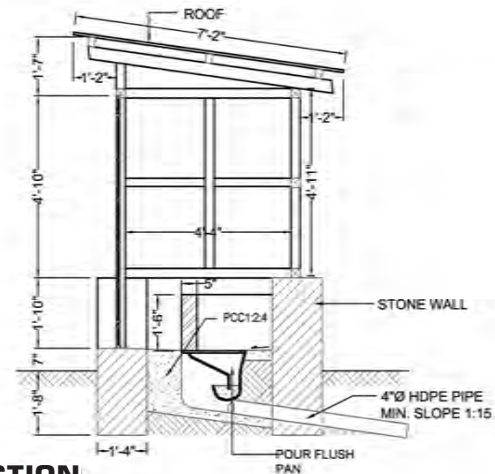


Scale: Not to scale

SIDE ELEVATION



FRONT ELEVATION



SECTION