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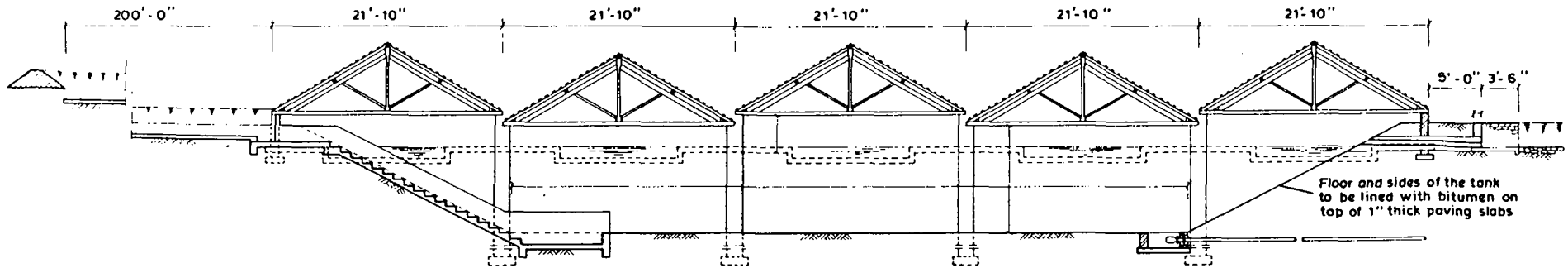
Type designs for small water supply systems



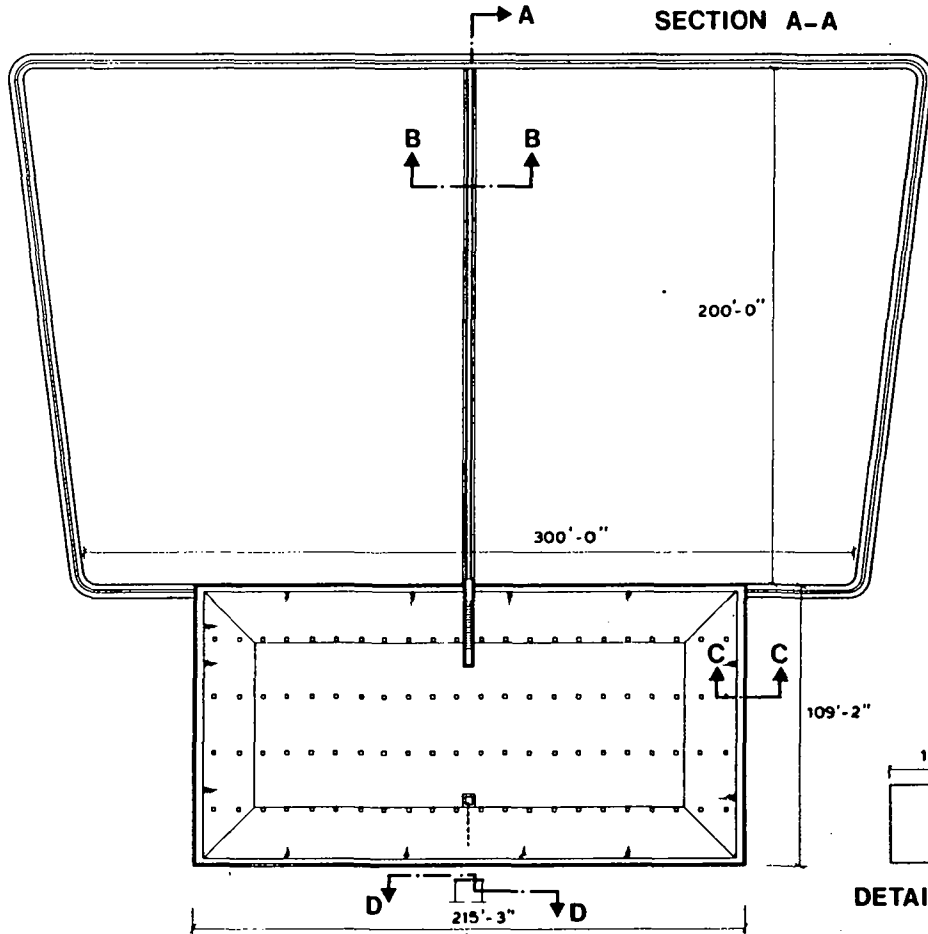
Type designs for small water supply systems

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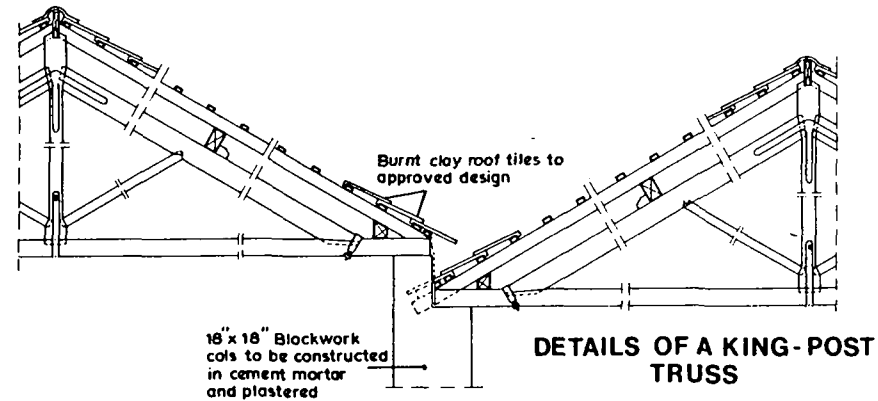




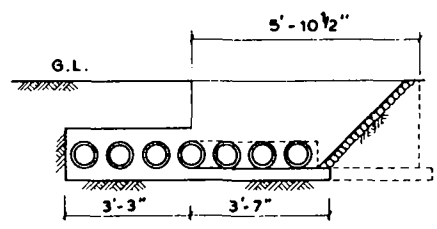
SECTION A-A



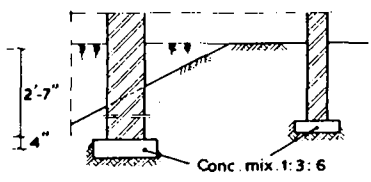
PLAN



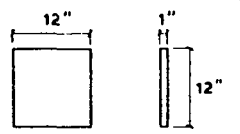
DETAILS OF A KING-POST TRUSS



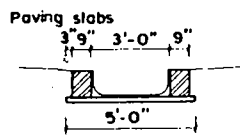
SECTION D-D



SECTION C-C



DETAILS OF PAVING SLABS

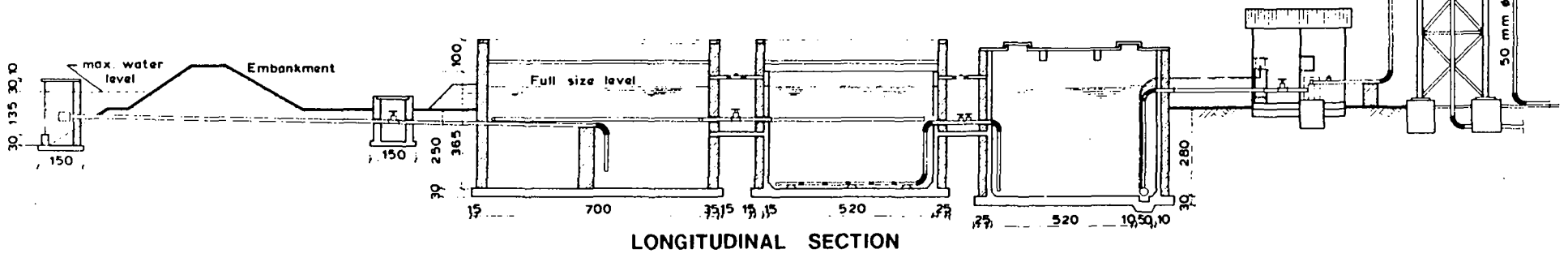
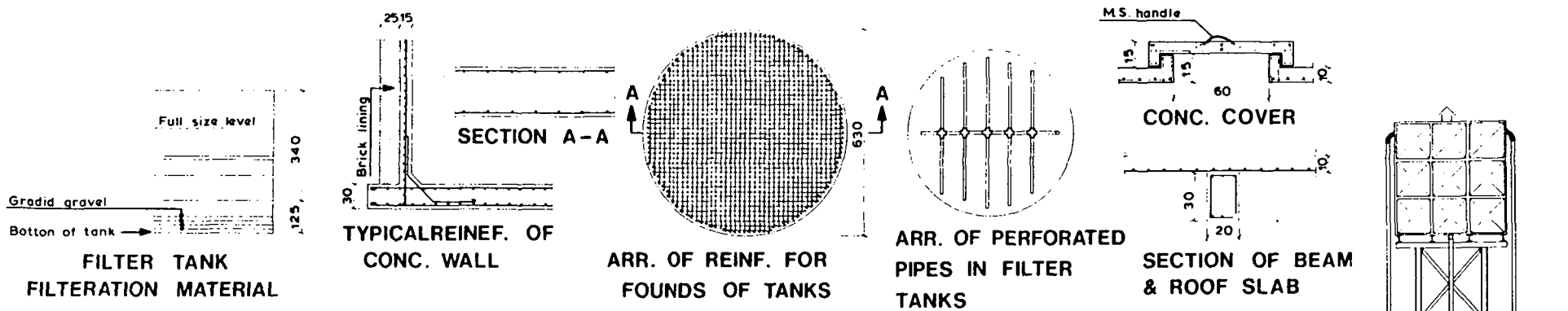


SECTION B-B

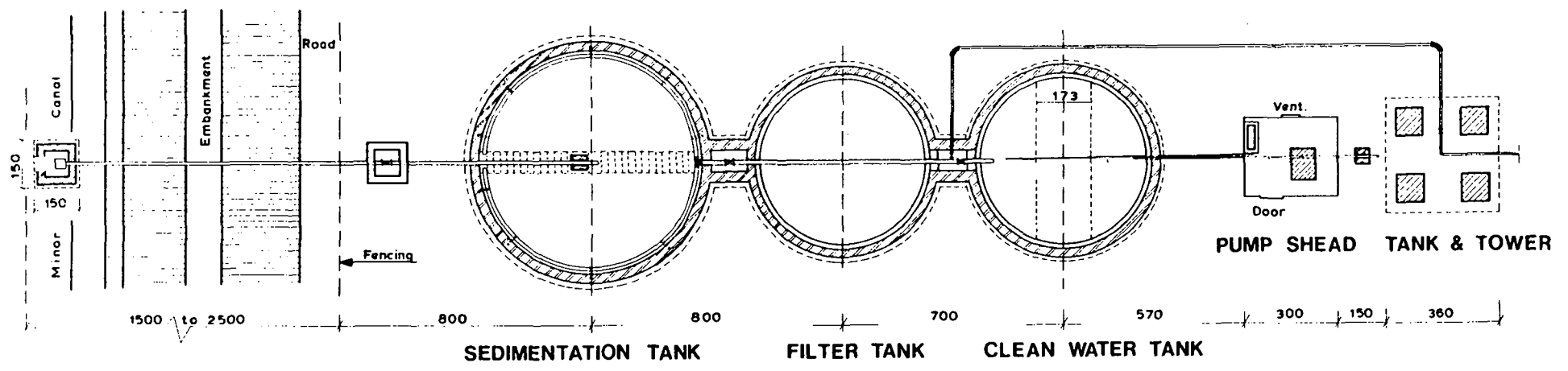
All dimensions in cm, unless otherwise shown

WATER CATCHMENT AND UNDERGROUND TANK

TANZANIA



LONGITUDINAL SECTION

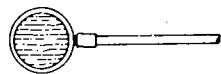
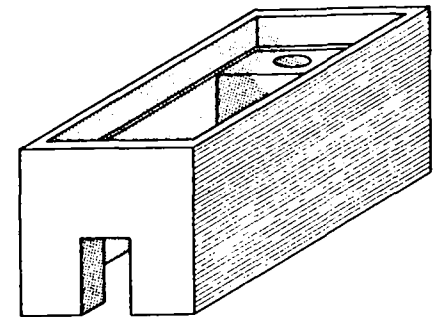
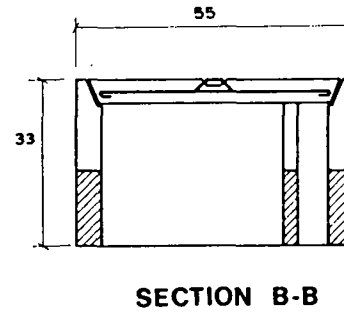
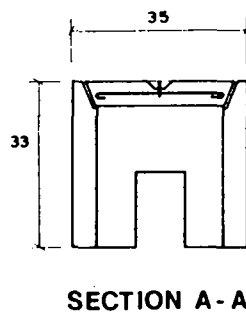
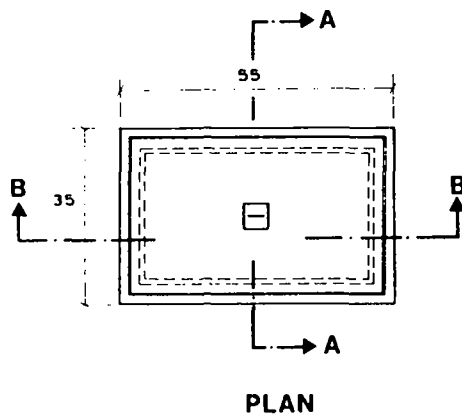
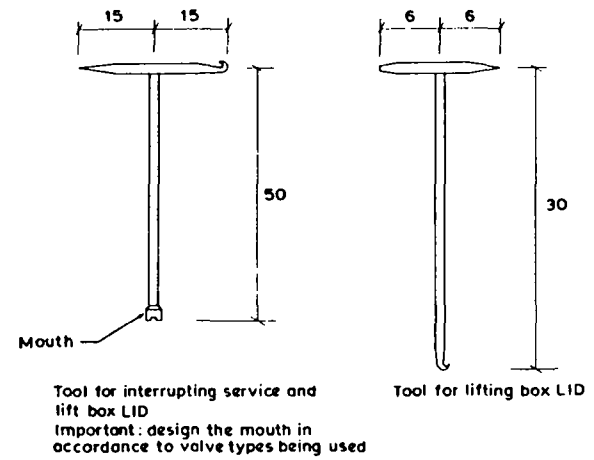
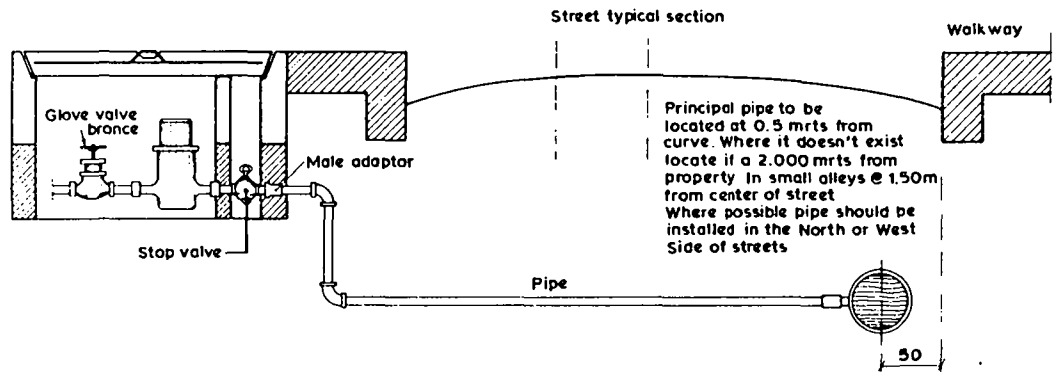


SECTIONAL PLAN

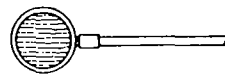
All dimensions in cm, unless otherwise shown

FILTER UNIT FOR DOMESTIC CANAL WATER SUPPLY

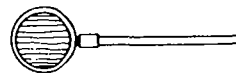
SUDAN



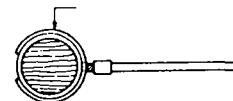
House connection asbestos cement $\geq 3''$



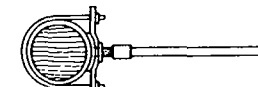
In P.V.C. $\phi > 4''$



Cast iron $\phi \geq 3$



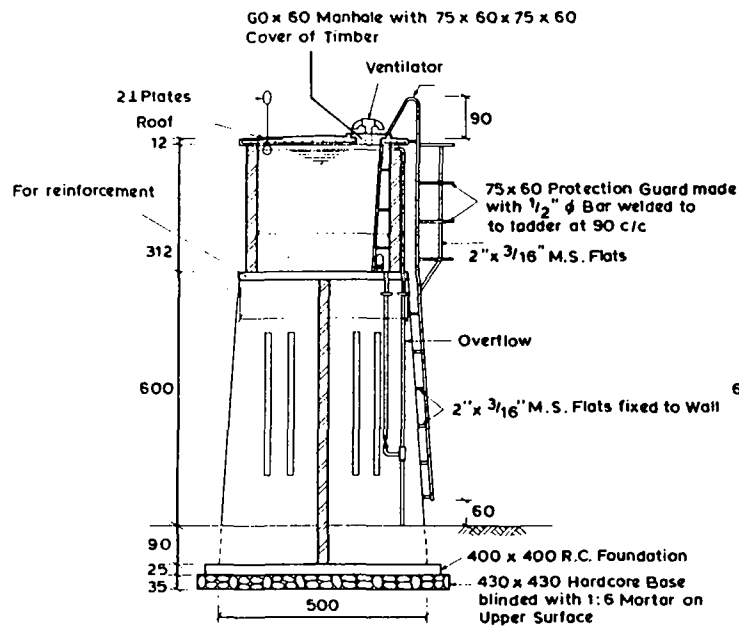
In P.V.C. $\leq 4''$ build a sleeve



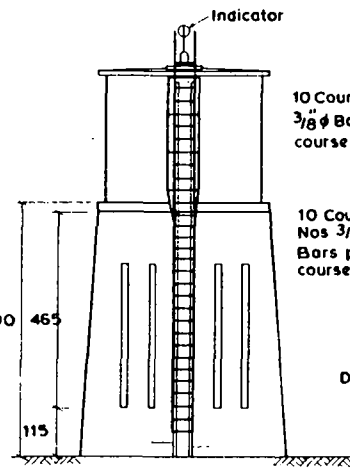
Asb. cem. $\phi < 3''$ use saddle

All dimensions in cm, unless otherwise shown

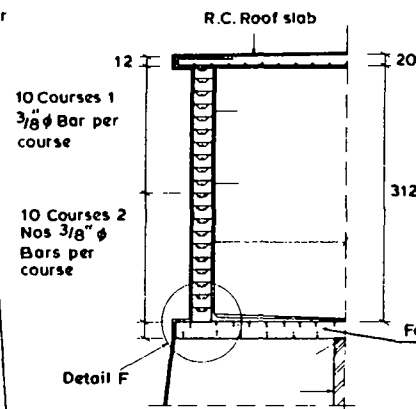
HOUSE CONNECTION



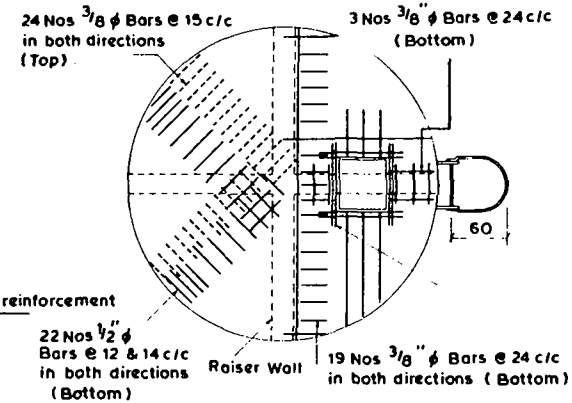
SECTION A-A



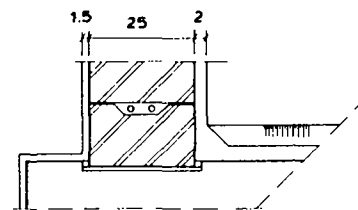
ELEVATOR



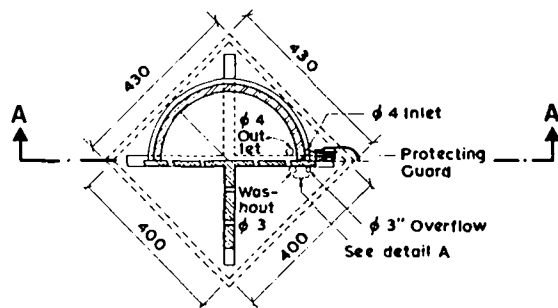
HALF SECTIONAL DETAIL OF TANK



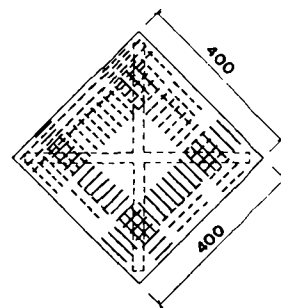
DETAIL OF FLOOR & ROOF REINFORCEMENT



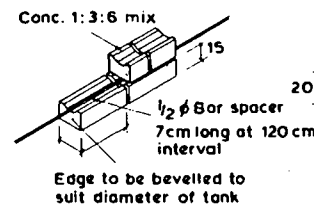
DETAIL OF SLIDING JOINT BETWEEN WALL & FLOOR SLAB



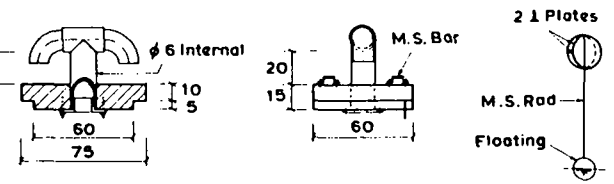
PART TANK AND WALL PLAN



DETAIL OF FOUNDATION REINFORCEMENT

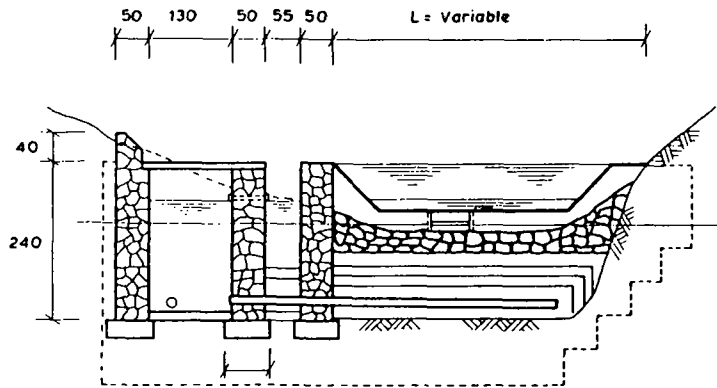


DETAIL OF BLOCK-WORK

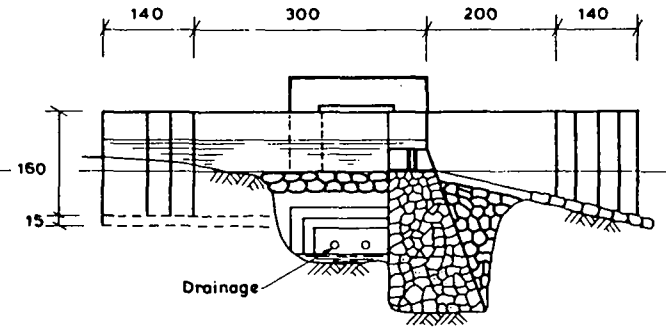


DETAIL OF VENTILATOR & TIMBER COVER

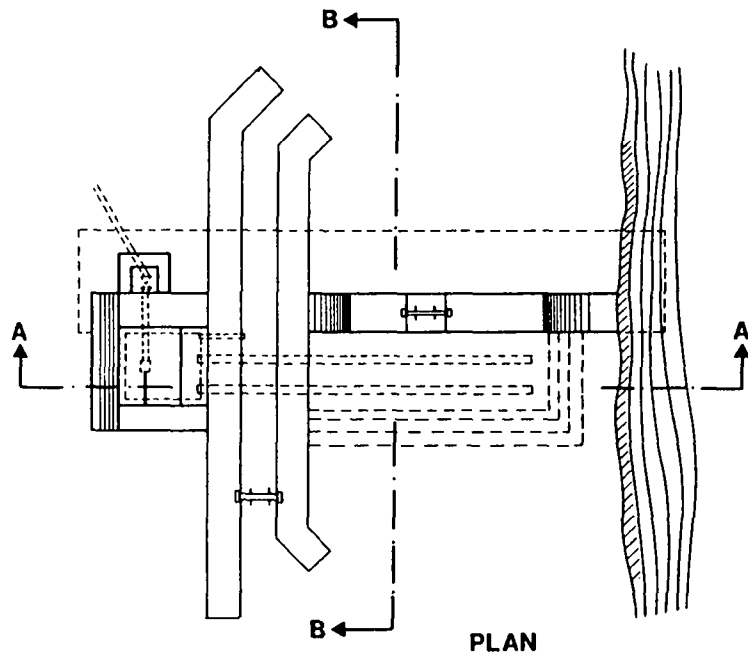
All dimensions in cm, unless otherwise shown



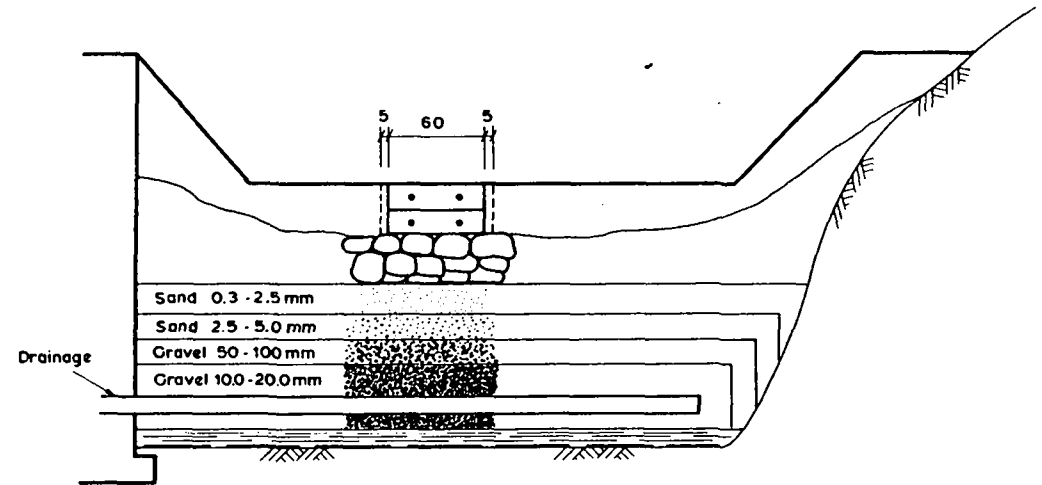
SECTION A-A



SECTION B-B

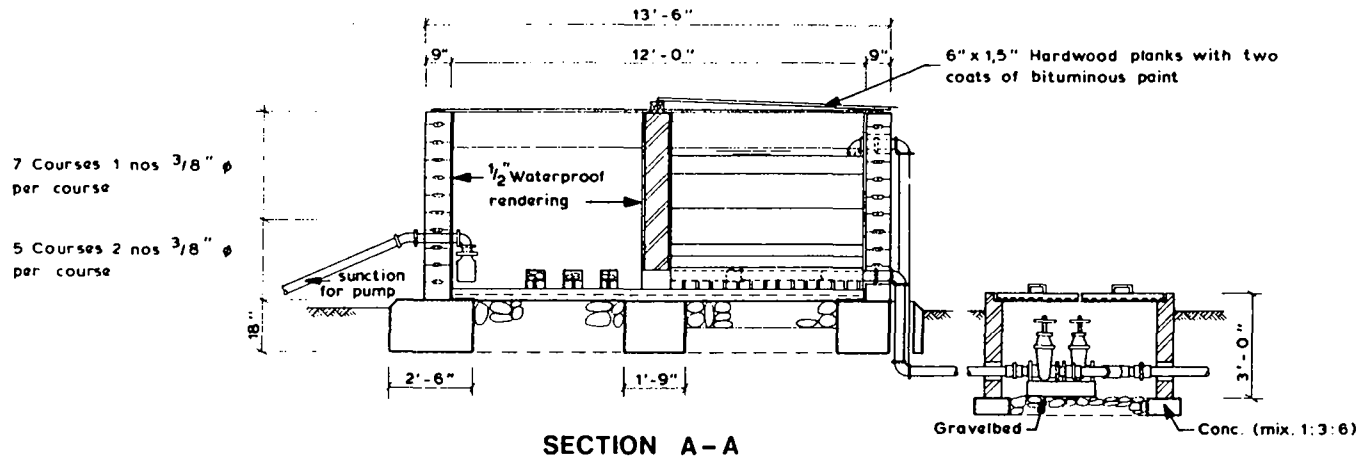


PLAN

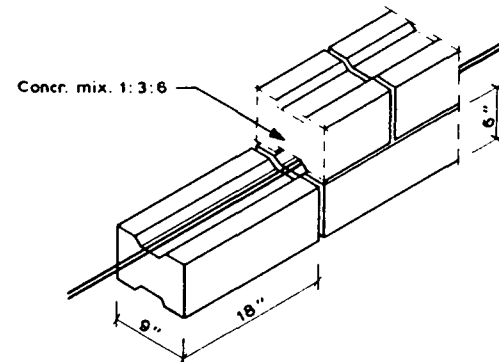


DETAIL OF FILTER

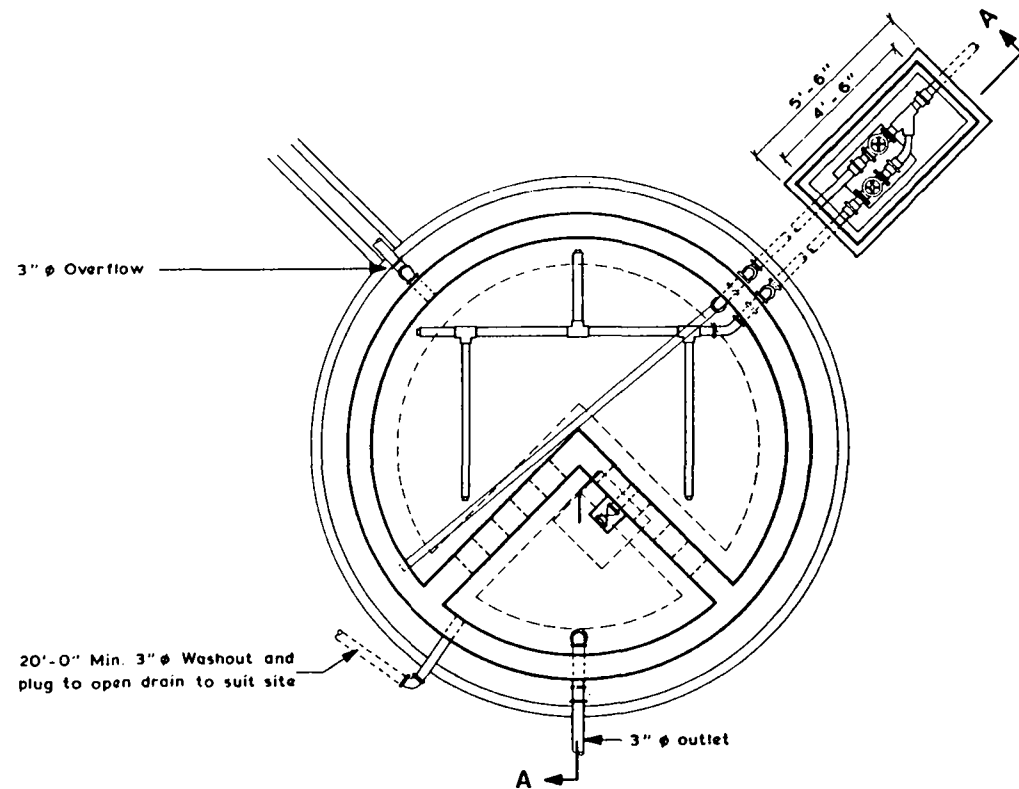
All dimensions in cm, unless otherwise shown



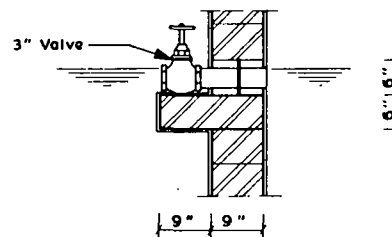
SECTION A-A



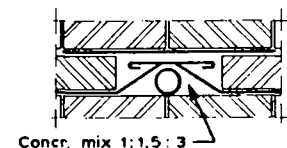
DETAIL OF BLOCK WORK



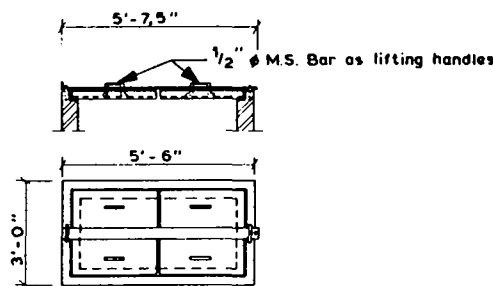
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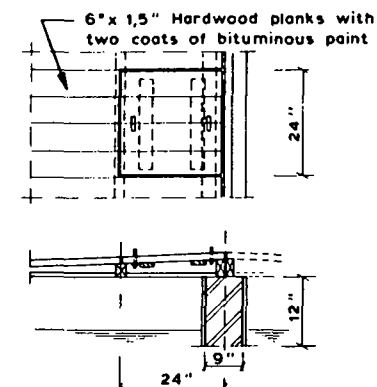
DETAIL OF EMERGENCY VALVE



RING REINFORCEMENT WHERE BROKEN BY PIPE



DETAIL OF LOCKING ARRANGEMENT

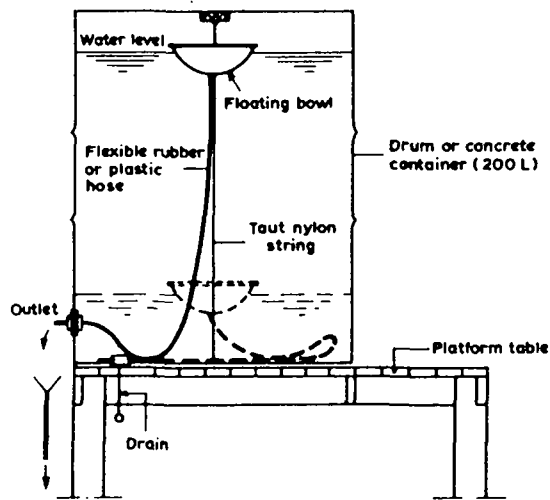


DETAIL OF MANHOLE COVER

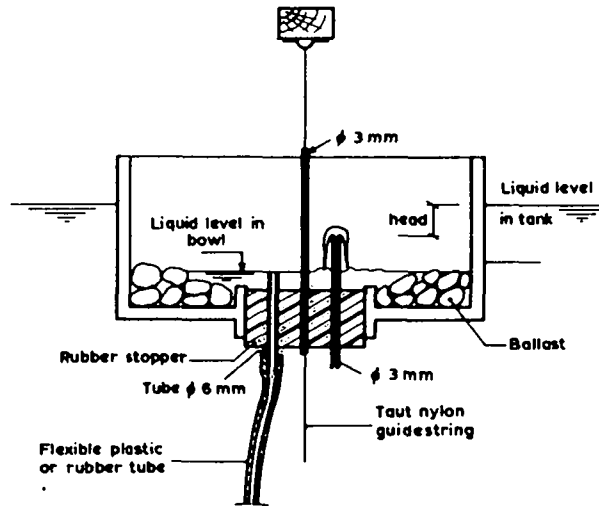
All dimensions in cm, unless otherwise shown

LOW HEAD RAPID GRAVITY FILTER WITH PUMP SUMP

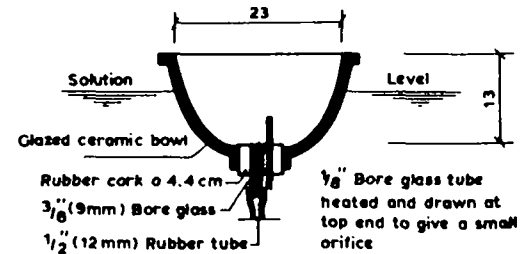
TANZANIA



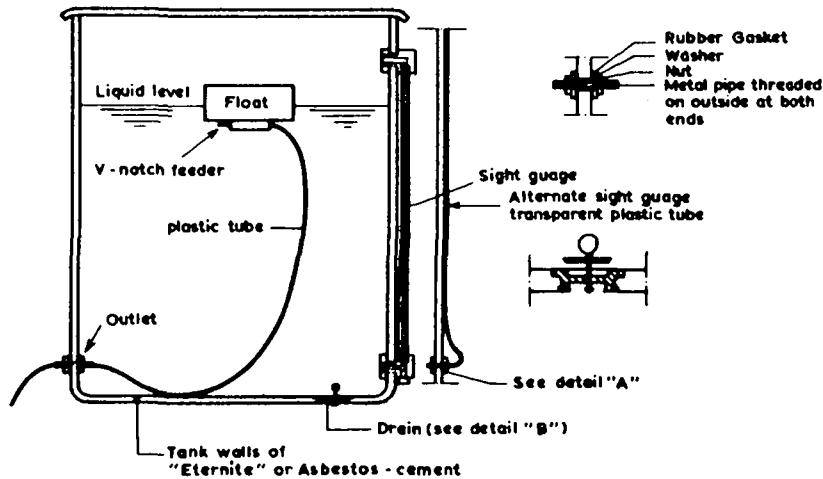
FLOATING BOWL SOLUTION FEEDER



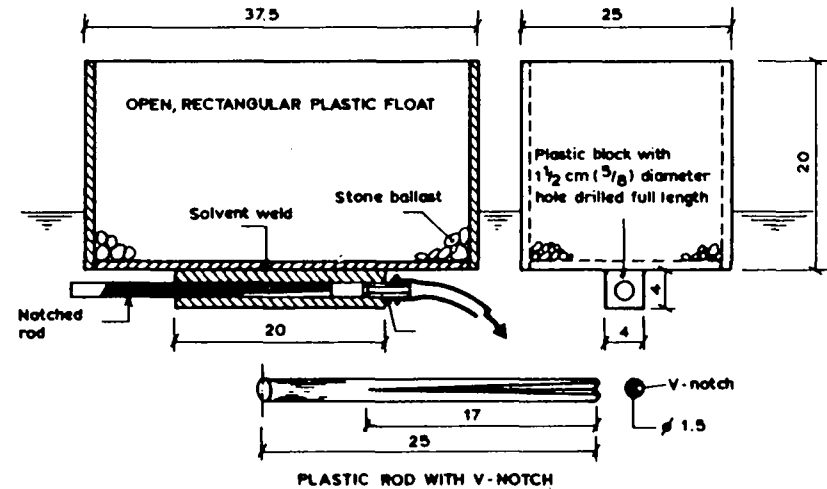
DETAIL OF FLOATING BOWL (SECTION)



DETAIL OF ALTERNATIVE BOWL (SECTION)



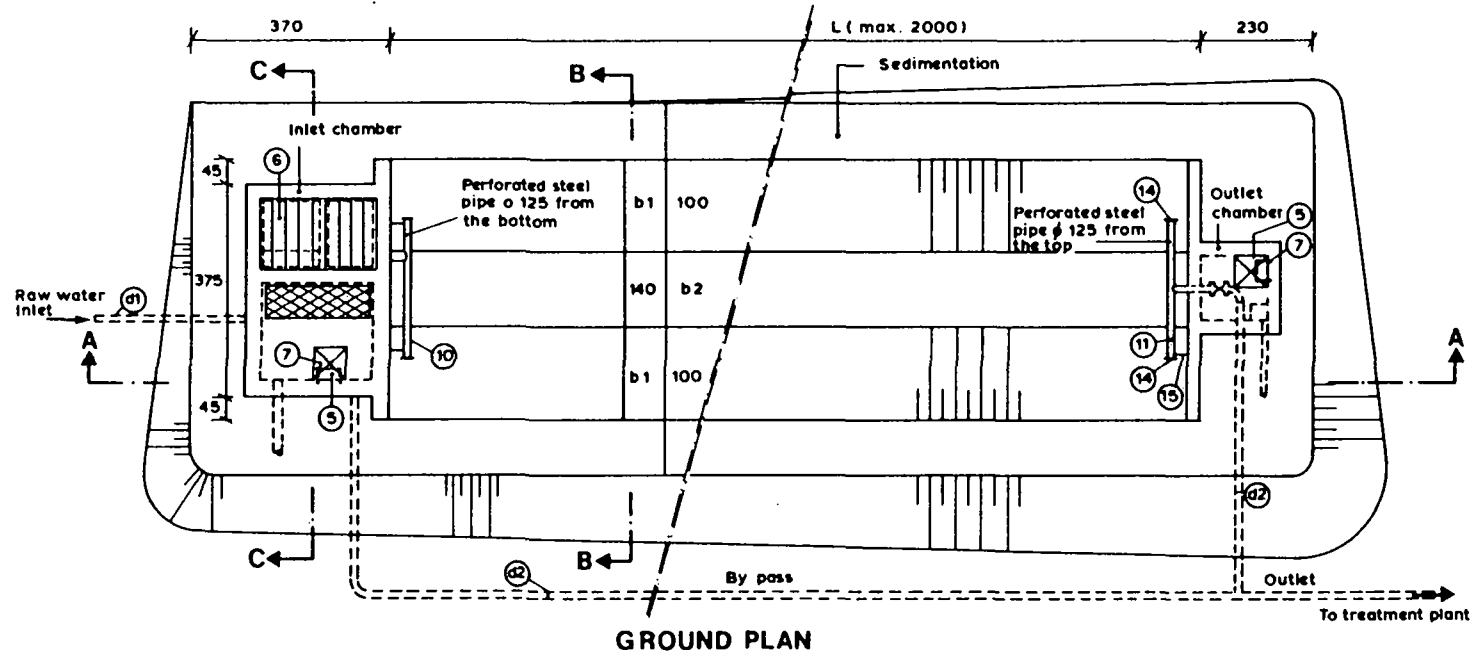
V-NOTCH CONSTANT-HEAD SOLUTION FEEDER



DETAIL OF FLOAT ASSEMBLY

All dimensions in cm, unless otherwise shown

HYPOCHLORITE SOLUTION FEEDERS



ELEVATION RELATIONS

| | |
|---------------------------------|----|
| Max. W. Level | e1 |
| Bottom of sedimentation tank | e2 |
| Reformed ground | e3 |
| Centre line level of pipe . 125 | e4 |
| Centre line level of inlet pipe | e5 |

BASIC DIMENSIONS

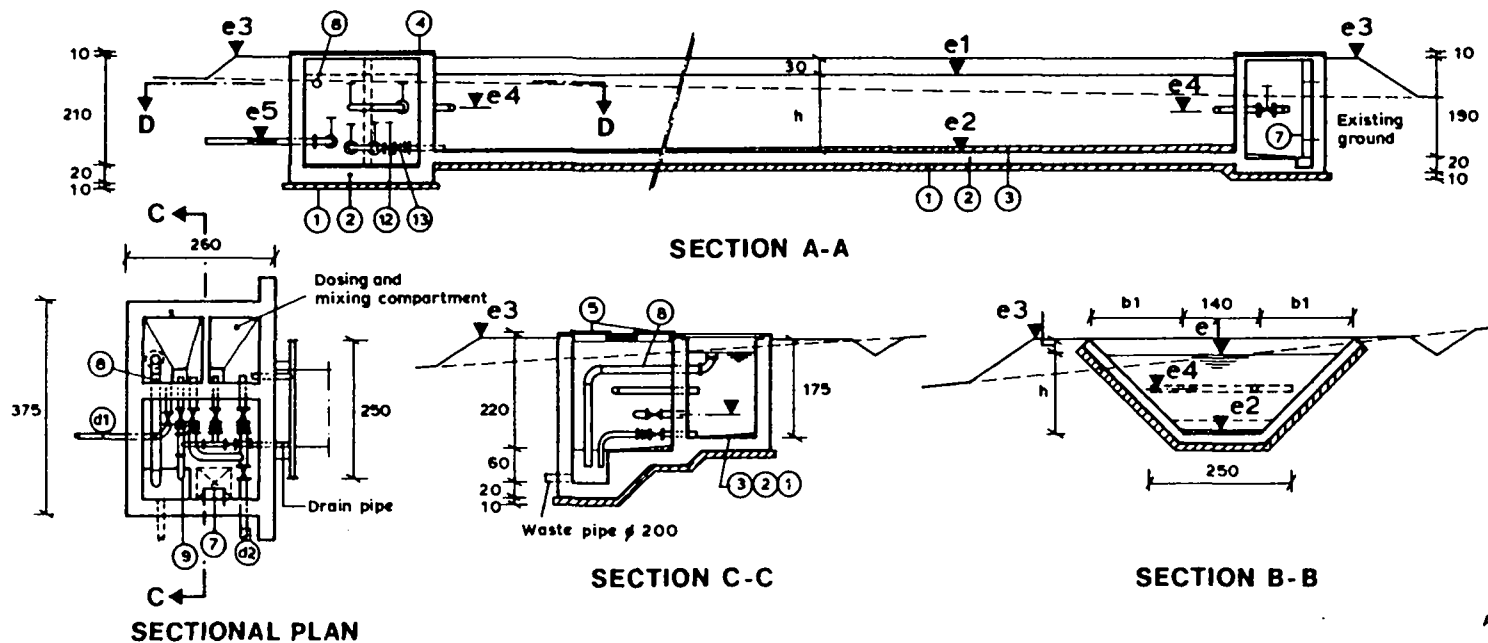
| | |
|----------------|------------------|
| Ground widths | b1, b2 |
| Lengths | L (max. 2000 cm) |
| Depth of water | h (max. 155 cm) |

DIAMETERS

| | |
|------------------|---------------|
| Inlet | d1 |
| Outlet (by pass) | d2 |
| Overflow | d3 = . 150 mm |
| Drain pipe | d4 = . 80 mm |

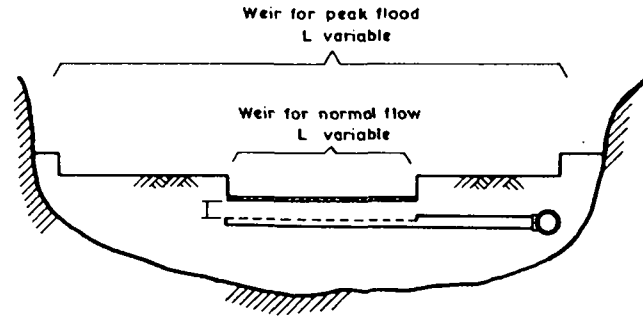
LEGEND:

1. Blinding concrete
2. Watertight reinforced concrete
3. Benching to gradient
4. Cement screed
5. Steel cover
6. Wood cover
7. Steel ladder
8. Overflow
9. Flanged pipes and fittings in chambers
10. Perforated distribution pipe
11. Perforated collection pipe
12. Hand operated valve
13. Make-up piece
14. Blind flange
15. Anchoring



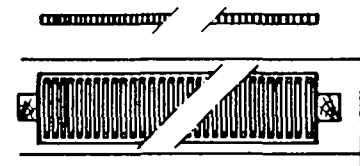
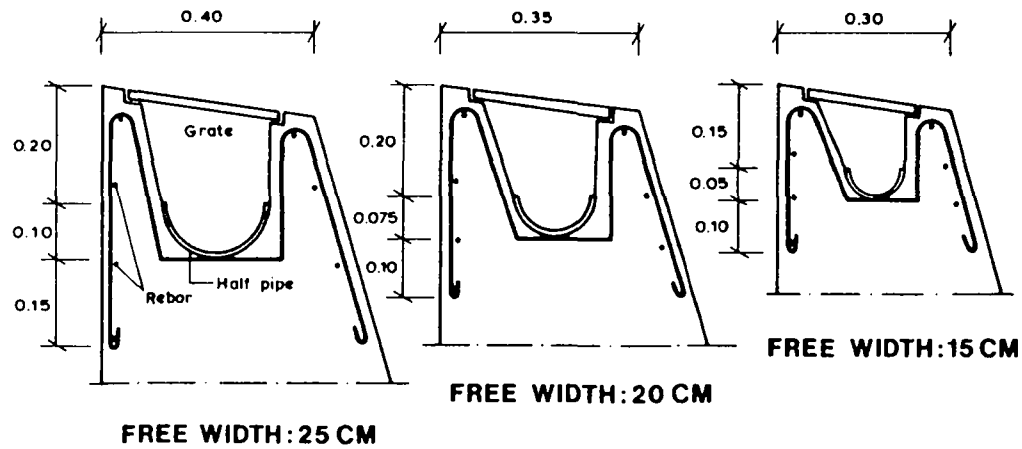
SEDIMENTATION TANK

All dimensions in cm, unless otherwise shown

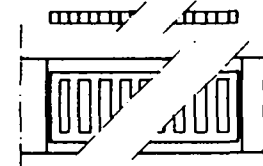


INLET TYPES

| TYPE | DIMENSIONS | | APROX CONTRACTION COEFF. | |
|------|------------|--------|--------------------------|----------------|
| | | | Simple grate | Combined grate |
| 1 | 1 cm | 1.0 cm | 0.45 | 0.30 |
| 2 | 1 cm | 2 cm | 0.55 | 0.37 |
| 3 | 1.5 cm | 1 cm | 0.45 | 0.30 |
| 4 | 1.5 cm | 2 cm | 0.55 | 0.37 |



SIMPLE GRATE



COMBINED GRATE

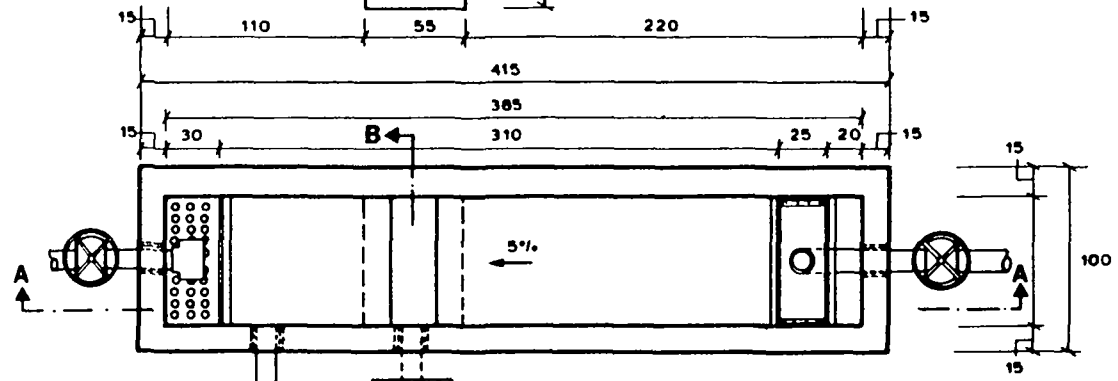
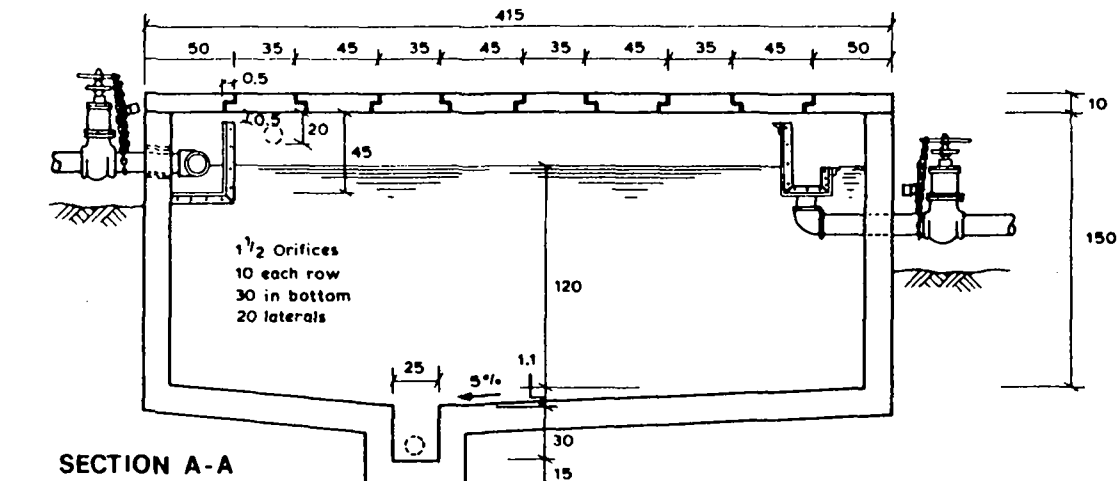


GRATE AUDIORAGE

| Free area per linear meter in cms ² | Free width : 25 cms | | | | Free width : 20 cms | | | | Free width : 15 cms | | | |
|--|----------------------------|-----------------------------|------------------------------|-------------------------------|----------------------------|-----------------------------|------------------------------|------------------------------|----------------------------|-----------------------------|------------------------------|-------------------------------|
| | ϕ 1cm c 1cm (Type 1) | ϕ 1cm c 2cms (Type 2) | ϕ 1.5cm c 1cm (Type 3) | ϕ 1.5cm c 2cms (Type 4) | ϕ 1cm c 1cm (Type 1) | ϕ 1cm c 2cms (Type 2) | ϕ 1.5cm c 1cm (Type 3) | ϕ 1.5cm c 1cm (Type 4) | ϕ 1cm c 1cm (Type 1) | ϕ 1cm c 2cms (Type 2) | ϕ 1.5cm c 1cm (Type 3) | ϕ 1.5cm c 2cms (Type 4) |
| Simple grate | 1.200 | 1.620 | 925 | 1.350 | 960 | 1.300 | 740 | 1.080 | 720 | 975 | 555 | 810 |
| Combined grate | 775 | 1.050 | 600 | 850 | 620 | 840 | 480 | 680 | 485 | 630 | 360 | 510 |

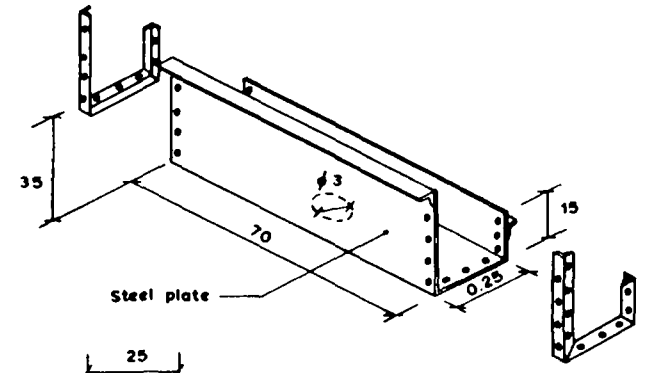
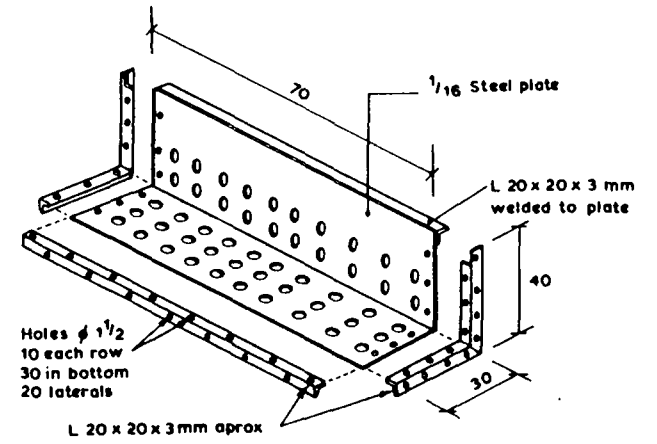
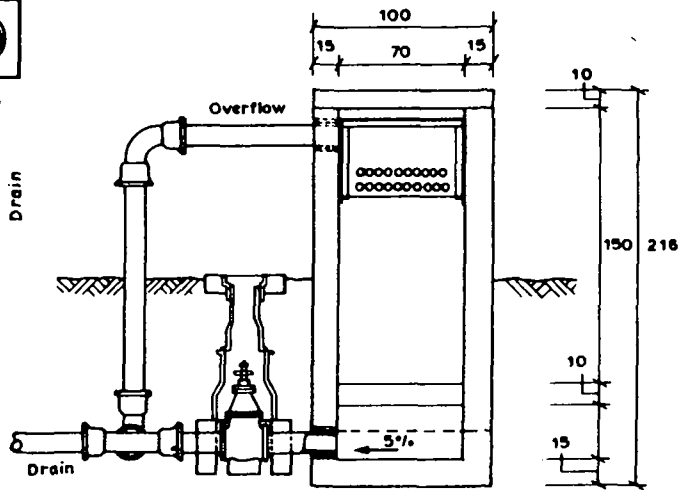
All dimensions in cm, unless otherwise shown

WEIR INTAKE



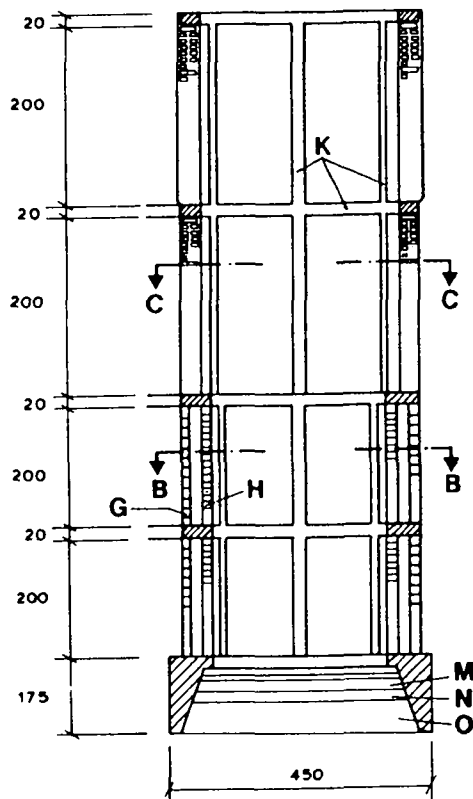
FOR WATER TEMP. $T = 20\text{ }^{\circ}\text{C}$
 REMOVAL OF PARTICLES
 SIZE $7.5 \times 10^{-1}\text{ cm}$

SECTION B-B

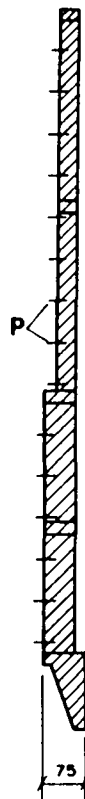


All dimensions in cm, unless otherwise shown

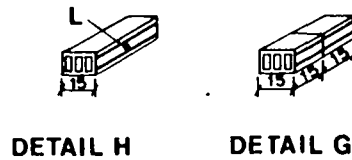
GRIT CHAMBER



CROSS-SECTION A - A

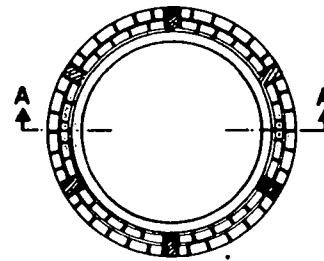


CROSS-SECTION D - D

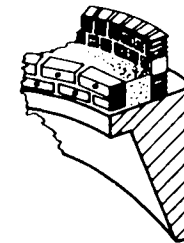


DETAIL H

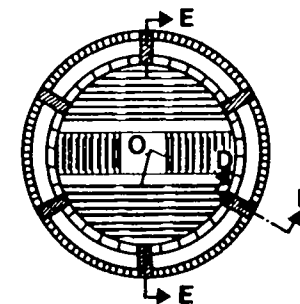
DETAIL G



SECTION C - C



DETAIL F

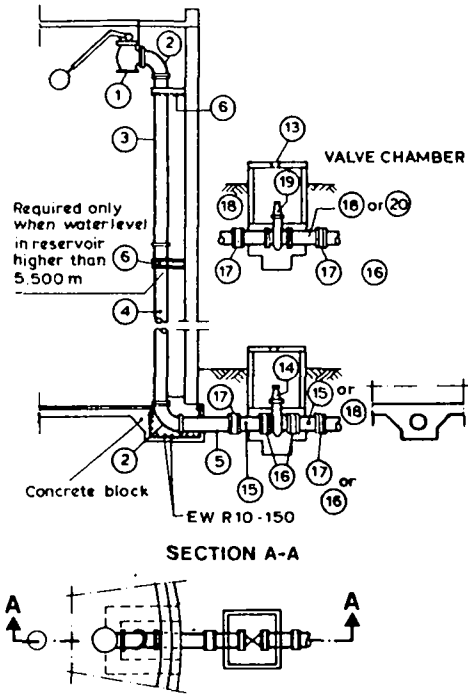


SECTION B - B

- A-E = Cross sections
- F = Reinforced-concrete shoe
- G = Hollow bricks laid sideways. Water enters the filter section I through the holes in the brick.
- H = Hollow bricks laid flat. Water enters the well through small holes designated by L. See detail H and F.
- I = Sand filter section between brick walls
- J = Height of filter section, varies with depth of penetration into ground water
- K = Reinforced-concrete beams
- L = Small perforations through bricks H. See detail F.
- M = Layer of round stones
- N = Layer of gravel
- O = Layer of coarse sand
- P = Iron steps, 50 mm (20 in.) apart
- Q = Grate made of concrete beams

AMAZON WELL

INLET PIPE



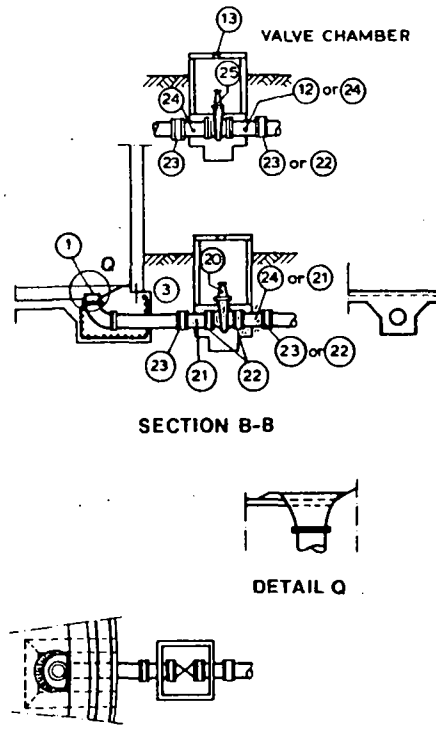
SECTION A-A

LIST OF MATERIALS

1. Float valve
2. D1 FL short bend 90
3. D1 pipe double flanged L = 4000
4. D1 pipe double flanged
5. D1 pipe single flanged
6. Pipe support
7. Pipe hanger
8. Surface box
9. Plain ended sluice valve
15. D1 pipe plain ended
16. Viking Johnson reducing coupling
17. Viking Johnson coupling
18. D1 pipe single flanged
19. Flanged ended sluice valve
20. D1 pipe double flanged.

• IF NOT INDICATED OTHERWISE
 •• ONLY IN CASE OF DIFFERENT OUTSIDE DIAMETERS
 OTHERWISE ORDINARY VIKING JOHNSON COUPLING

OUTLET PIPE



SECTION B-B

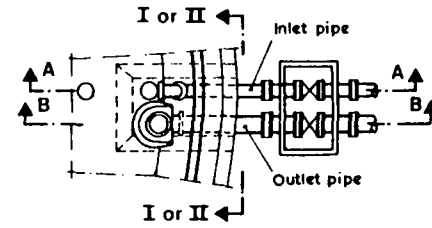
DETAIL Q

PLAN

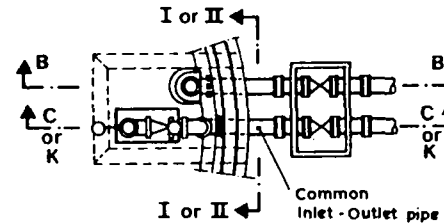
LIST OF MATERIALS

- 1 DI FL BELLMOUTH
- 2 DI FL SHORT BEND 90°
- 3 DI PIPE SINGLE FLANGED
- 12 D1 PIPE DOUBLE FLANGED
- 13 SURFACE BOX
- 20 PLAIN ENDED SLUICE VALVE
- 21 D1 PIPE PLAIN ENDED
- 22 VIKING JOHNSON REDUCING COUPLING
- 23 VIKING JOHNSON COUPLING
- 24 D1 PIPING SINGLE FLANGED
- 25 FLANGED ENDED SLUICE VALVE

INLET PIPE & OUTLET PIPE IN SAME BLOCK



COMMON INLET-OUTLET PIPE AND OUTLET PIPE IN SAME BLOCK



SECTION I-I

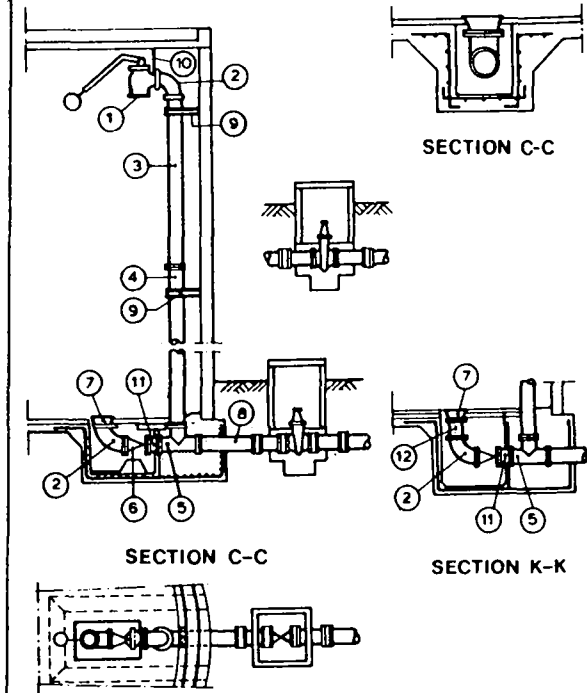
FOR PIPES AT DIFFERENT LEVELS

SECTION II-II

NOTES:

1. For section A-A and appurtenment list of materials see 'inlet pipe'
2. For section B-B and appurtenment list of materials see 'outlet pipe'.
3. For section C-C, K-K and appurtenment list of materials see 'common inlet-outlet pipe'.
4. For dimension S see 'common inlet-outlet pipe'.

COMMON INLET-OUTLET PIPE



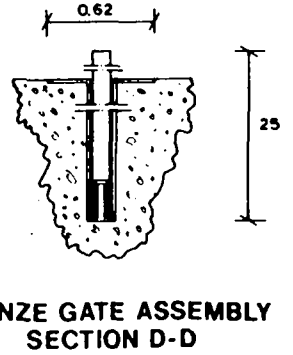
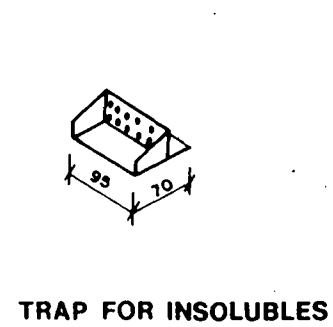
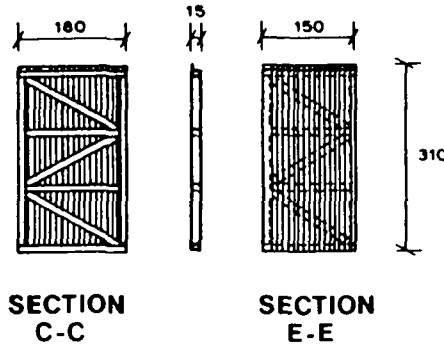
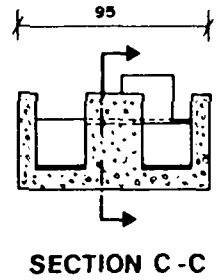
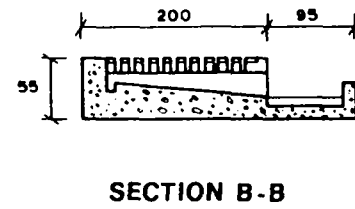
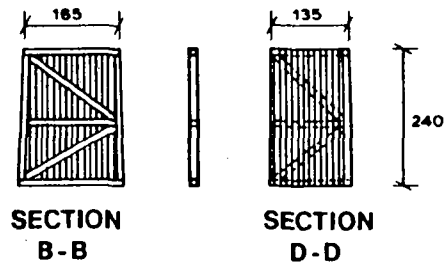
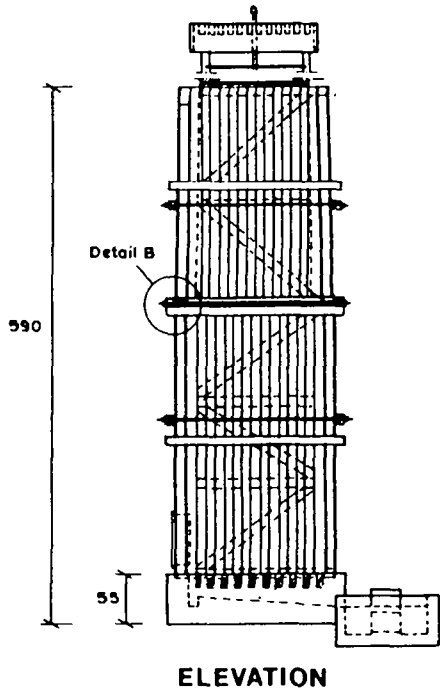
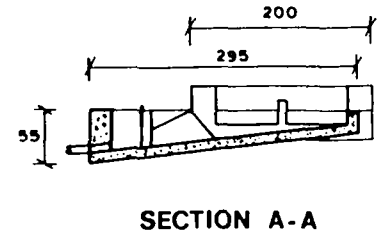
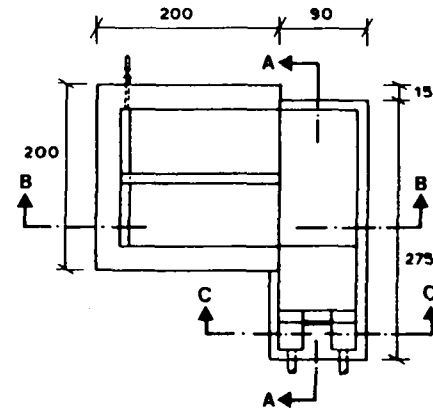
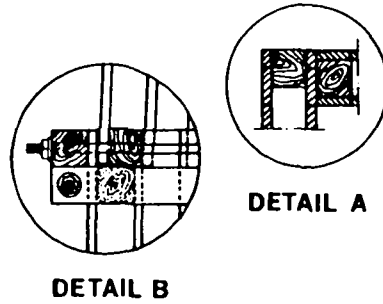
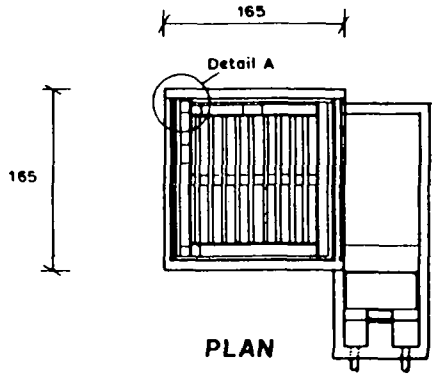
SECTION C-C

SECTION K-K

LIST OF MATERIALS

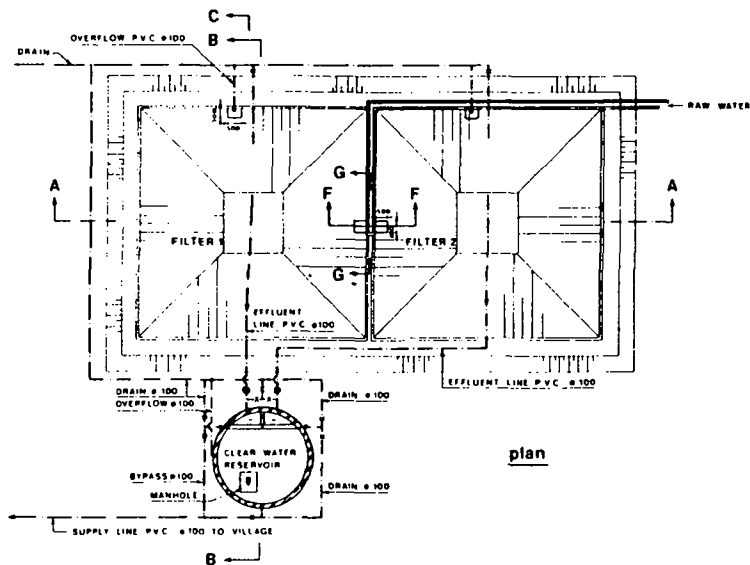
1. FLOAT VALVE
2. D1 FL SHORT BEND 90°
3. D1 PIPE DOUBLE FL L=4000
4. D1 PIPE DOUBLE FL
5. D1 TEE FLANGED
6. CHECK VALVE
7. D1 FL BELLMOUTH
8. D1 PIPE SINGLE FLANGED
9. PIPE SUPPORT
10. PIPE MANGER
11. D1 PIPE DOUBLE FL L = 200
12. D1 PIPE DOUBLE FL L = 200 min
(FOR SECT. K-K ONLY)
13. SURFACE BOX
14. PLAIN ENDED VALVE
14. PLAIN ENDED SLUICE VALVE
15. D1 PIPE PLAIN ENDED
16. VIKING JOHNSON REDUCING COUPLING **
17. VIKING JOHNSON COUPLING
18. D1 PIPE SINGLE FLANGED
19. FLANGE ENDED SLUICE VALVE
20. D1 PIPE DOUBLE FLANGED

DETAILS OF INLET & OUTLET PIPES

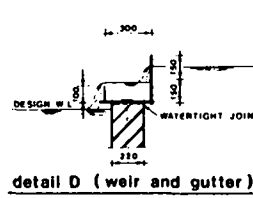


All dimensions in cm, unless otherwise shown

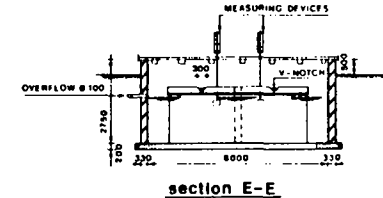
ALUM DOSING TOWER



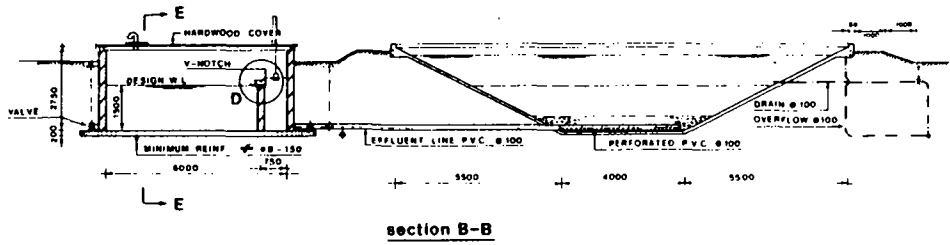
plan



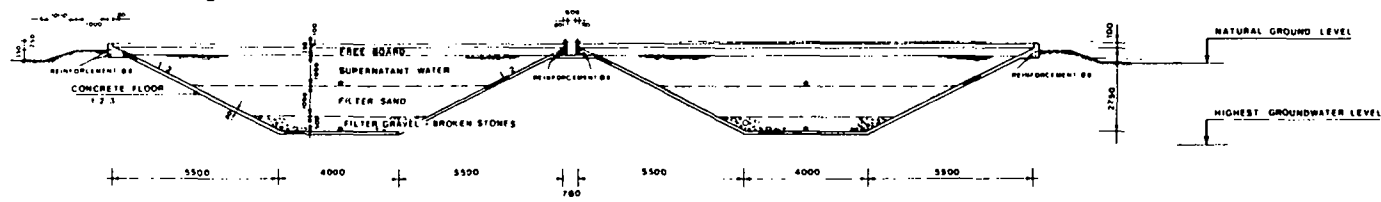
detail D (weir and gutter)



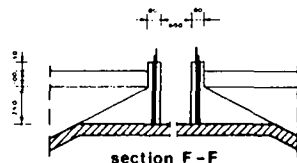
section E-E



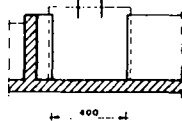
section B-B



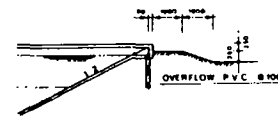
section A-A



section F-F

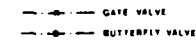


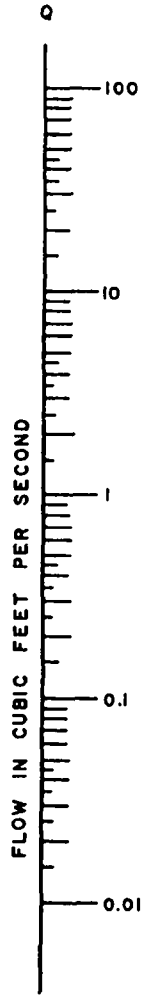
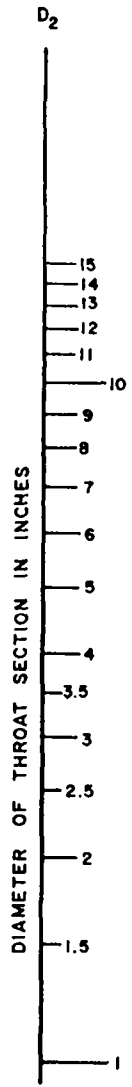
section G-G



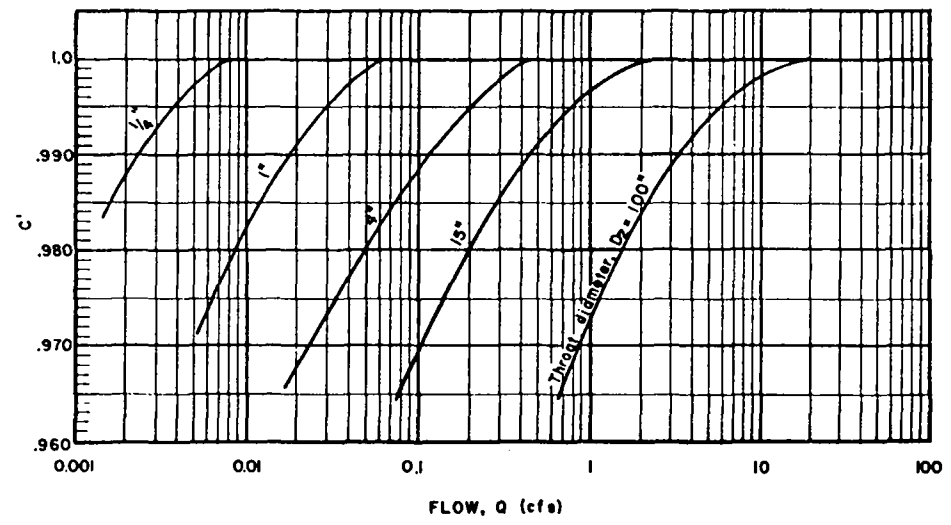
section C

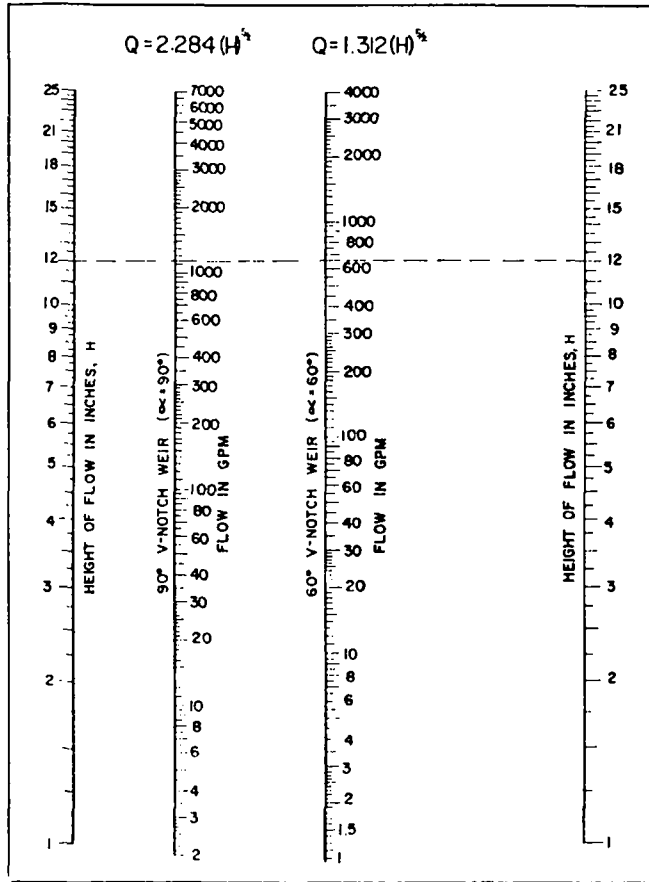
| BILL OF QUANTITIES | |
|-----------------------------------|--------------------|
| MATERIAL | QUANTITIES |
| CONCRETE 1:2:3 | 75 m ³ |
| REINFORCEMENT STEEL | 1000 kg |
| MASONRY | 10 m ³ |
| FILTER SAND 015 - 0.35 mm 1000 mm | 700 m ³ |
| COARSE SAND 100 - 1.40 mm 100 mm | 500 mm |
| GRAVEL 400 - 5.60 mm 100 mm | |
| GRAVEL 16 - 43 mm 150 mm | |
| BROKEN STONES 50 - 100 mm 150 mm | |
| GATE VALVES | 10 |
| BUTTERFLY VALVES | 2 |
| P.V.C. PIPES Ø 100 | 250 m ³ |
| 90° BENDS | 15 |
| T-JOINTS | 15 |



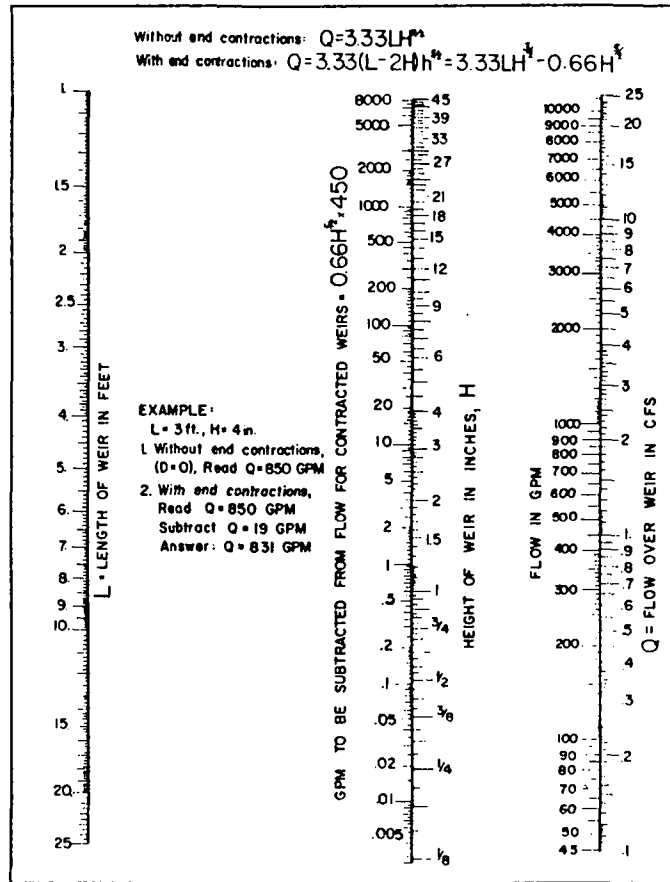


$$Q = \frac{CA_2 \sqrt{2g \Delta H}}{\sqrt{1 - \left(\frac{D_2}{D_1}\right)^4}}$$

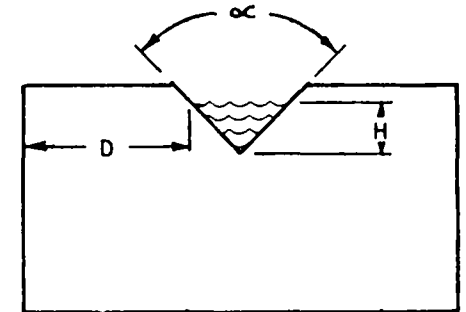




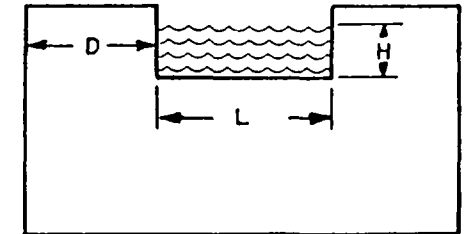
Nomograph for 60° and 90° V-notch weirs.



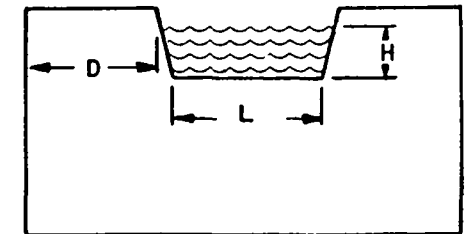
Nomograph for rectangular weirs.



V-NOTCH WEIR

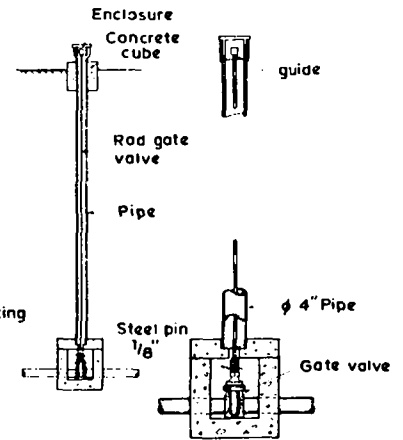
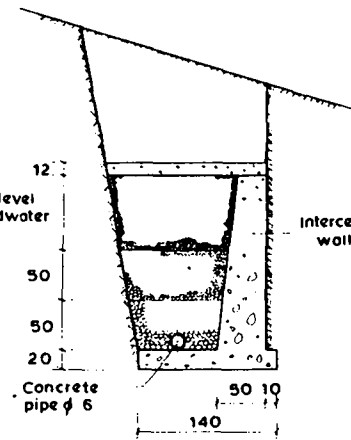
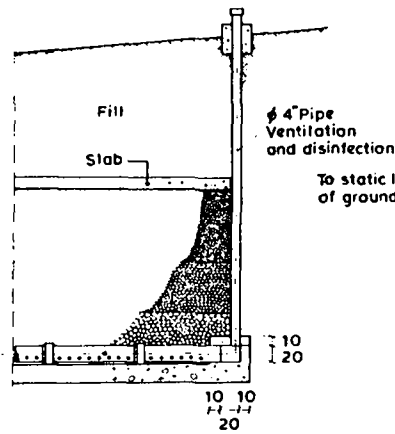
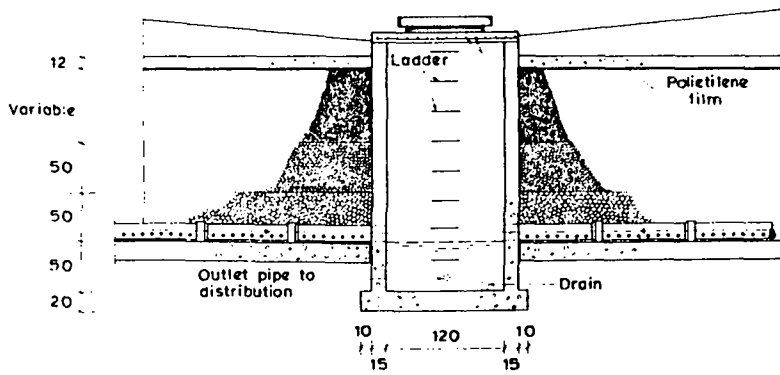
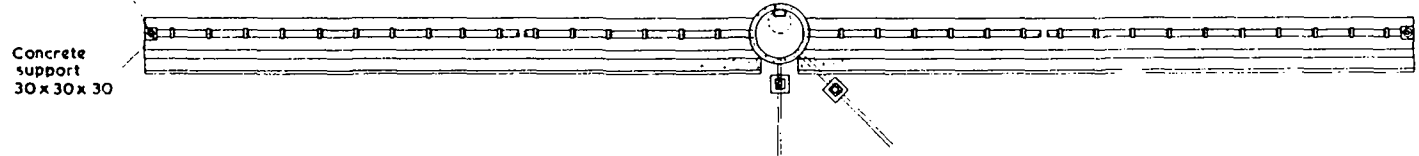
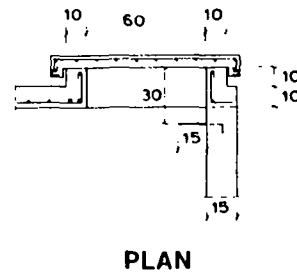
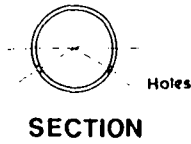
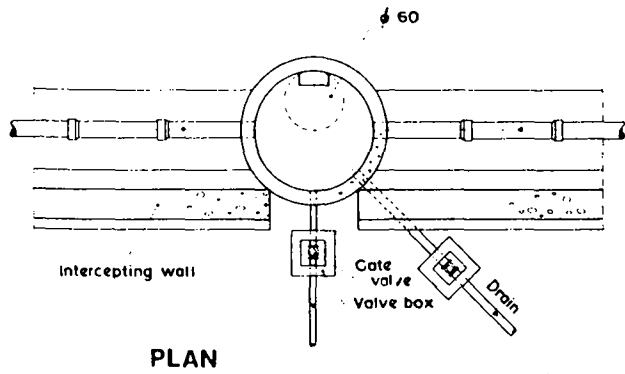


RECTANGULAR WEIR



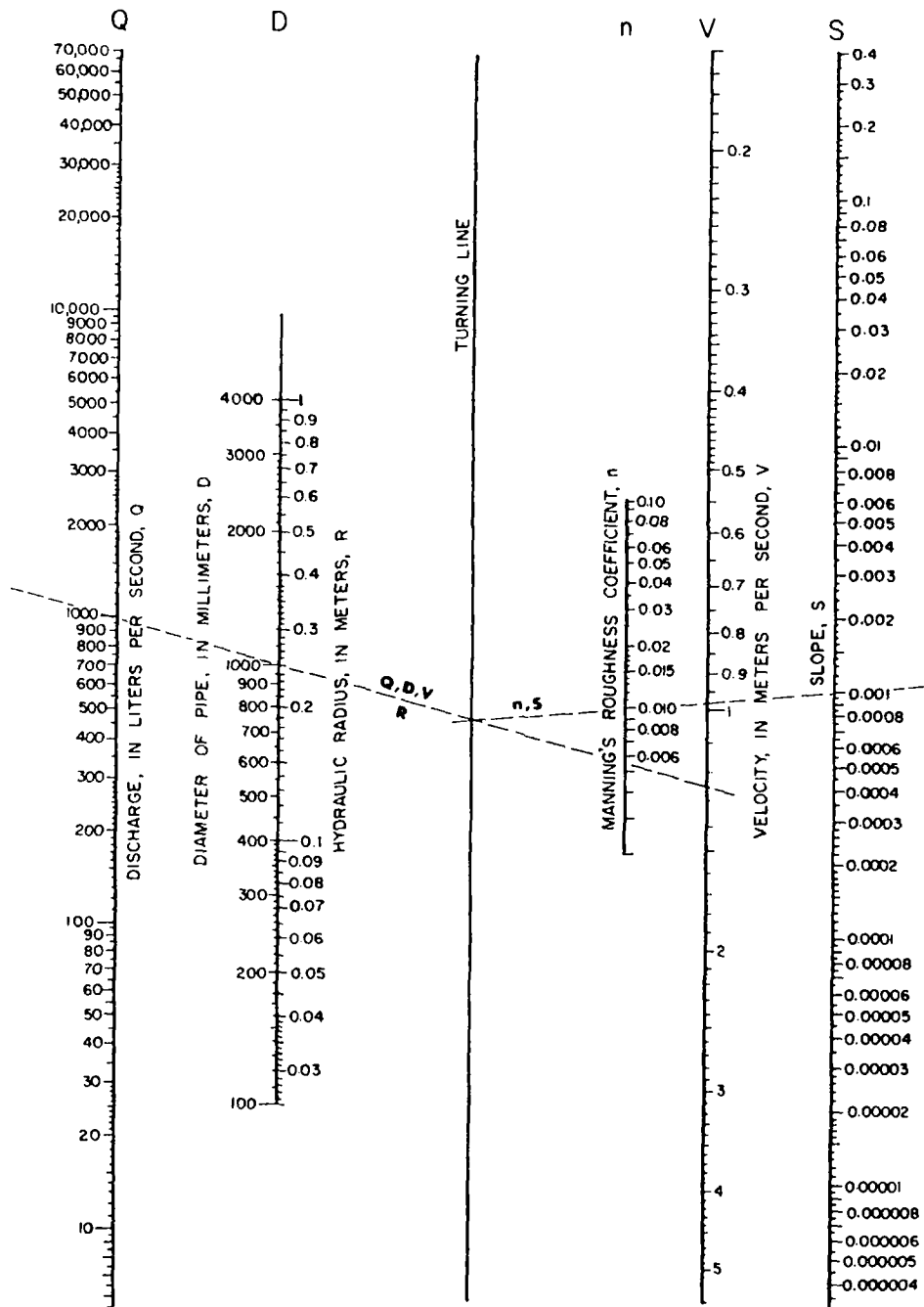
CIPOLLETTI WEIR

Types of weirs.



LONGITUDINAL SECTION

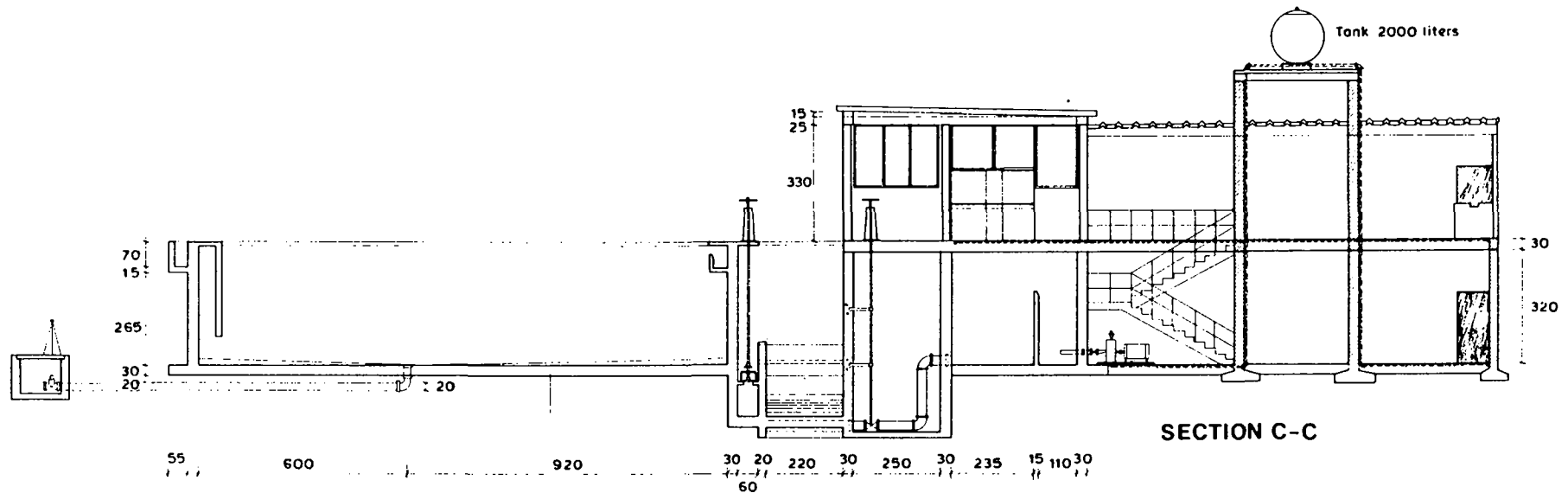
INFILTRATION GALLERY



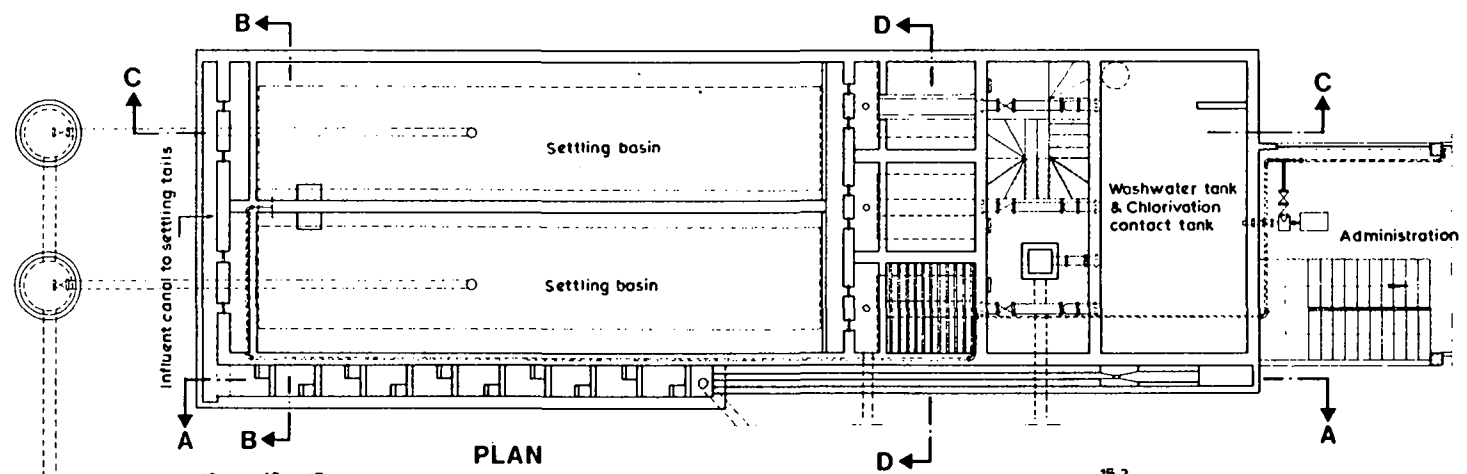
NOMOGRAPH FOR SOLUTION OF THE MANNING FORMULA (METRIC UNITS)

Values of "n" in Manning Formula

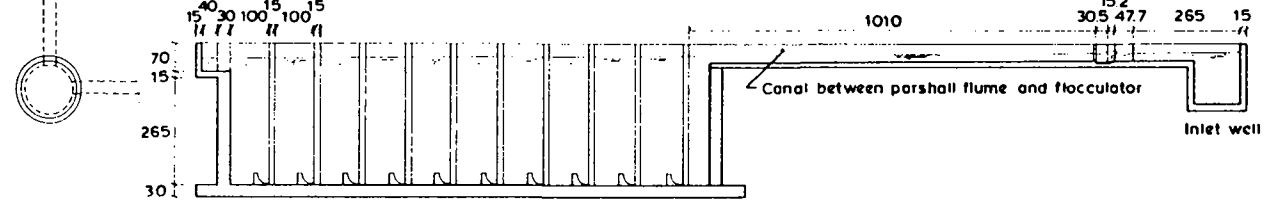
| Type of Channel | Value of "n" |
|---|----------------|
| Closed Conduits | |
| Cast Iron | 0.013 |
| Concrete | |
| Straight | 0.011 |
| With Bends | 0.013 |
| Unfinished | 0.014 |
| Clay, Vitrified | 0.012 |
| Corrugated Metal | 0.024 |
| Brickwork | 0.013 |
| Sanitary Sewers, coated with slime | 0.013 |
| Open Channels; Lined | |
| Asphalt | 0.013 to 0.016 |
| Brick | 0.013 to 0.015 |
| Concrete | |
| Trowel Finish | 0.013 |
| Float Finish | 0.015 |
| Unfinished | 0.017 |
| Concrete, bottom float finished, with sides of | |
| Dressed stone | 0.017 |
| Random stone | 0.020 |
| Cement Rubble masonry | 0.025 |
| Dry Rubble or riprap | 0.030 |
| Gravel Bottom, sides of | |
| Random stone | 0.023 |
| Riprap | 0.033 |
| Excavated or Dredged | |
| Earth, straight and uniform | 0.018 to 0.027 |
| Earth, winding and sluggish | 0.025 to 0.040 |
| Channels, not maintained, weeds and brush uncut | 0.080 to 0.100 |
| Natural Stream | |
| Streams | |
| Clean stream, straight | 0.030 |
| Stream with pools, sluggish reaches, heavy underbrush | 0.100 |
| Flood Plains | |
| Pasture, no brush | 0.030 |
| With some brush | 0.050 to 0.100 |



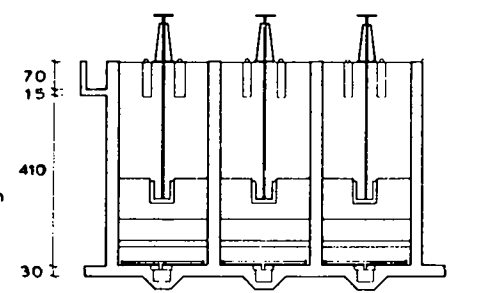
SECTION C-C



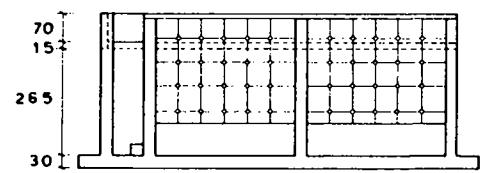
PLAN



SECTION A-A



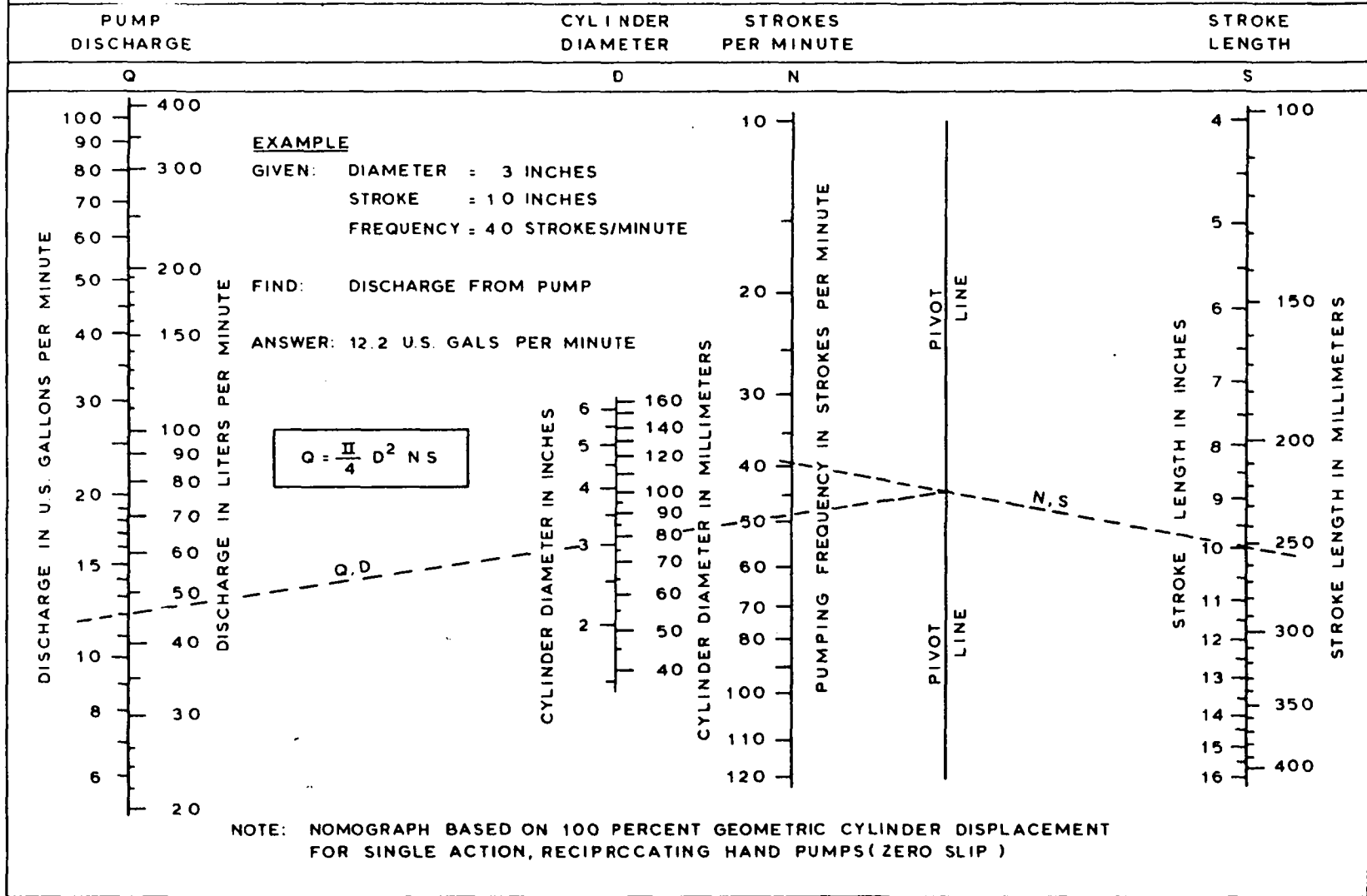
SECTION D-D



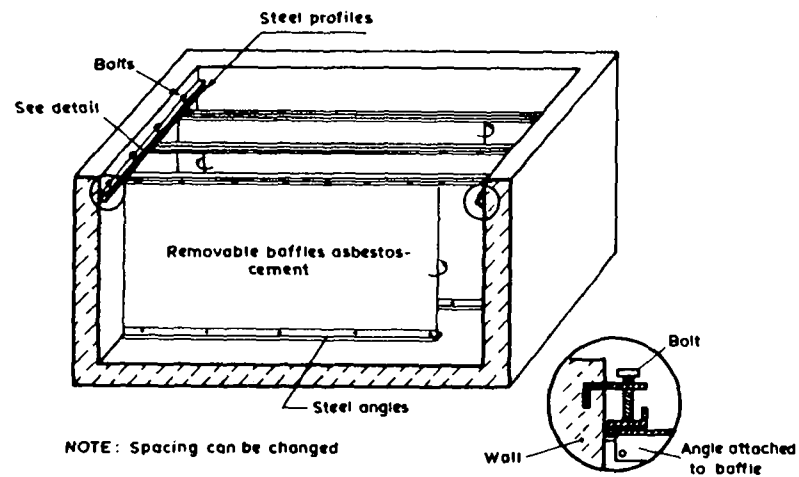
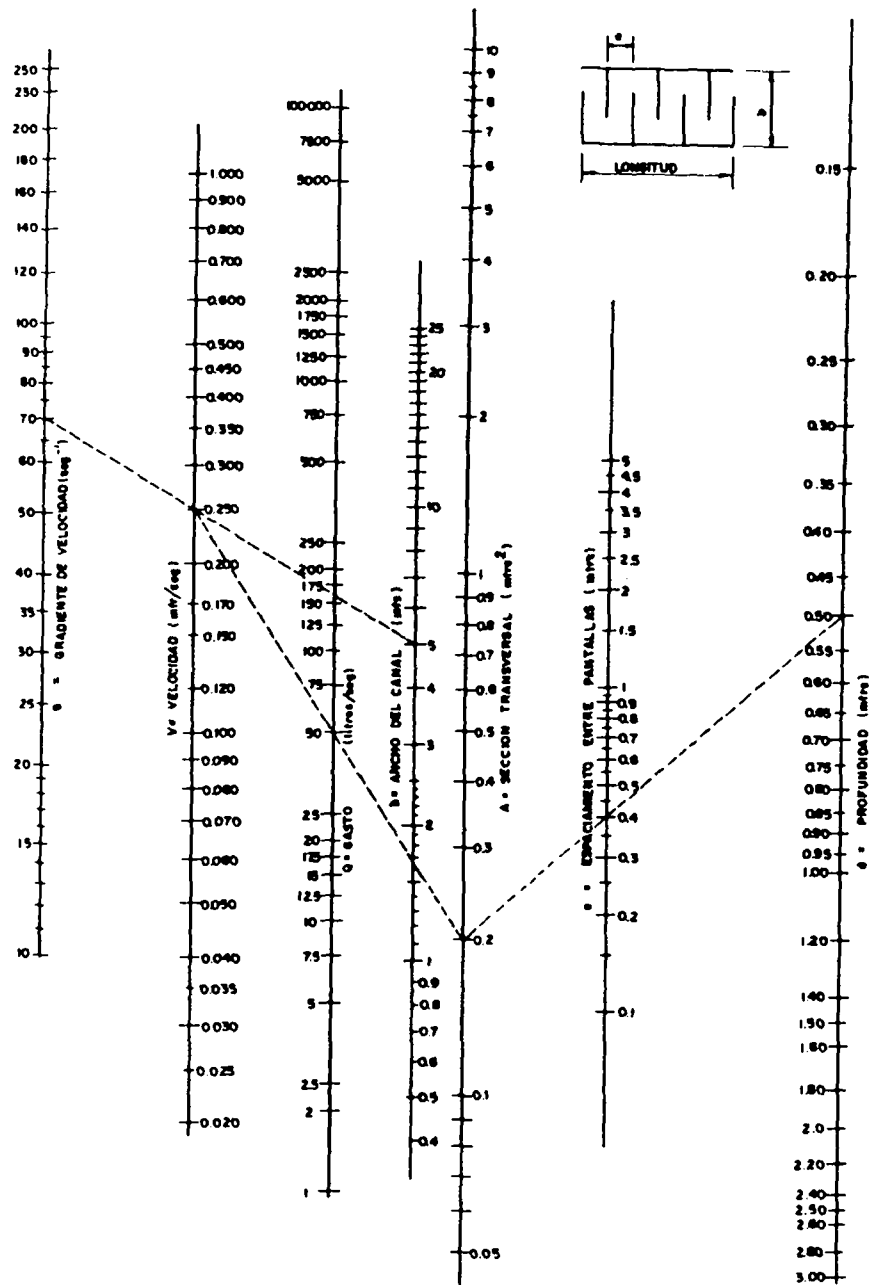
SECTION B-B

All dimensions in cm, unless otherwise shown

NOMOGRAPH FOR HAND PUMP DISCHARGE

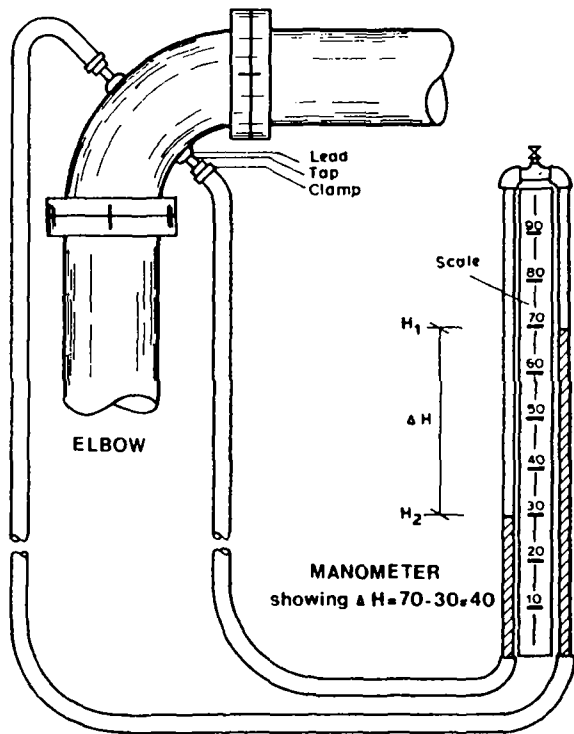


NOMOGRAPH FOR HAND PUMP DISCHARGE

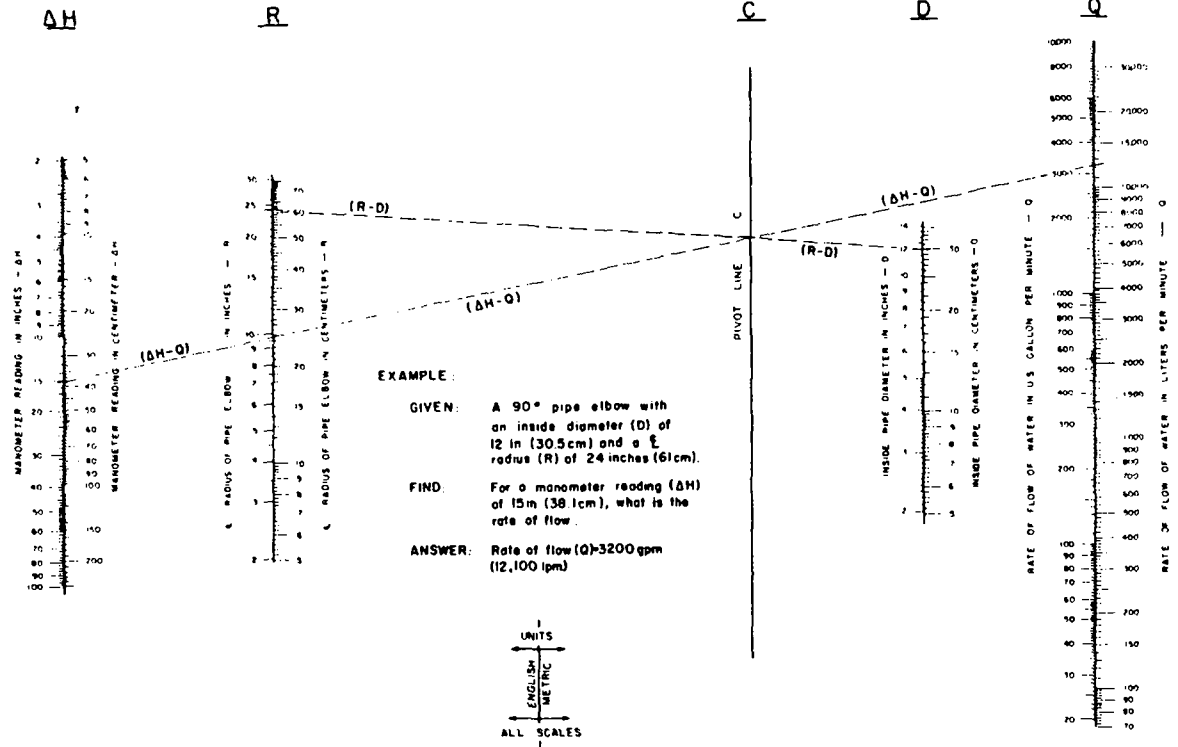


NOTE: Spacing can be changed

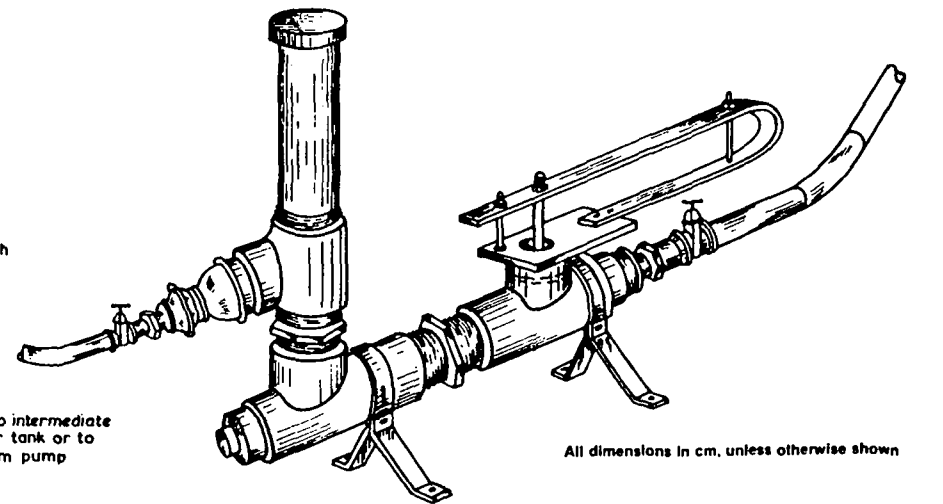
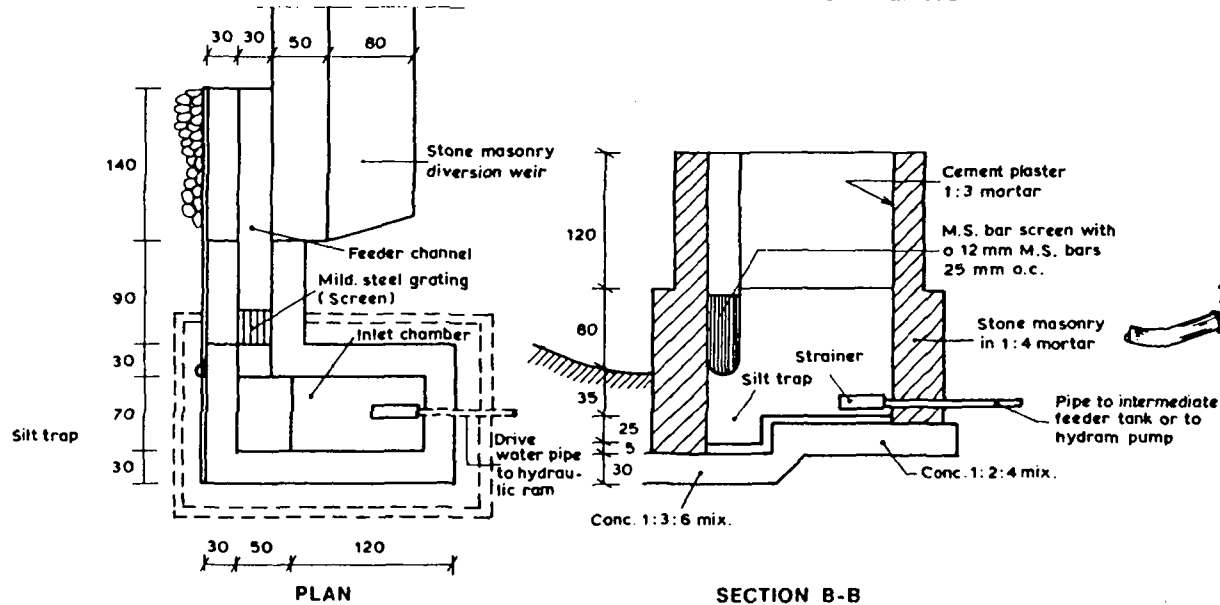
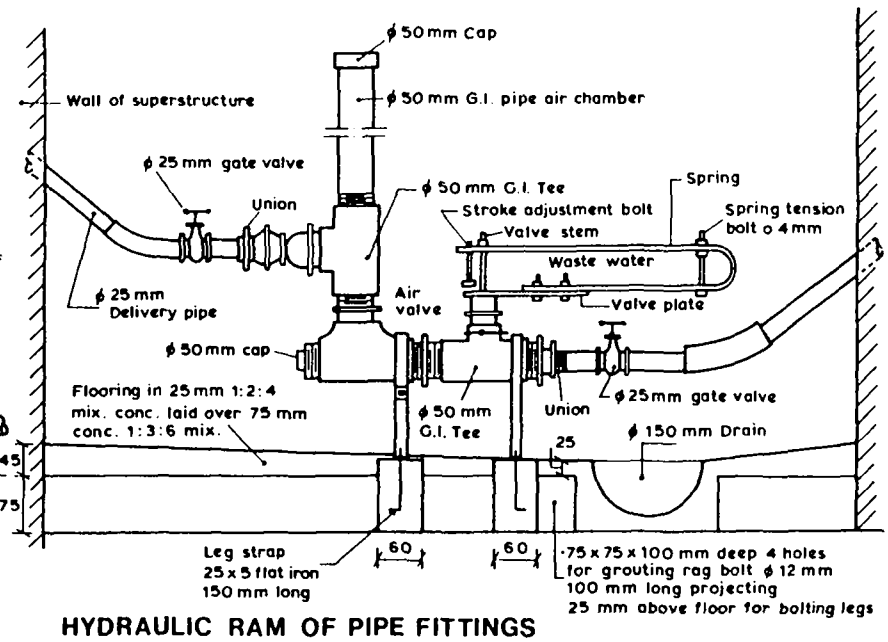
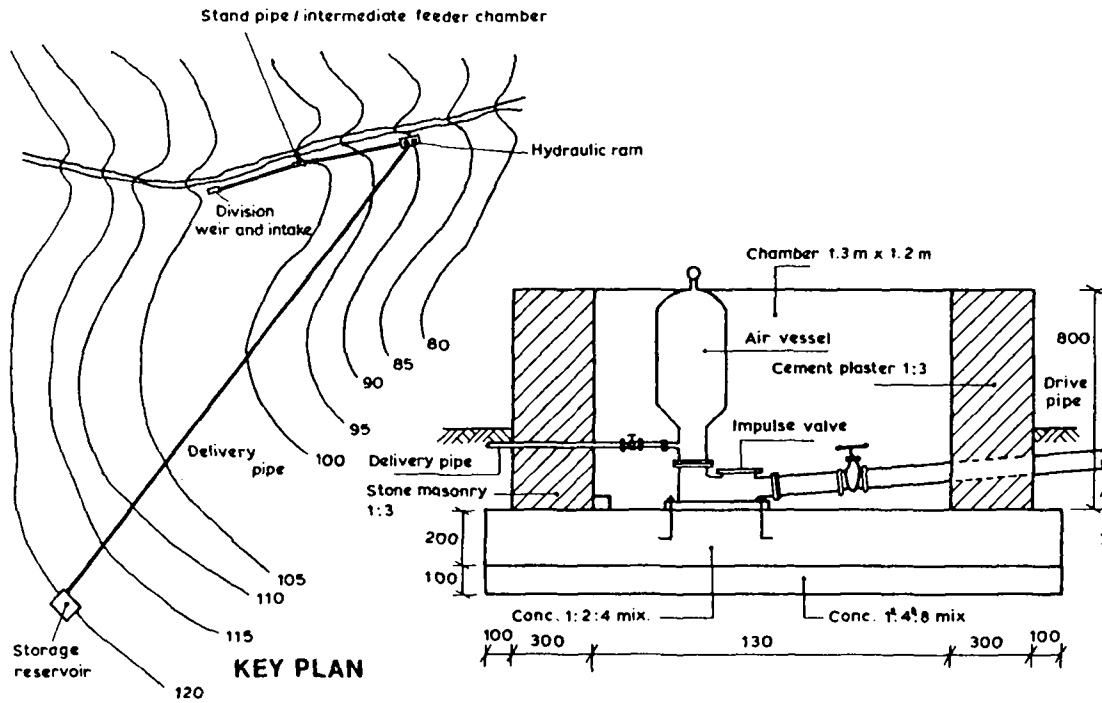
HYDRAULIC FLOCCULATOR WITH REMOVABLE BAFFLES



$$Q = \pi \frac{D^2 \sqrt{9R}}{4D} \sqrt{\Delta H}$$

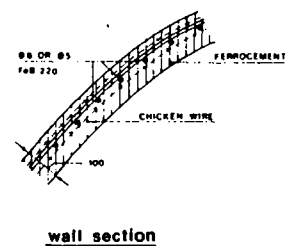
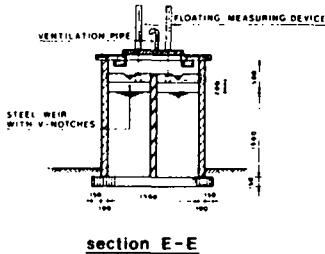
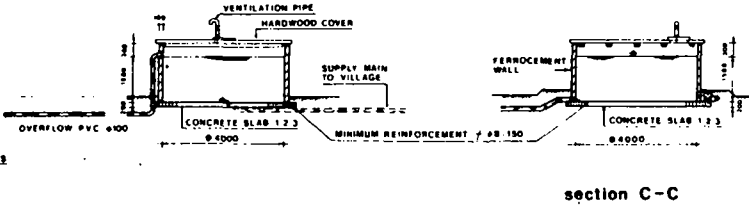
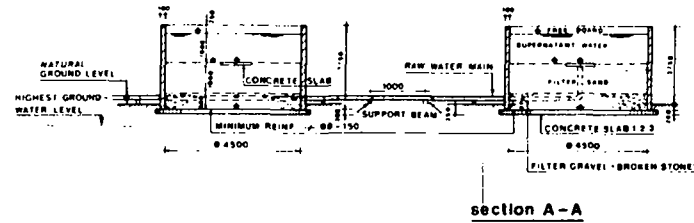
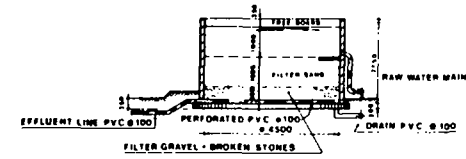
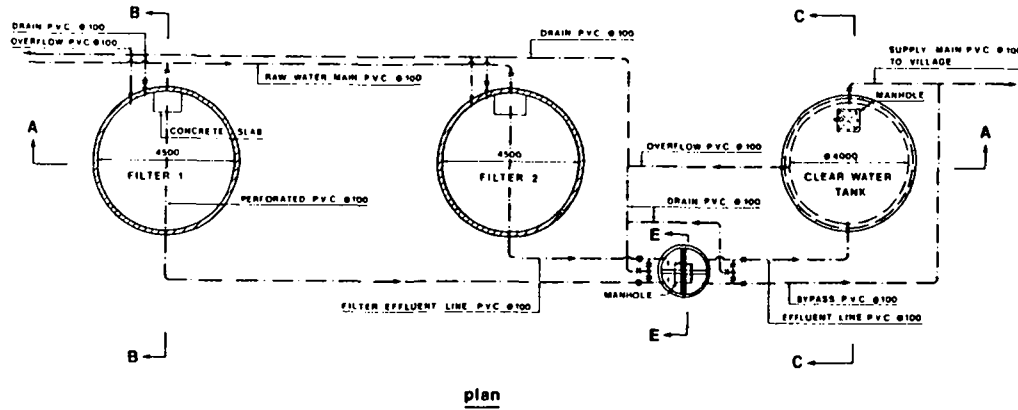


FLOW THROUGH AN ELBOW METER



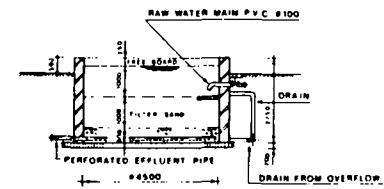
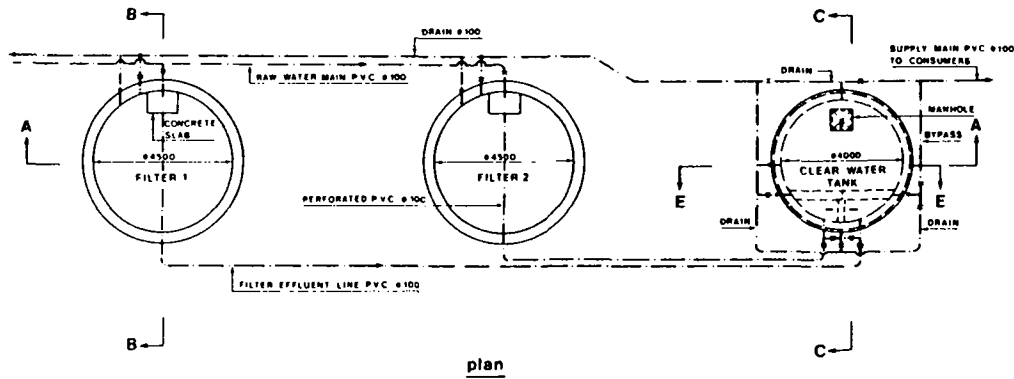
Pipe hydraulic ram as illustrated is based on the design given in the manual on the ram for pumping water by S.B.Watt. (Intermediate technology publications Ltd London)

A VIEW OF HYDRAM CONSTRUCTED FROM PIPE FITTINGS

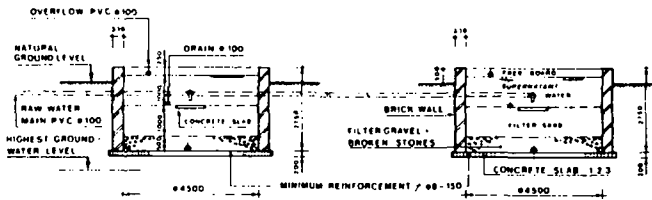


| BILL OF QUANTITIES | |
|----------------------------|--------------------|
| MATERIAL | QUANTITIES |
| CONCRETE 1:2:3 | 10 m ³ |
| REINFORCEMENT STEEL | 2500 kg |
| FERROCEMENT | 12 m ³ |
| FILTER SAND 0.15 - 0.35 mm | 1000 mm |
| COARSE SAND 1.00 - 1.40 mm | 100 mm |
| GRAVEL 4.00 - 5.80 mm | 100 mm |
| GRAVEL 16 - 23 mm | 150 mm |
| BROKEN STONES 80 - 100 mm | 150 mm |
| GATE VALVES | 13 |
| BUTTERFLY VALVES | 2 |
| PVC PIPES Ø 100 | 150 m ¹ |
| 90° BENDS | 33 |
| T-JOINTS | 14 |
| CHICKEN WIRE | 300 m ² |

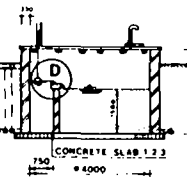
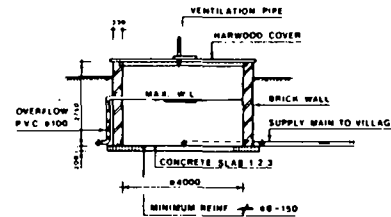
— — — GATE VALVE
 — — — BUTTERFLY VALVE



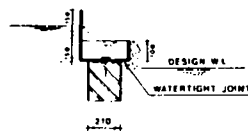
section B-B



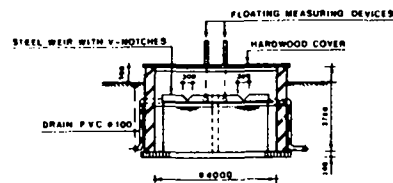
section A-A



section C-C

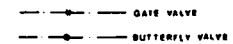


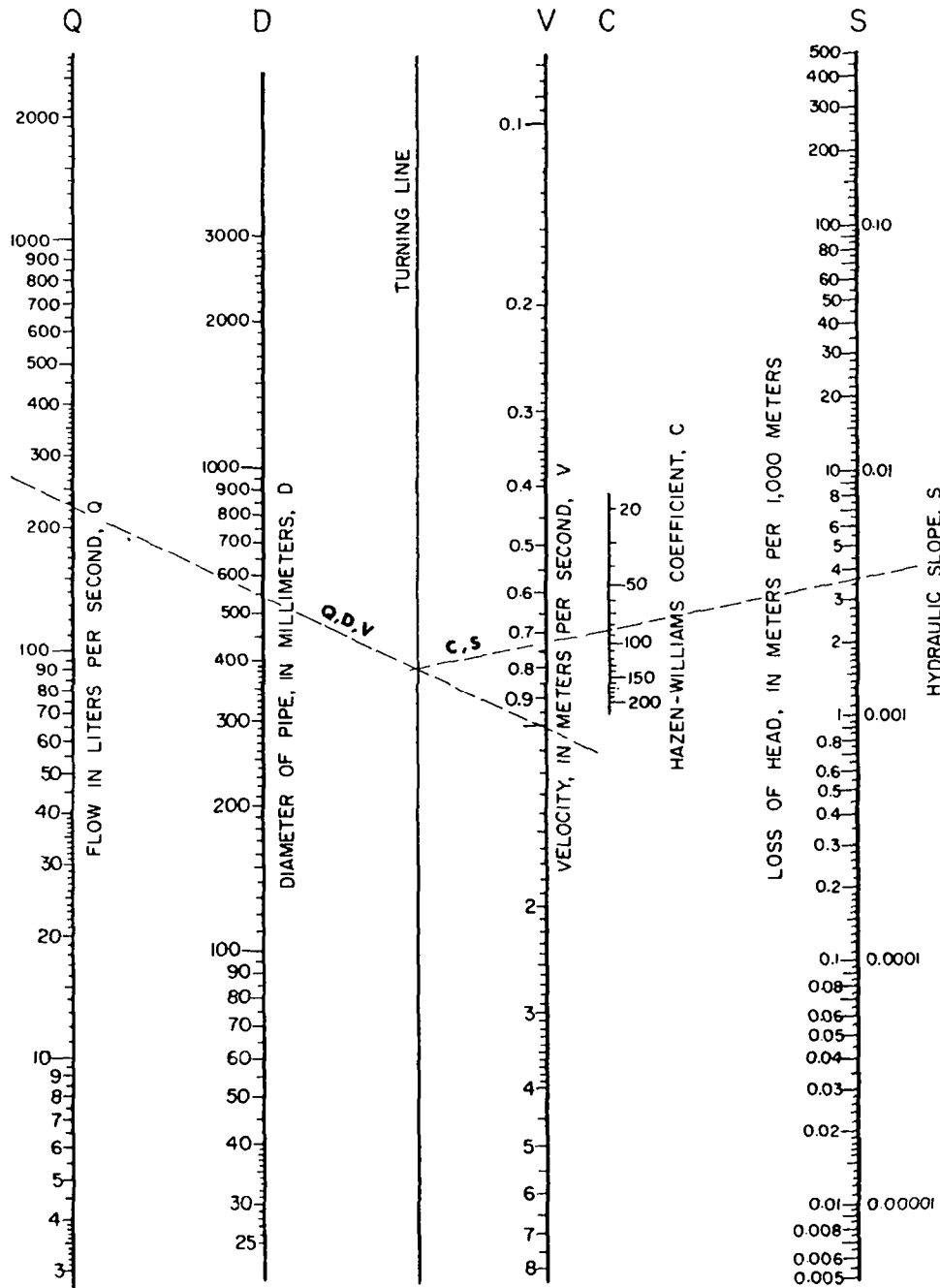
detail D



section E-E

| BILL OF QUANTITIES | |
|---------------------|------------------------------------|
| MATERIAL | QUANTITIES |
| CONCRETE 1:3:3 | 10 m ³ |
| REINFORCEMENT STEEL | 1000 kg |
| MASONRY | 40 m ³ |
| FILTER SAND | 0.15 - 0.35 mm 1000 m ³ |
| COARSE SAND | 1.00 - 1.40 mm 100 m ³ |
| GRAVEL | 4.00 - 6.00 mm 100 m ³ |
| GRAVEL | 16 - 23 mm 150 m ³ |
| BROKEN STONES | 50 - 100 mm 150 m ³ |
| GATE VALVES | 12 |
| BUTTERFLY | 2 |
| P.V.C. PIPES | 150 m ¹ |
| 90° BENDS | 26 |
| T-JOINTS | 15 |



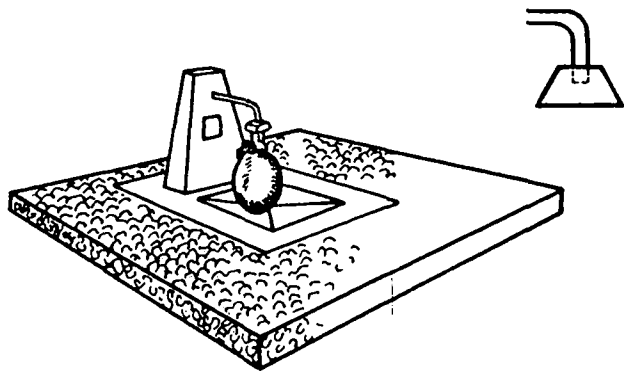


Values of "C" for
Hazen-Williams Formula

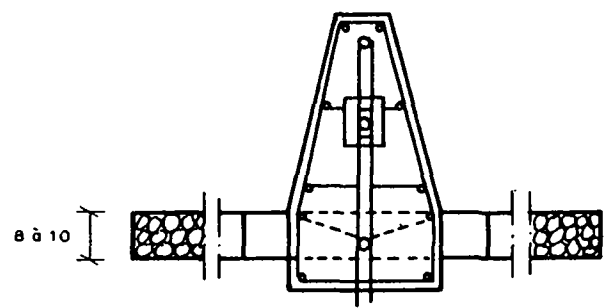
| Type of Pipe | C |
|----------------------------|---------|
| Asbestos Cement | 140 |
| Brass | 130-140 |
| Brick Sewer | 100 |
| Cast Iron | |
| New, Unlined | 130 |
| Old, Unlined* | 40-120 |
| Cement Lined | 130-150 |
| Bitumastic Enamel Lined | 140-150 |
| Tar-Coated | 115-135 |
| Concrete or Concrete Lined | |
| Steel forms | 140 |
| Wooden forms | 120 |
| Centrifugally Spun | 135 |
| Copper | 130-140 |
| Fire Hose (Rubber Lined) | 135 |
| Galvanized Iron | 120 |
| Glass | 140 |
| Lead | 130-140 |
| Masonry Conduit | 120-140 |
| Plastic | 140-150 |
| Steel | |
| Coal-Tar Enamel Lined | 145-150 |
| New Unlined | 140-150 |
| Riveted | 110 |
| Tin | 130 |
| Vitrified | 100-140 |
| Wood Stave | 120 |

*See "Hydraulic Tables," by G. S. Williams and A. Hazen, Wiley, New York.

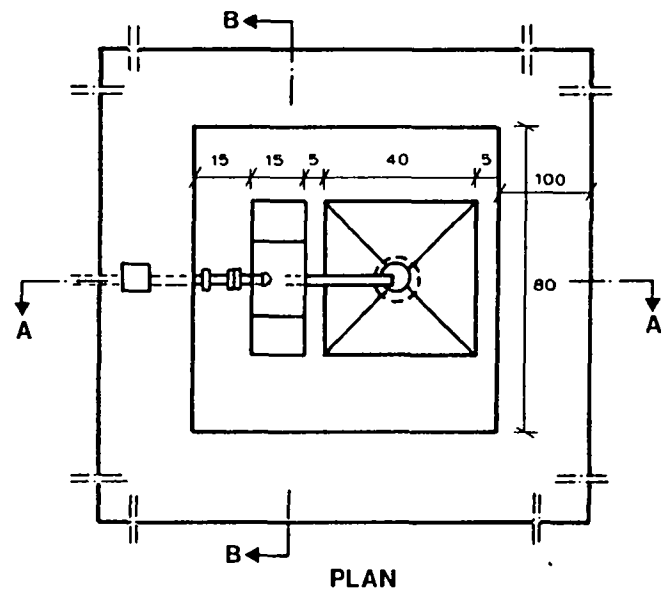
NOMOGRAPH FOR SOLUTION OF THE
HAZEN-WILLIAMS FORMULA (METRIC UNITS)



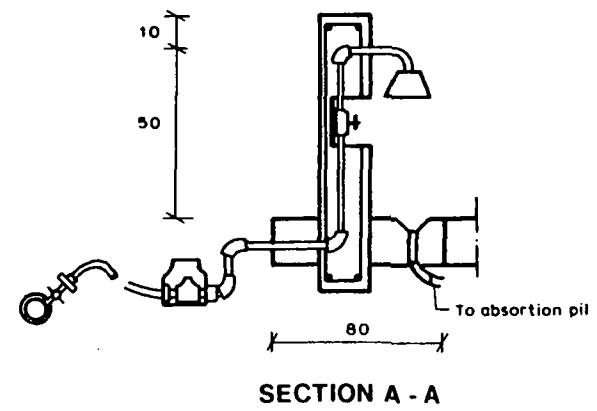
PROTECTIVE BELL



SECTION B-B

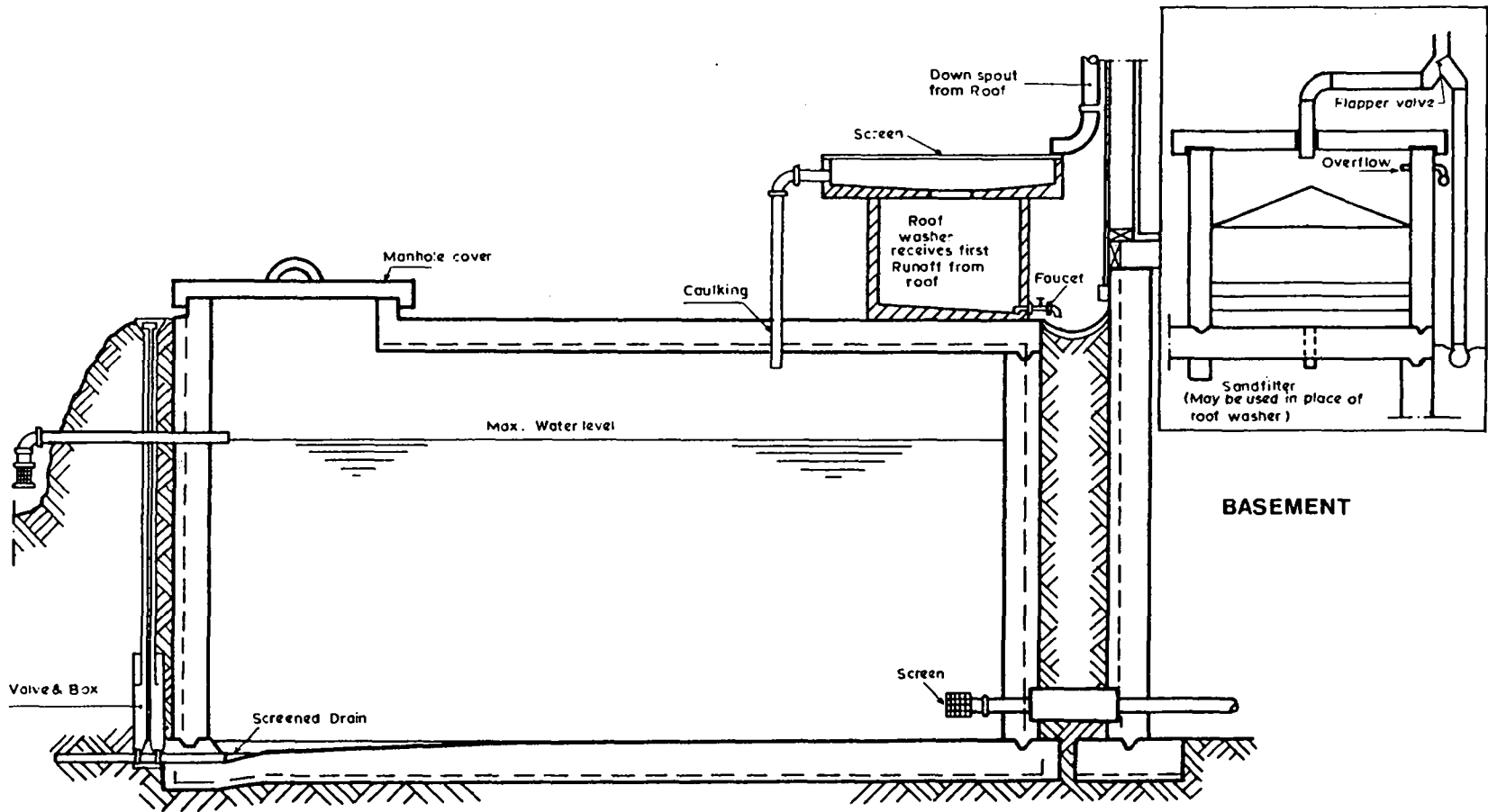


PLAN



SECTION A - A

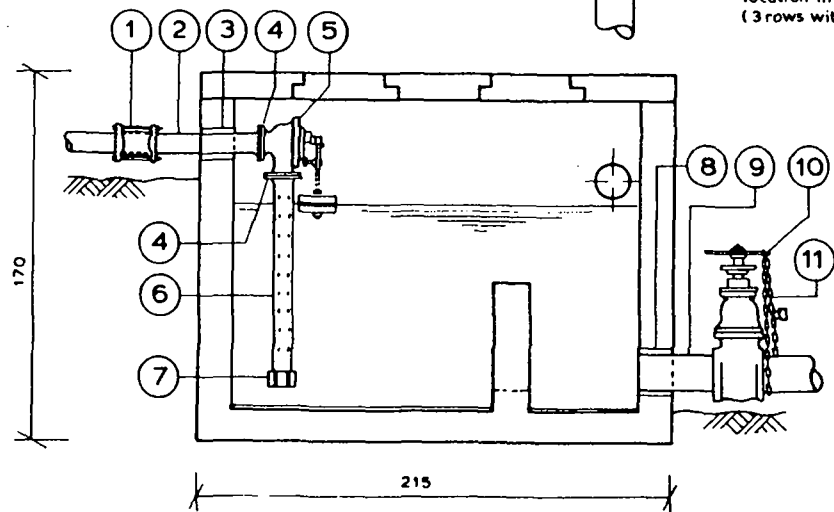
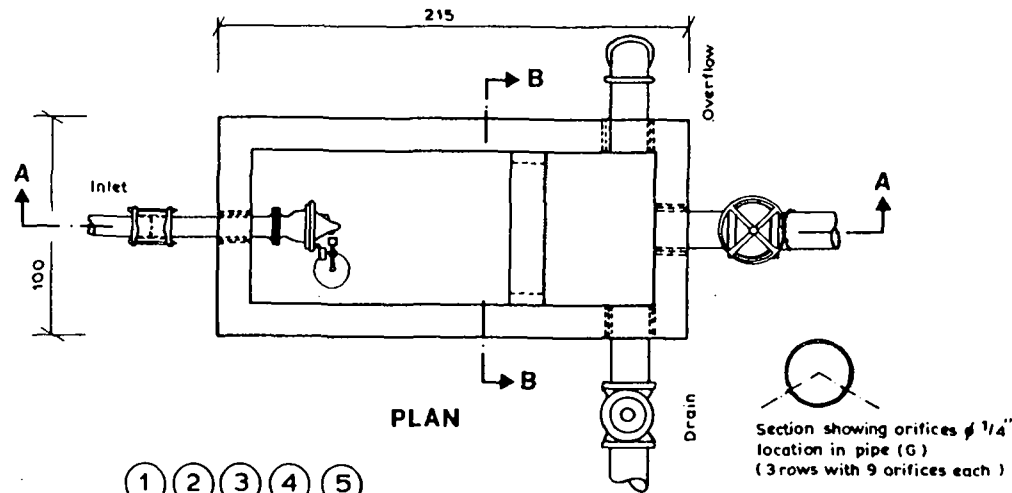
All dimensions in cm, unless otherwise shown



CISTERN

| USABLE RANGE | | | ACCESSORIES | | |
|--------------|-----------|-----------------|-------------|--------|------------------|
| Q = lts/sec. | DYN PRESS | MIN INLET PRESS | INLET | OUTLET | OVERFLOW & DRAIN |
| 25 | 80 a 100 | 10.00 | 4" | 6" | 6" |
| | | 20.00 | 3" | 6" | 6" |
| 30 | 60 a 100 | 10.00 | 4" | 6" | 6" |
| | | 25.00 | 3" | 6" | 6" |
| 35 | | 15.00 | 4" | 6" | 6" |
| | | 30.00 | 3" | 6" | 6" |
| 40 | | 15.00 | 4" | 6" | 6" |

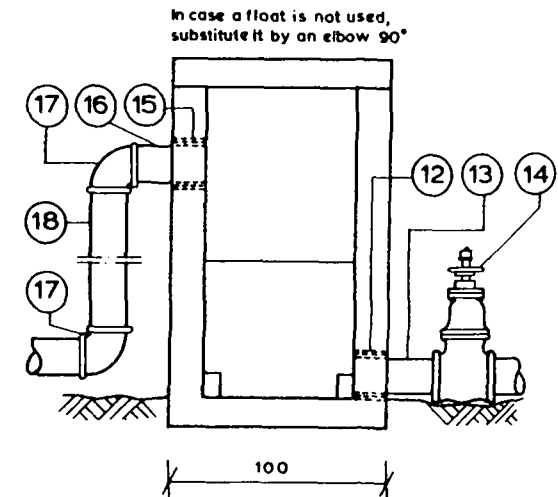
TABLE OF TANK SELECTIONS



SECTION A - A

All dimensions in cm, unless otherwise shown

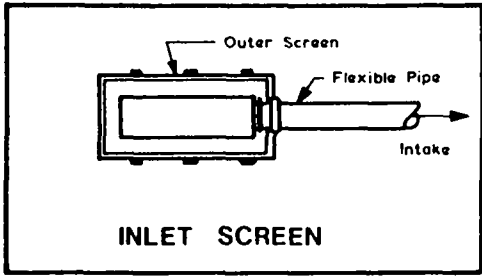
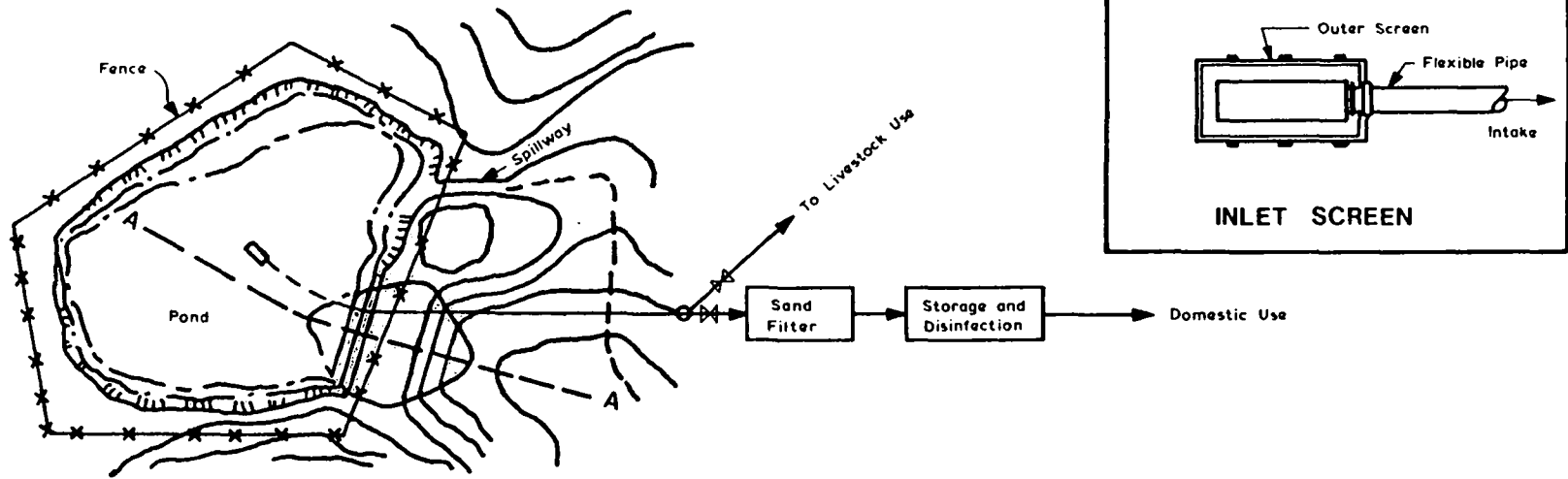
| LIST OF ACCESSORIES | | | |
|---------------------|----------|--------------------------------------|---------------------|
| NO. | QUANTITY | DESCRIPTION | DIMENSIONS |
| INLET DIAM. | | | |
| | | | $\phi 3"$ $\phi 4"$ |
| 1 | 1 | DRESSER | 3" x 60 4" x 60 |
| 2 | 1 | PIPE GI (THREADED ONE SIDE) | 6" x .15 6" x .15 |
| 3 | 1 | PIPE GI | 3" 4" |
| 4 | 2 | FLANGES | 3" 4" |
| 5 | 1 | FLOAT VALVE (FLANGE BOTH ENDS) | 3" x .95 4" x .95 |
| 6 | 1 | PIPE WITH HOLES (THREADED BOTH ENDS) | 3" 4" |
| 7 | 1 | CAP GI | 3" 4" |
| OUTLET DIAM. | | | |
| | | | $\phi 6"$ |
| 8 | 1 | PIPE GI | 8" x .15 |
| 9 | 1 | PIPE GI (THREADED ONE END) | 6" x .35 |
| 10 | 1 | GATE VALVE | 6" |
| 11 | 1 | LOCK & CHAIN | - |
| DRAIN DIAM. | | | |
| | | | $\phi 6"$ |
| 12 | 1 | PIPE GI | 6" x .15 |
| 13 | 1 | PIPE GI (THREADED ONE END) | 6" x .40 |
| 14 | 1 | GATE VALVE | 6" |
| OVERFLOW DIAM. | | | |
| | | | $\phi 6"$ |
| 15 | 1 | PIPE GI | 6" x .15 |
| 16 | 1 | PIPE GI (THREADED ONE END) | 6" x .35 |
| 17 | 2 | ELBOWS 90° GI | 6" |
| 18 | 1 | PIPE GI (THREADED BOTH ENDS) | 6" x s/nec |



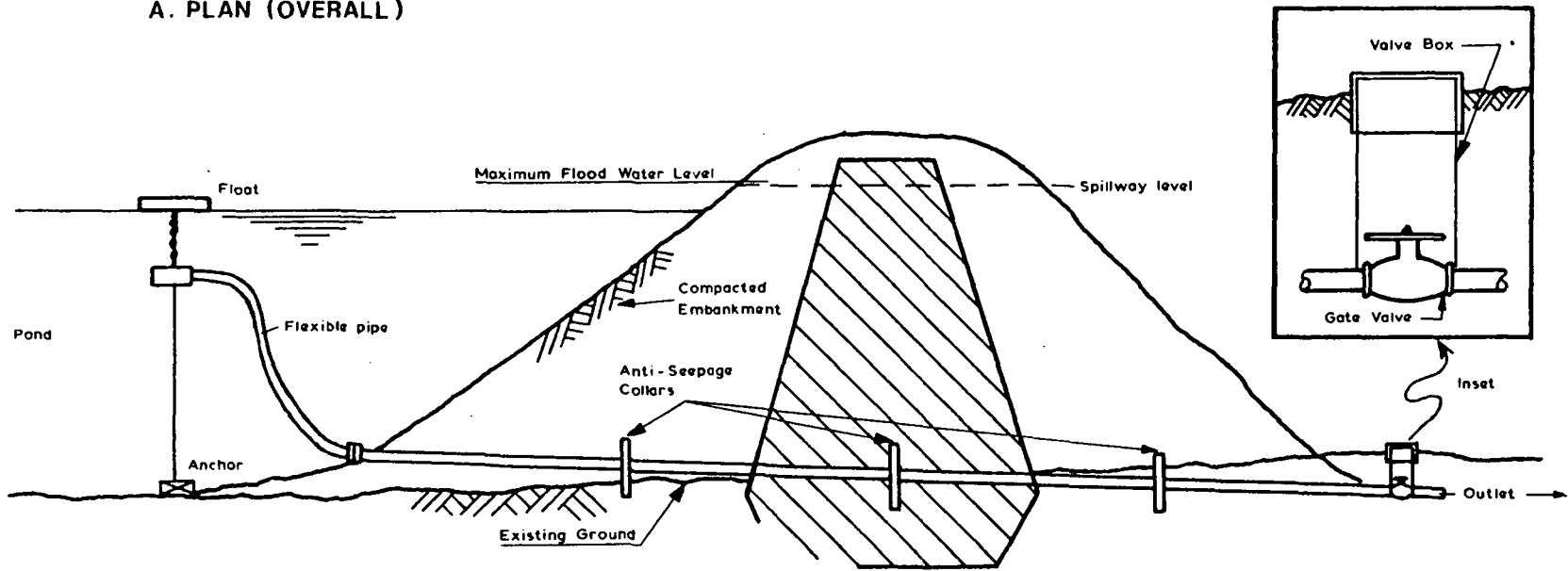
SECTION B - B

BREAK PRESSURE TANK

VENEZUELA



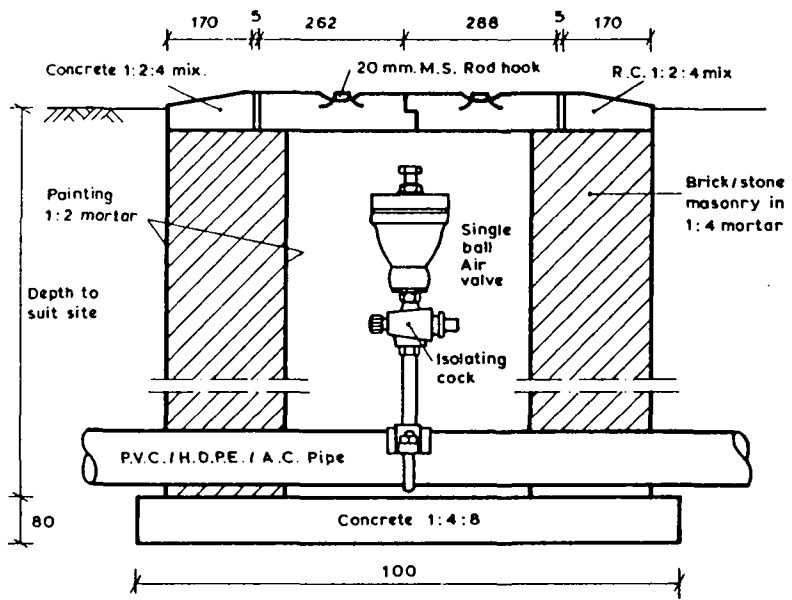
A. PLAN (OVERALL)



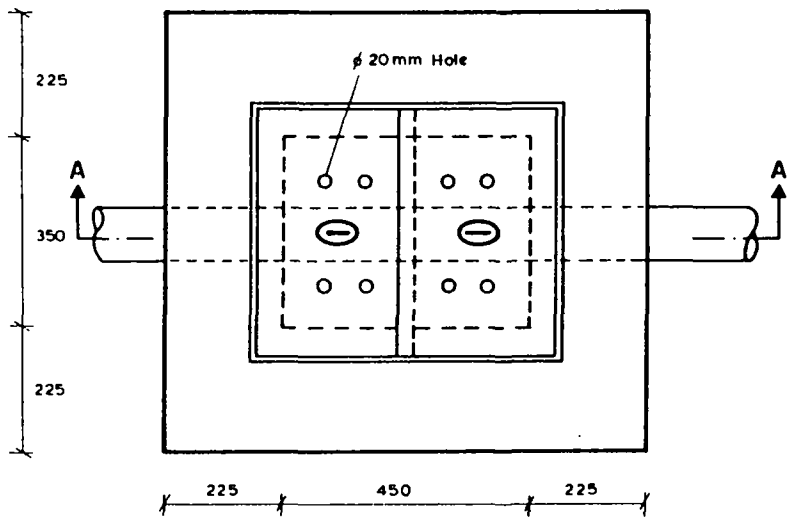
B. SECTION A-A

POND

MASONRY CHAMBER

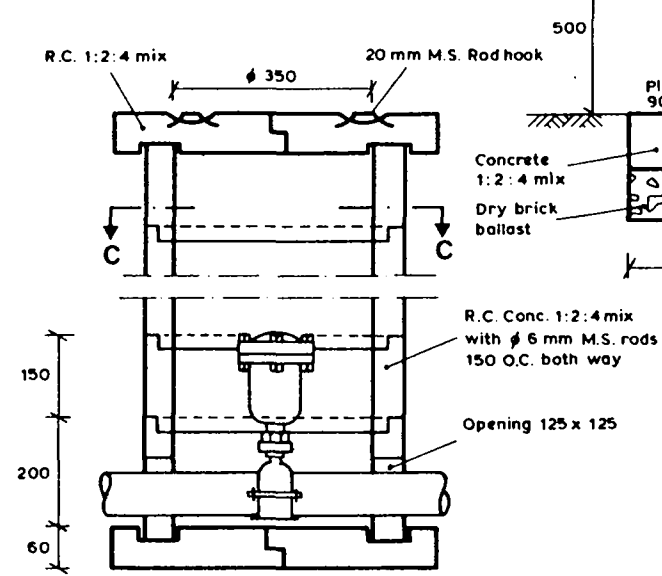


SECTION A-A

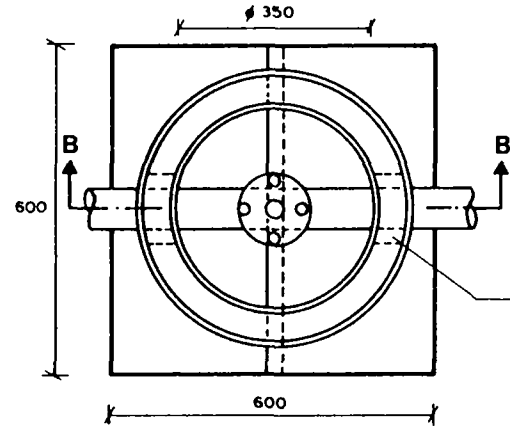


PLAN

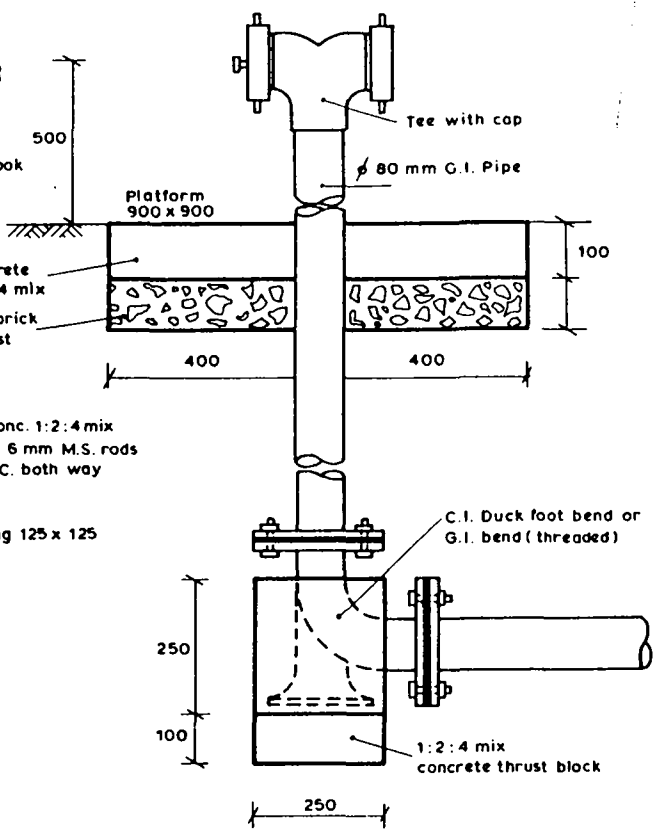
PRECAST CONCRETE CHAMBER



SECTION B-B



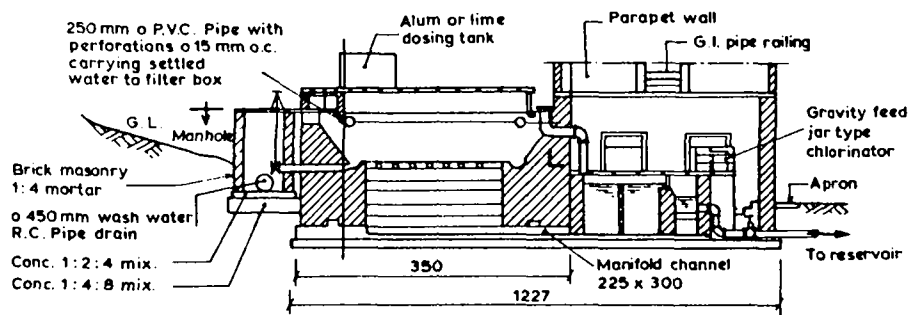
SECTIONAL PLAN C-C



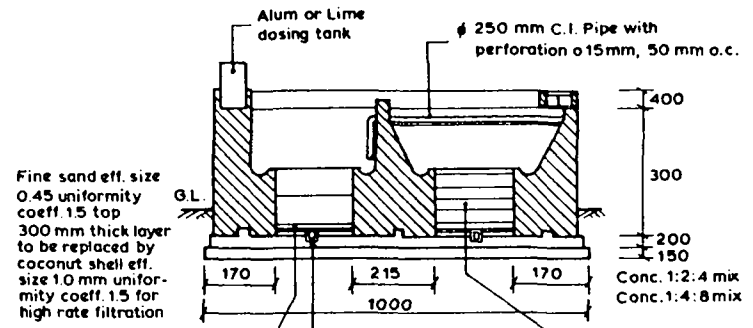
FIRE HYDRANT POST

Air valve chambers, as above can also be used as meter chambers
Precast concrete chamber and masonry chamber

All dimensions in cm, unless otherwise shown

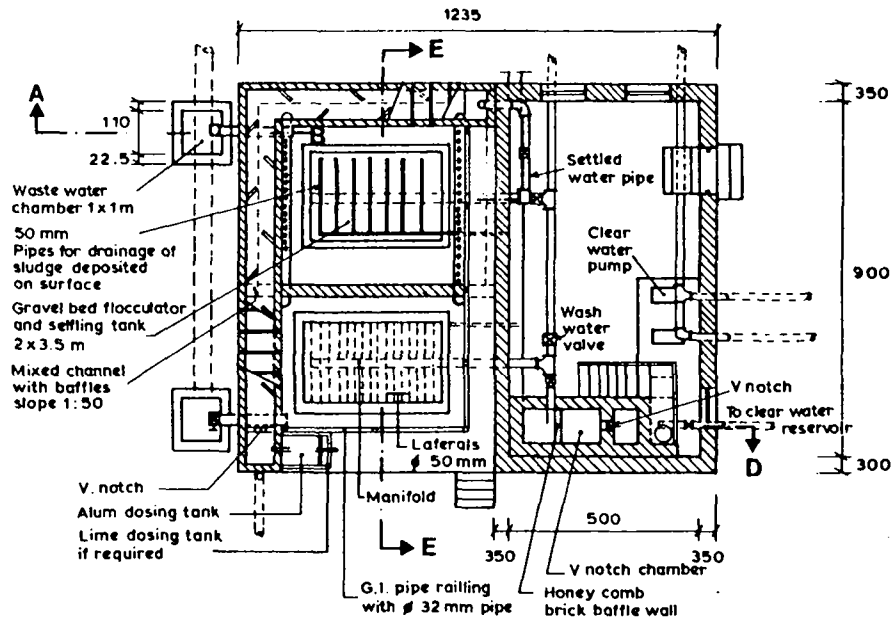


SECTION A, B, C, D

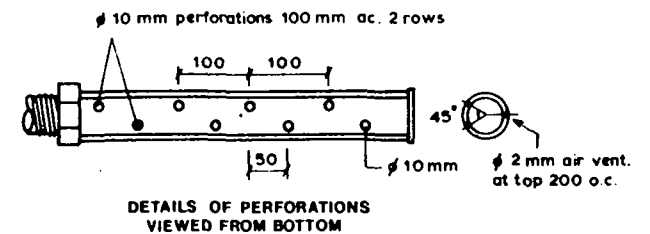


| Thickness | Gravel | Mesh | Mesh | Gravel | Thickness |
|-----------|----------|---------|--------|---------|-----------|
| 7.5 cm | -0.15 cm | +0.3 cm | 0.5 cm | - | 30 cm |
| 7.5 " | -0.3 " | +0.5 " | 0.10 " | -0.5 cm | 30 |
| 7.5 " | -0.5 " | +0.10 " | 0.20 " | -0.10 | 30 |
| 7.5 " | -0.10 " | +0.20 " | 0.40 " | -0.20 | 30 |
| 7.5 " | -0.20 " | +0.25 " | 0.50 " | -0.40 | 40 |

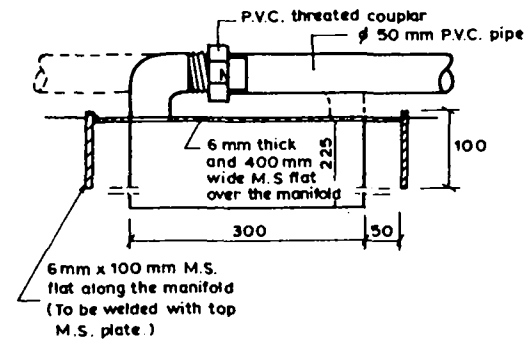
SECTION E-E



PLAN

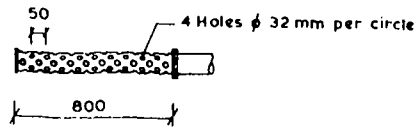


DETAILS OF PERFORATIONS VIEWED FROM BOTTOM

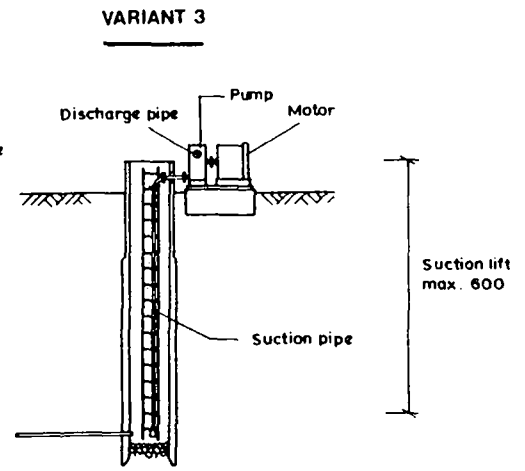
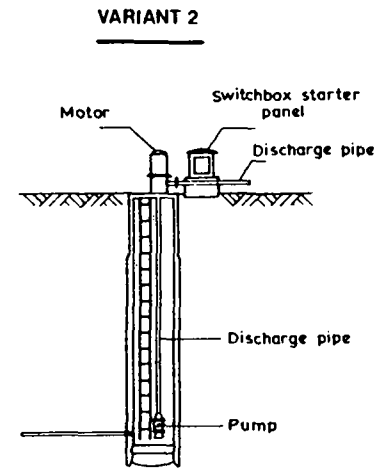
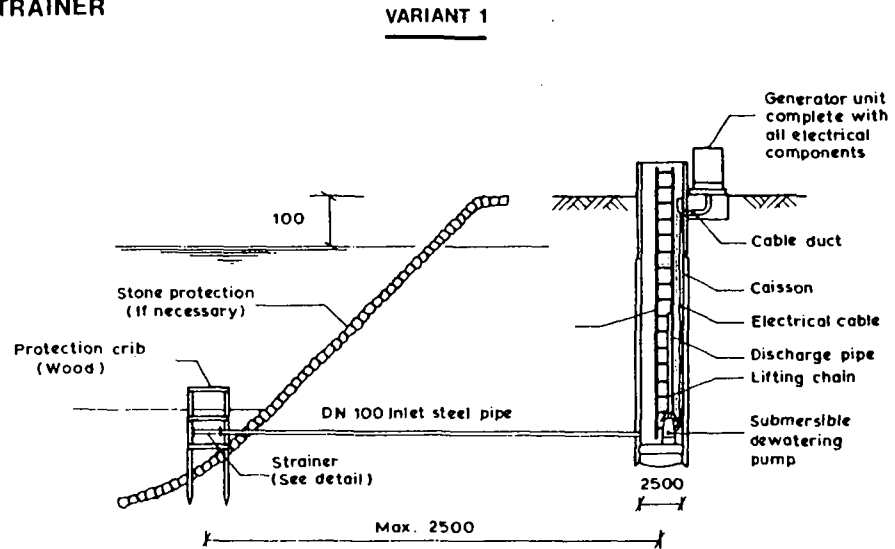


DETAILS OF MANIFOLD

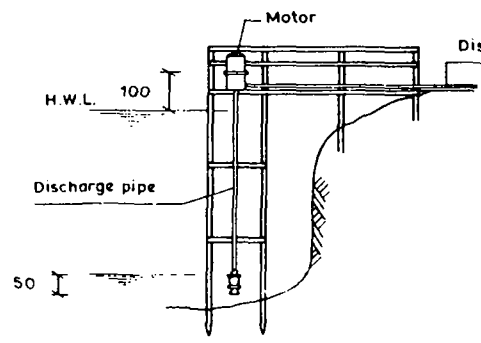
All dimensions in cm. unless otherwise shown



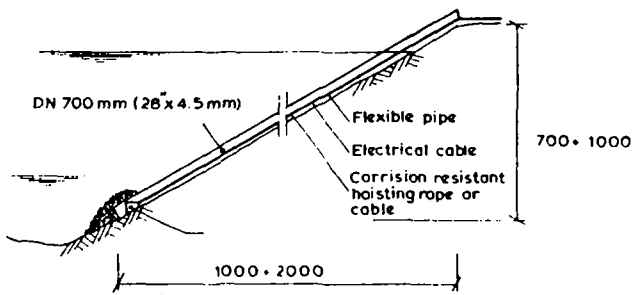
STRAINER



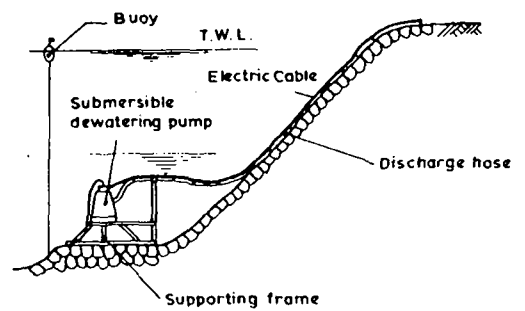
SHAFT INTAKE



BRIDGE INTAKE



SLOPED CASING INTAKE



SUBMERGED CRADLE INTAKE

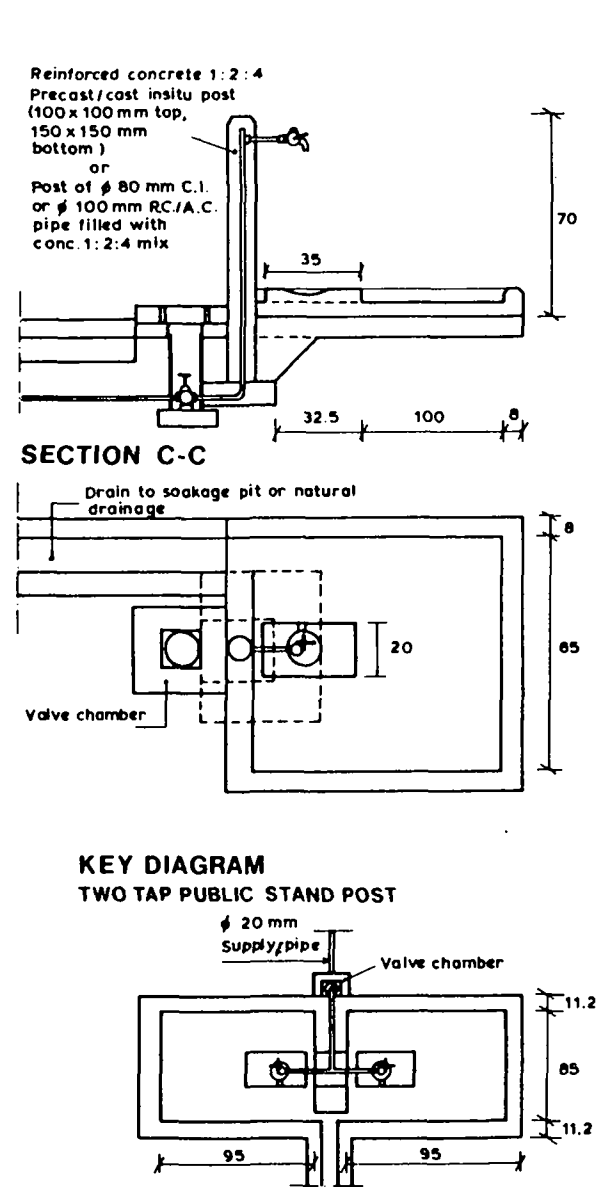
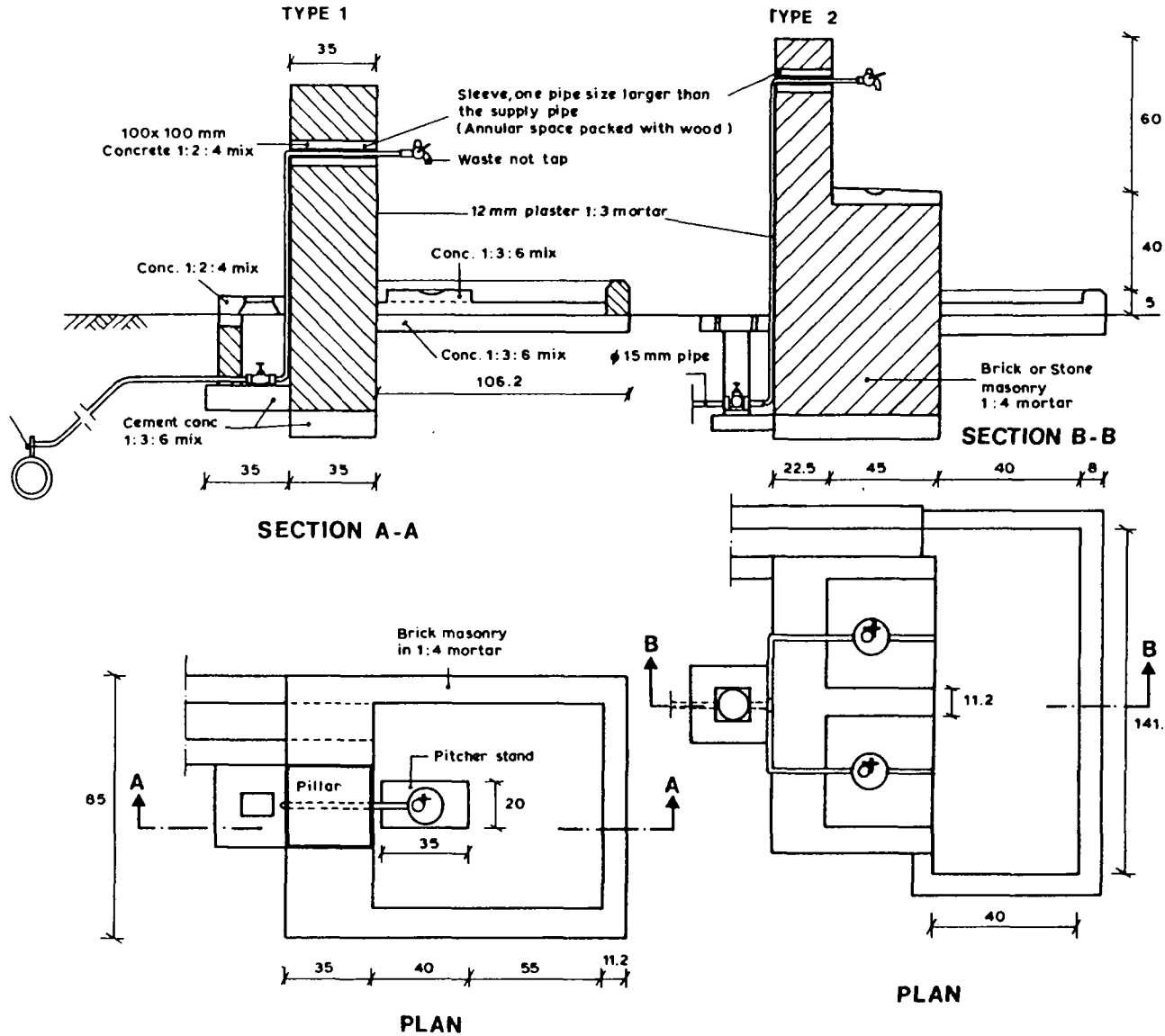
All dimensions in cm, unless otherwise shown

STATIONARY INTAKE FOR SURFACE WATER

WHO/SEARO

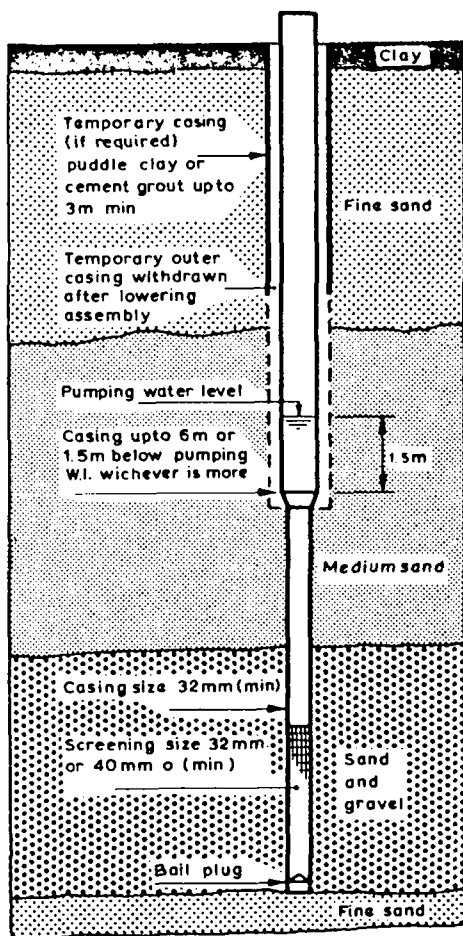
MASONRY PILLAR POST

PIPE OR PRECAST R.C. PILLAR TYPE

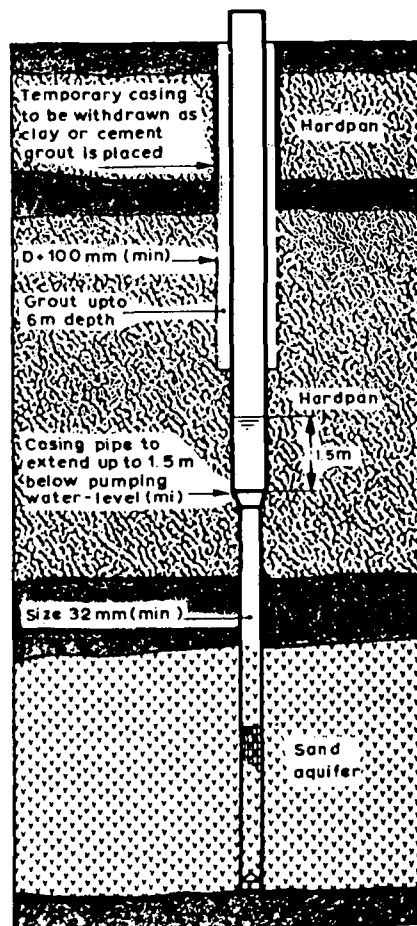


All dimensions in cm, unless otherwise shown

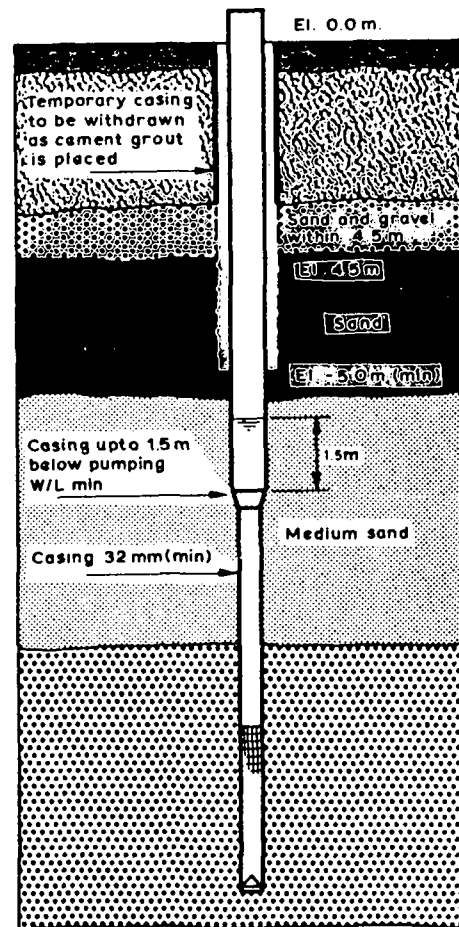
Unconsolidated caving material, sand and gravel or sand



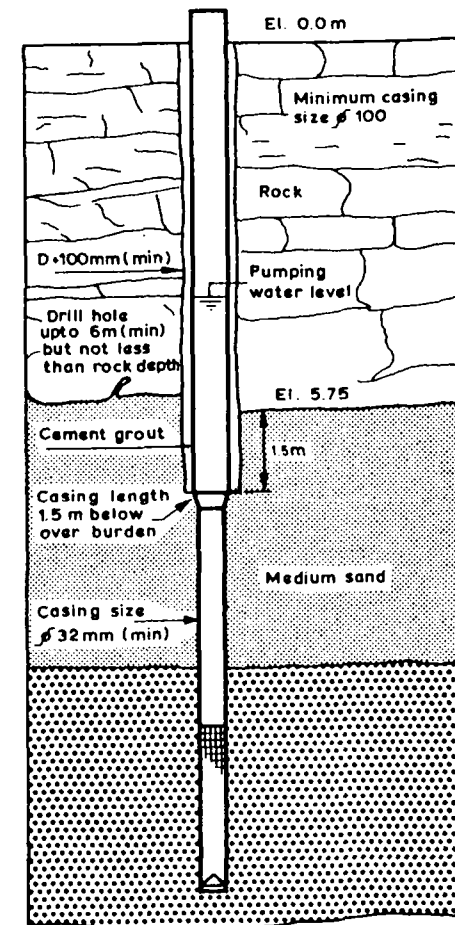
Clay, hardpan, silt or similar material to depth of more than 6 metre



Clay, hardpan, silt or similar material containing layer of sand or gravel within 4.5 m of ground surface



Crevised or fractured rock such as limestone, granite and quartzite

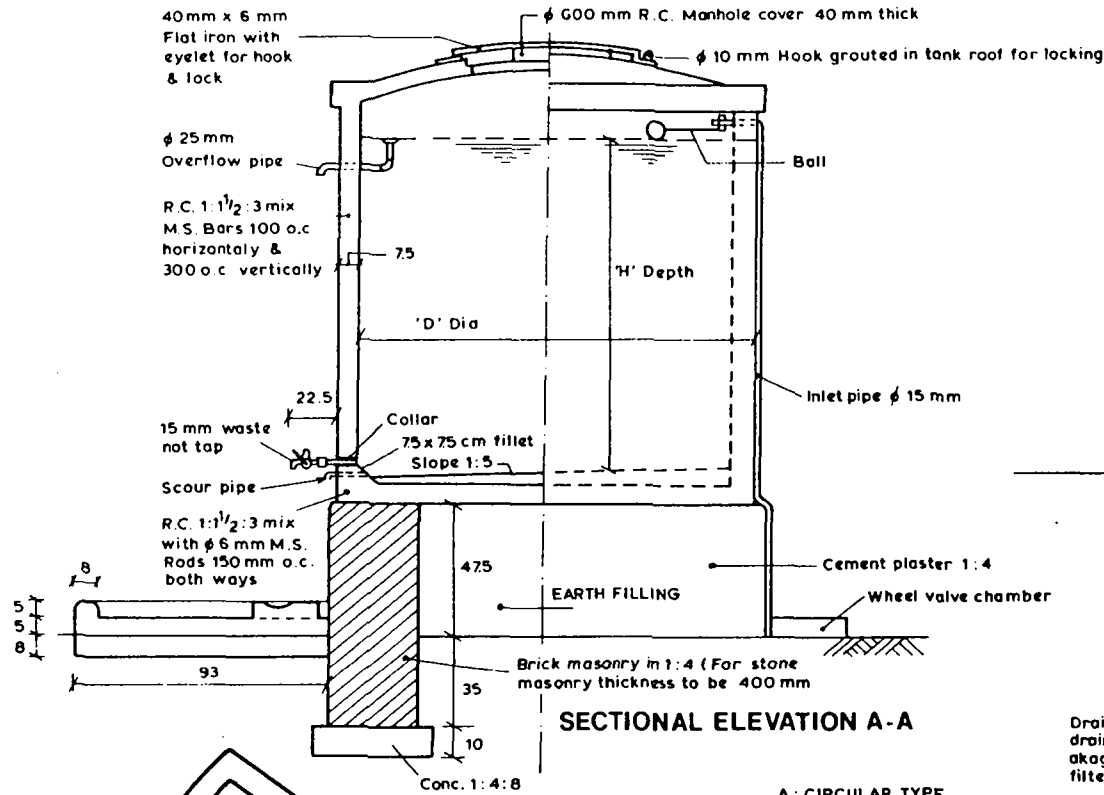


Where pumping level is less than 7.5m. from the surface - casing should extend 3m below the pumping level

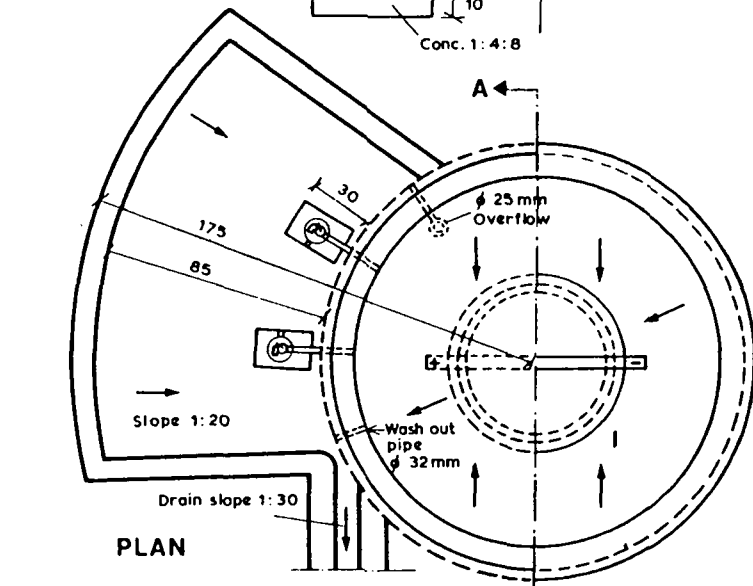
For gravel packing drill hole to be (O.D.) dia of casing or liner pipe/screen - 150mm (min)

All dimensions in cm, unless otherwise shown

R.C. TANK TYPE (CIRCULAR)



SECTIONAL ELEVATION A-A



PLAN

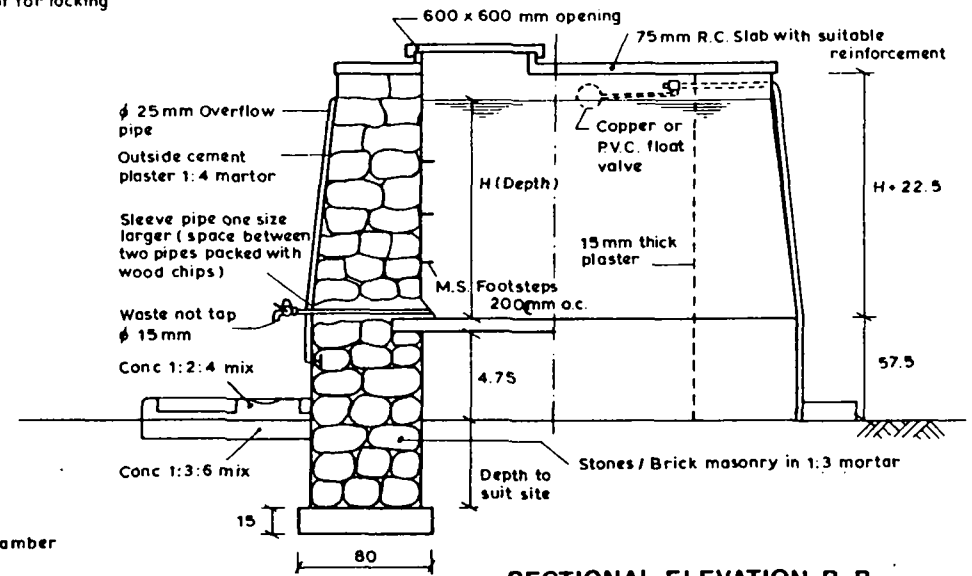
A: CIRCULAR TYPE

| CAPACITY LITRES | DEPTH 'H' (m) | DIA D(m) |
|-----------------|---------------|----------|
| 2000 | 1.3 | 1.4 |
| 2500 | 1.6 | 1.4 |
| 3000 | 1.8 | 1.4 |
| 4000 | 1.8 | 1.8 |
| 5000 | 2.0 | 1.8 |

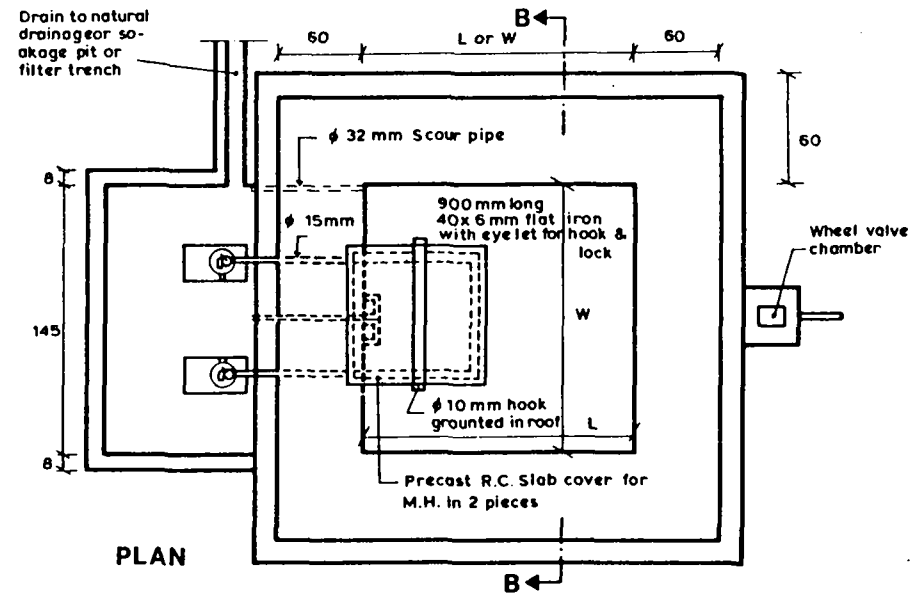
B: SQUARE TYPE

| CAPACITY LITRES | DEPTH 'H' (m) | LENGTH/WIDTH L/W (m) |
|-----------------|---------------|----------------------|
| 2000 | 1.0 | 1.4 |
| 2500 | 1.0 | 1.6 |
| 5000 | 1.0 | 2.2 |
| 10000 | 1.1 | 3.0 |

MASONRY TANK TYPE (SQUARE)



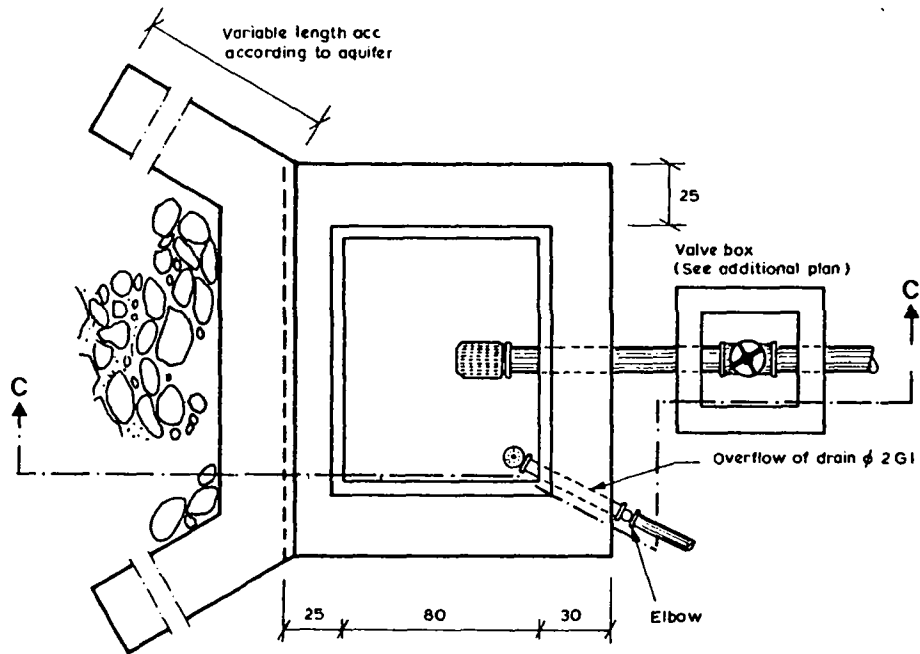
SECTIONAL ELEVATION B-B



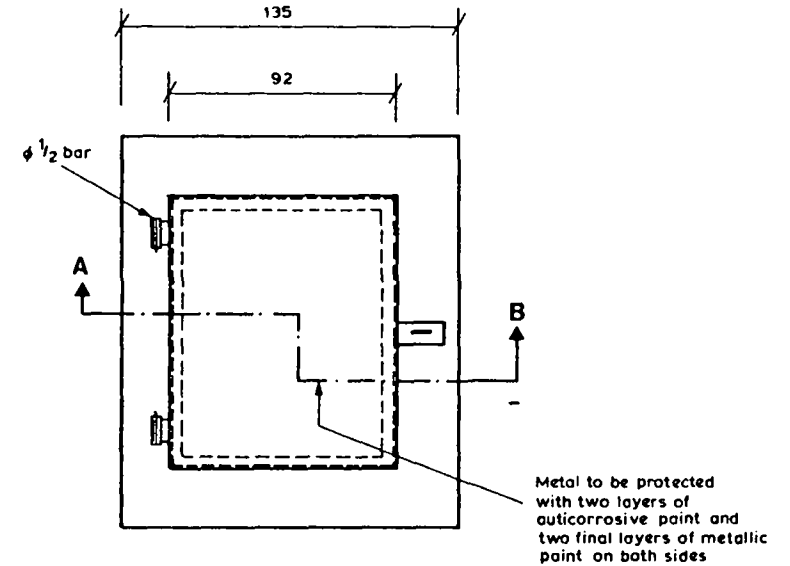
PLAN

All dimensions in cm, unless otherwise shown

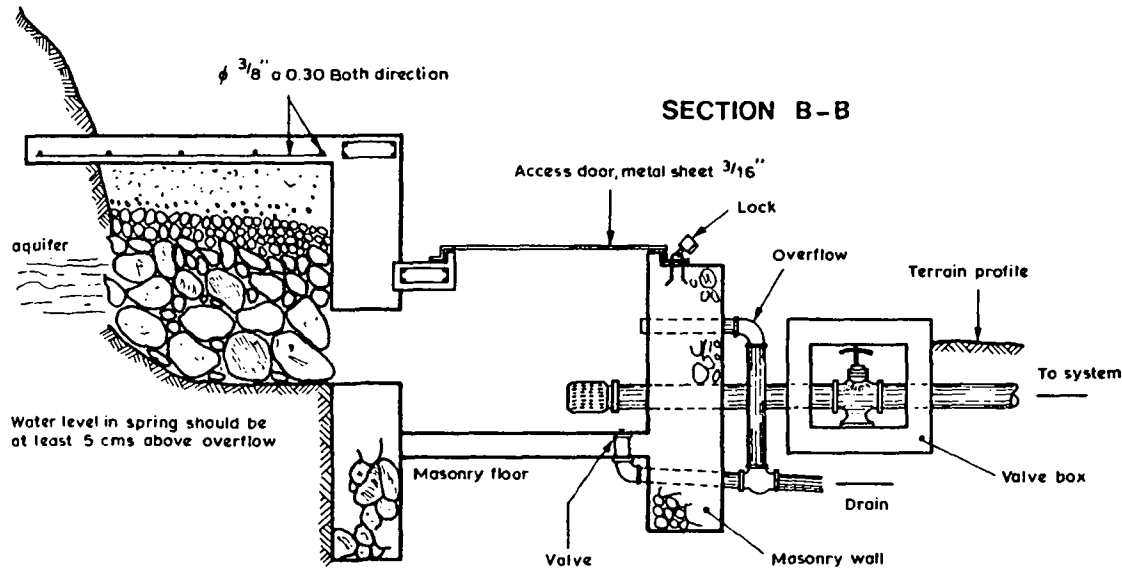
MULTI-TAP STORAGE TYPE PUBLIC FOUNTAIN (STAND POST)



PLAN

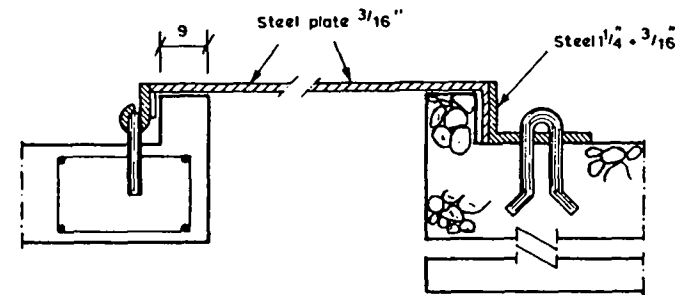


ACCESS DOOR PLAN



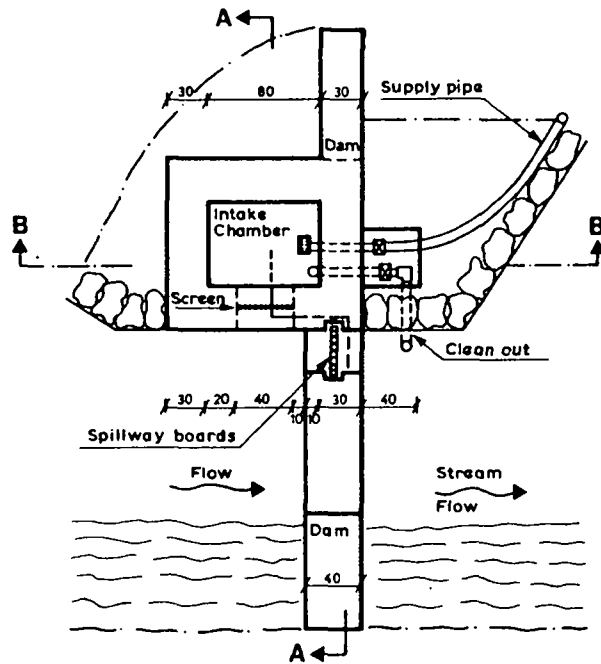
SECTION B-B

SPRING BOX

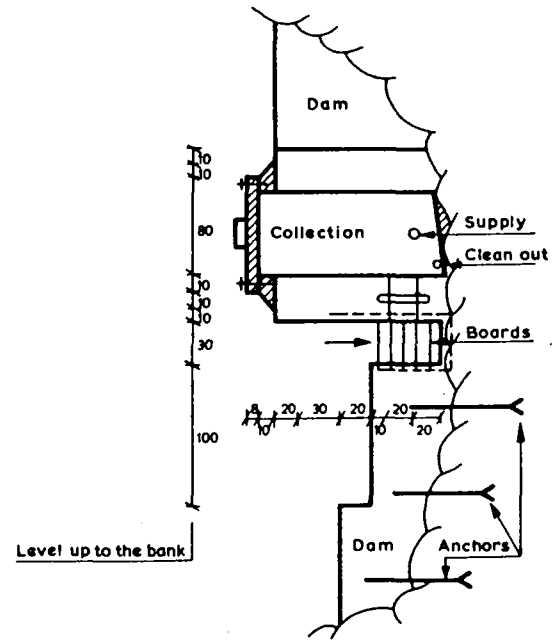


SECTION A - A
ACCESS DOOR

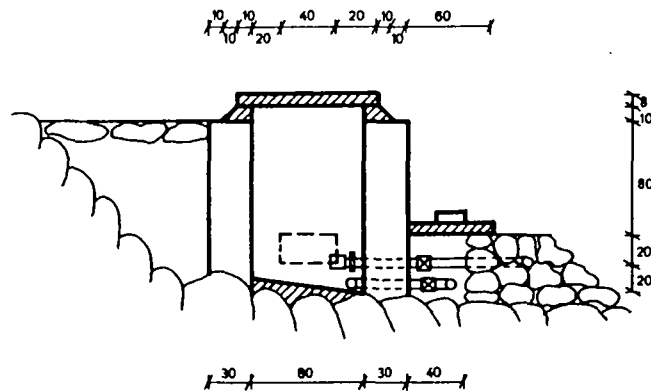
All dimensions in cm, unless otherwise shown



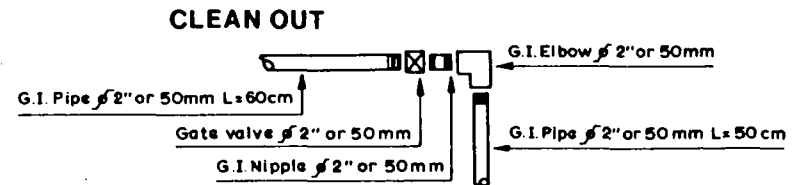
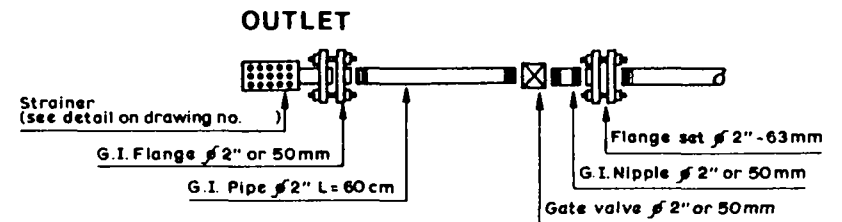
PLAN



SECTION A-A



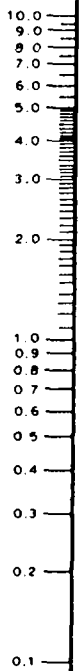
SECTION B-B



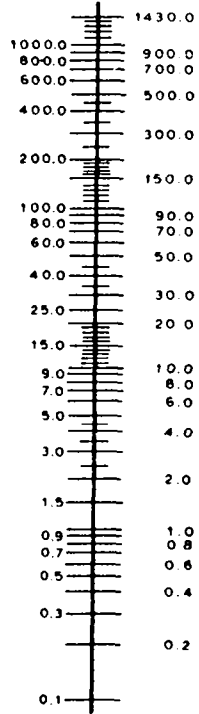
All dimensions in cm, unless otherwise shown

SMALL STREAM CATCHMENT INTAKE WITH LOW DAM

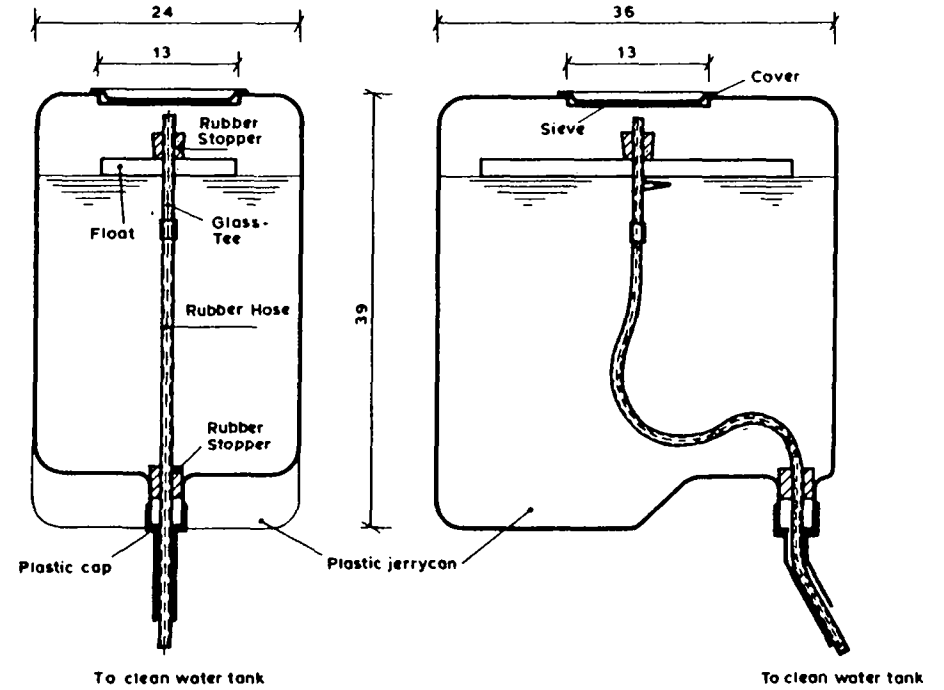
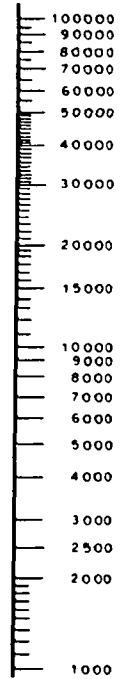
Scale A
mg Cl₂ / l



Scale B
g Cahypochlorite (70%)



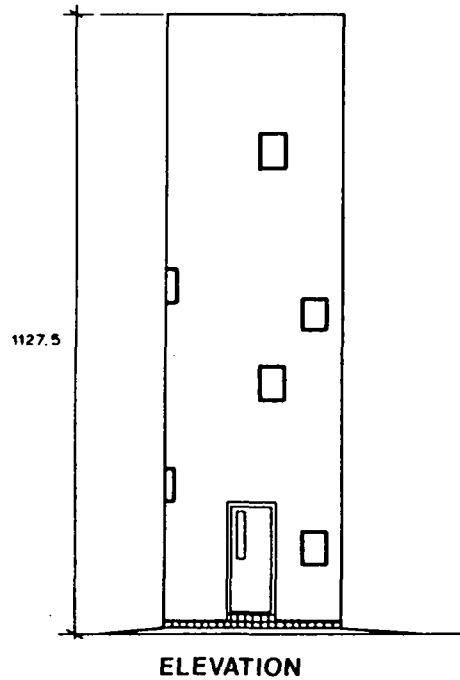
Scale C
l Solution



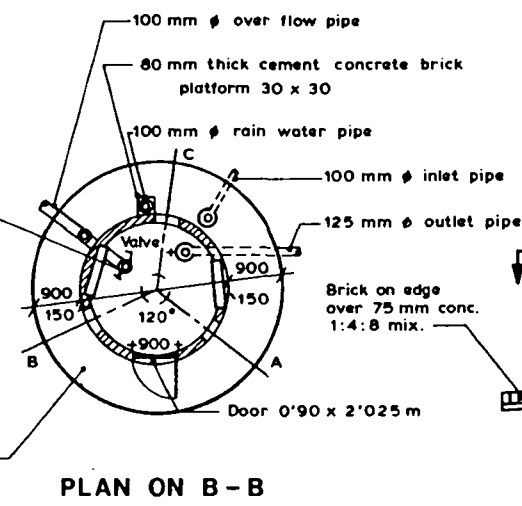
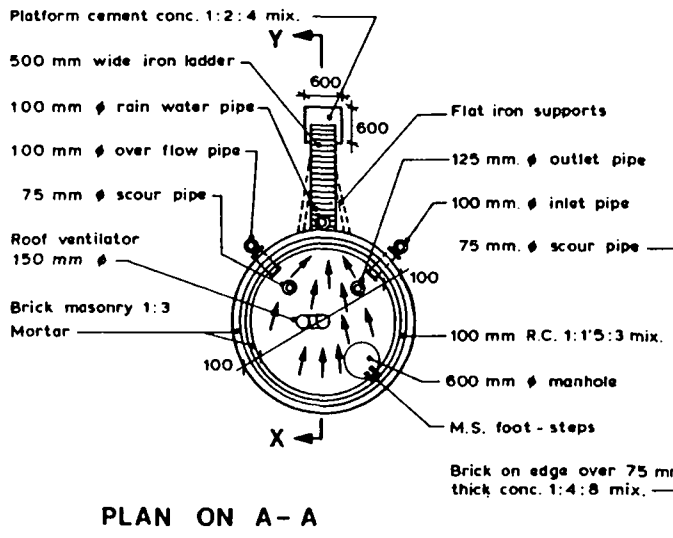
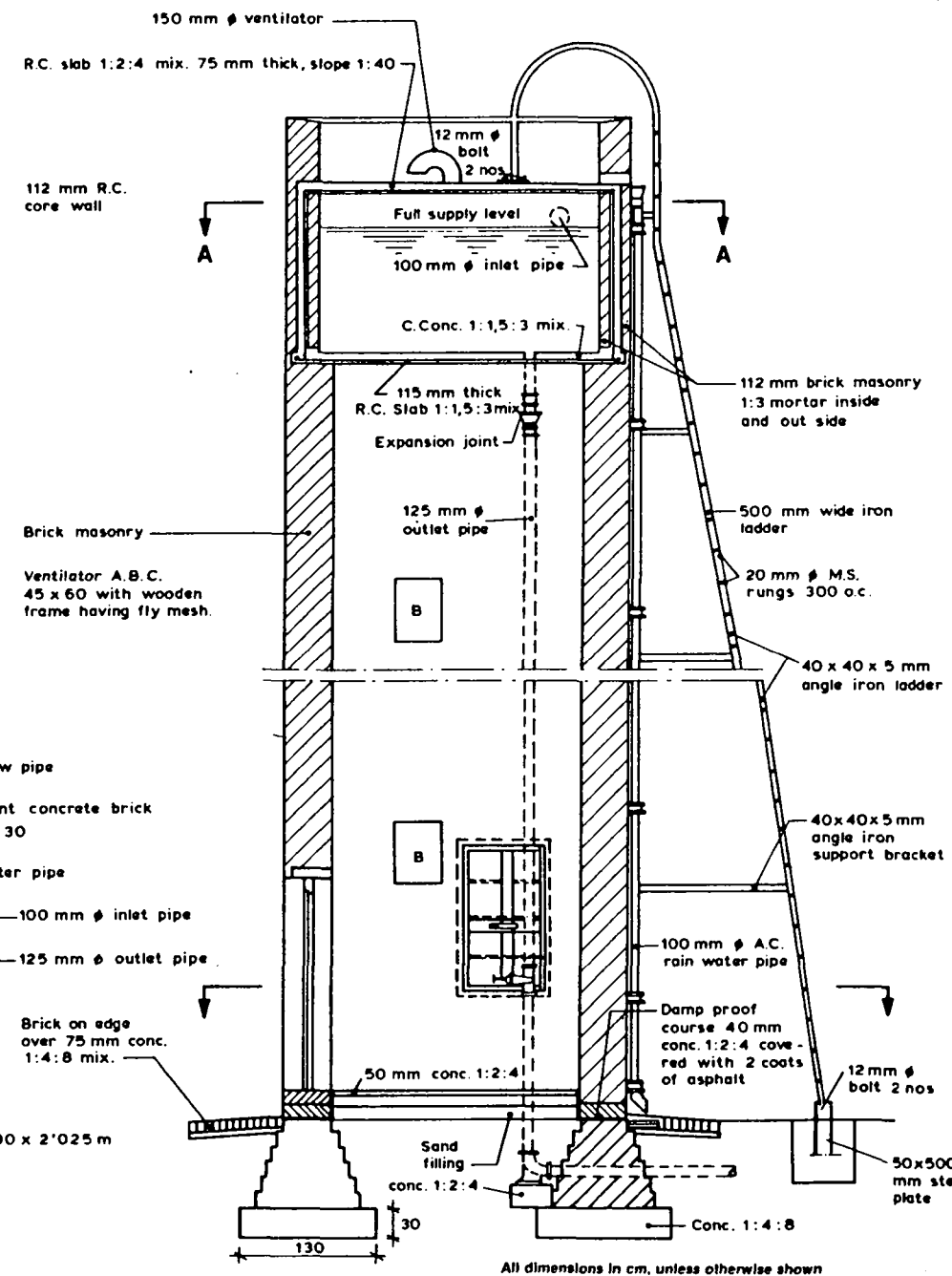
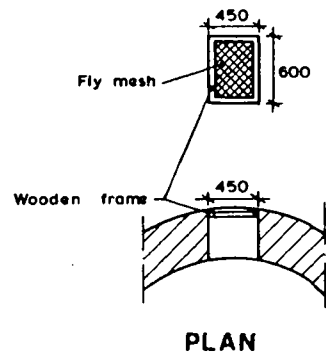
DOSING OF 70% HYPOCHLORITE

All dimensions in cm, unless otherwise shown

PLASTIC JERRYCAN CHLORINATOR

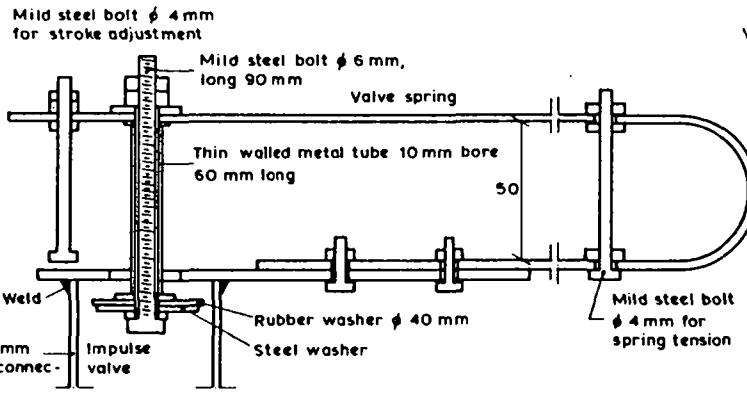
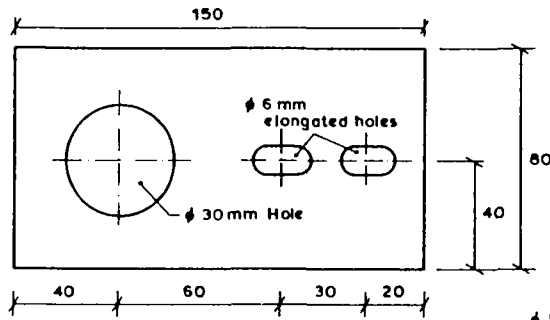


DETAILS OF VENTILATOR A.B.C.

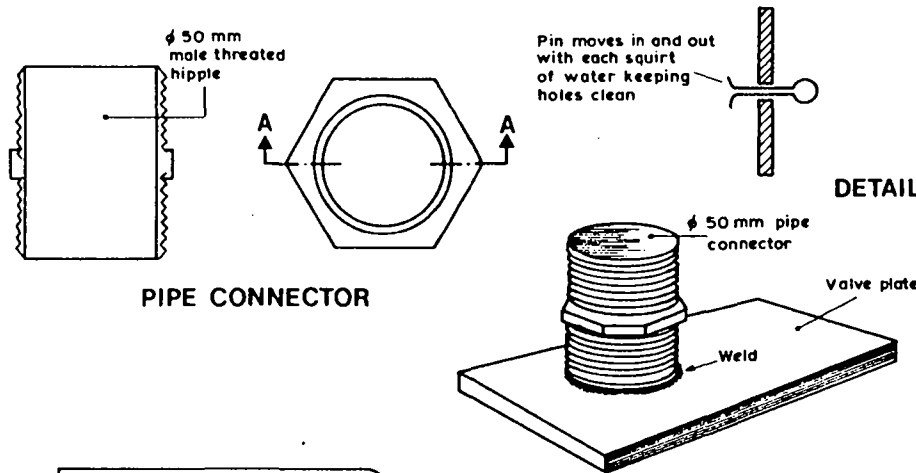


NOTE: For Dimensions of 14 m³ Capacity Tank See Guide Notes

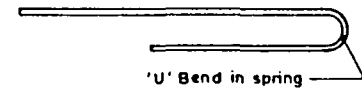
All dimensions in cm, unless otherwise shown



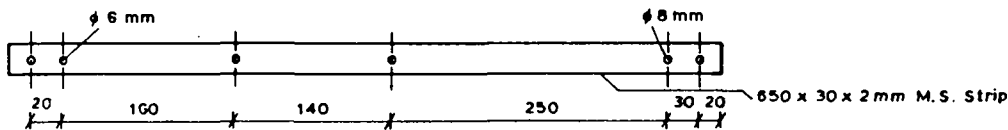
ASSEMBLY OF IMPULSE VALVE STEM & SPRING TENSION BOLT



DETAIL A



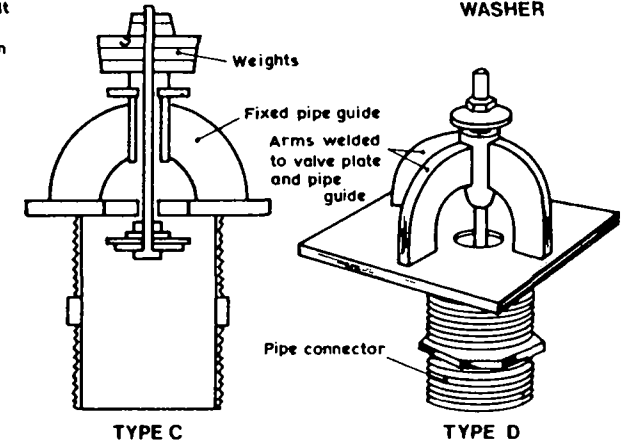
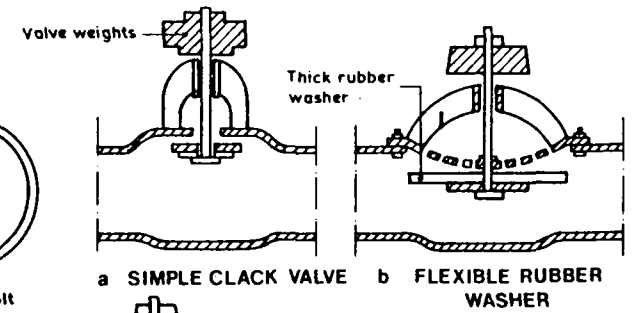
SPRING - BENT TO SHAPE FOR IMPULSE VALVE



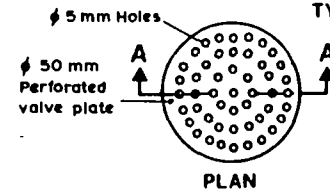
M.S. SPRING STRIP

All dimensions in cm, unless otherwise shown

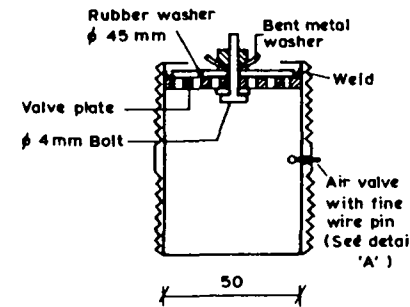
ALTERNATIVE DESIGN OF IMPULSE VALVE



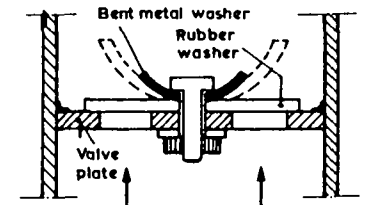
DELIVERY NON RETURN VALVE ALTERNATIVE DESIGNS



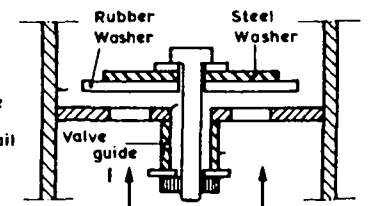
CONSTRUCTION OF DELIVERY VALVE



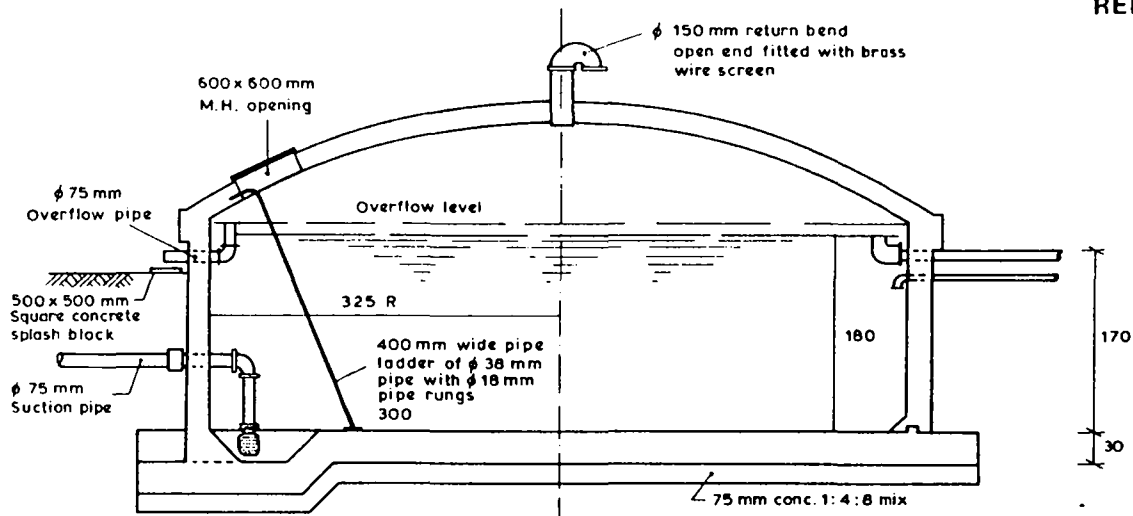
SECTION A-A



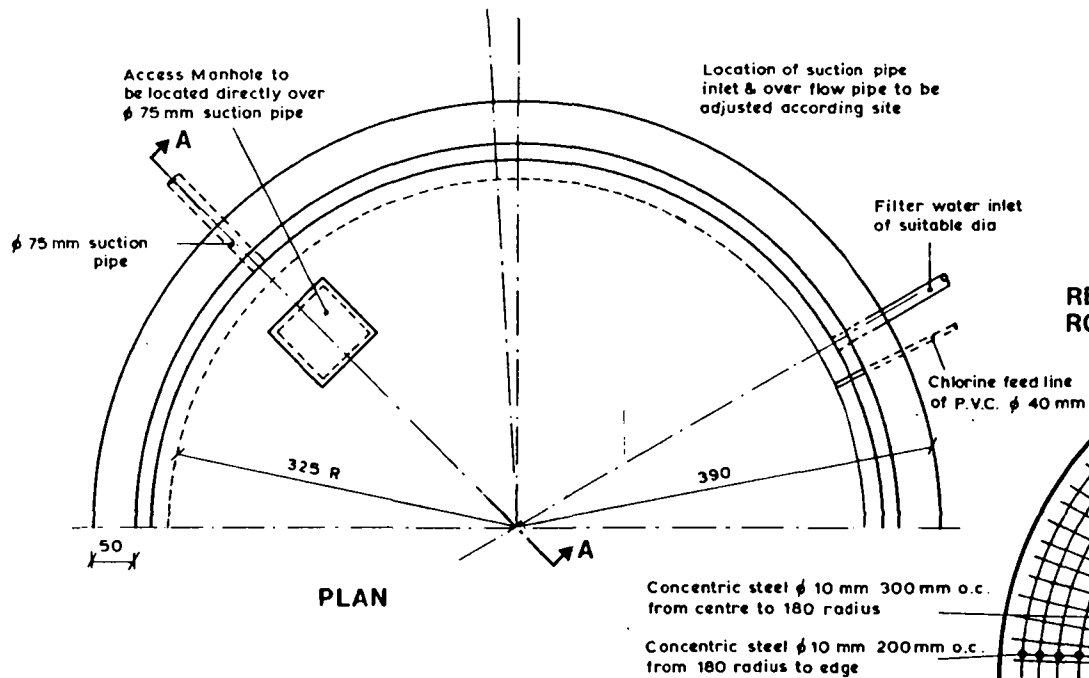
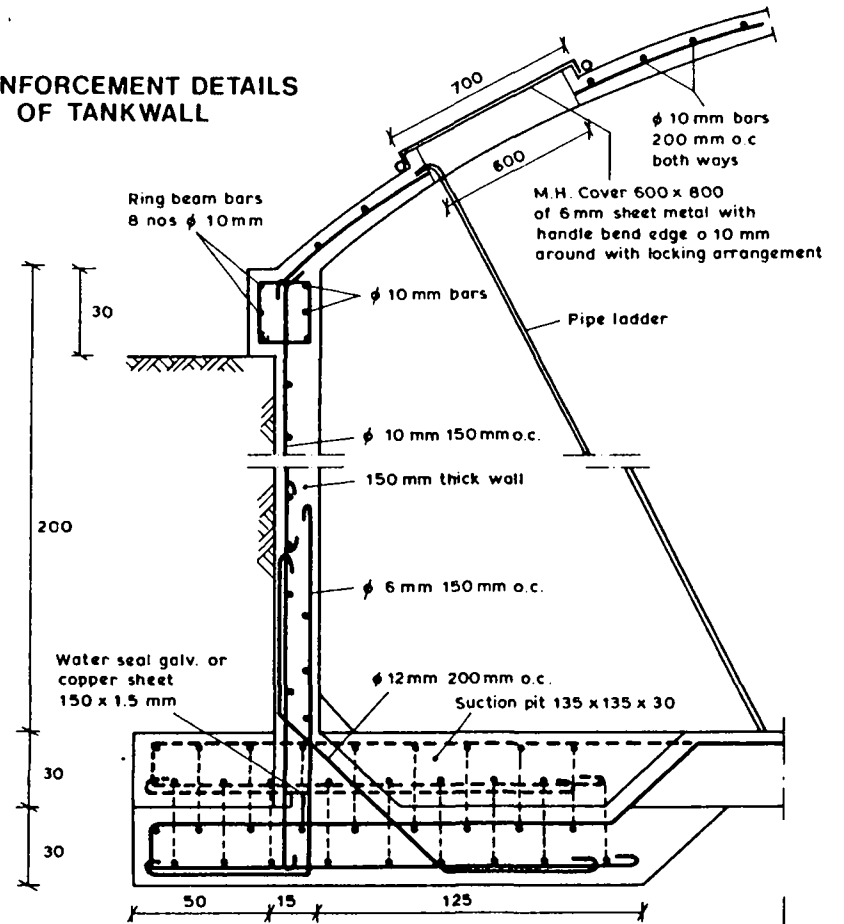
FLEXIBLE RUBBER WASHER



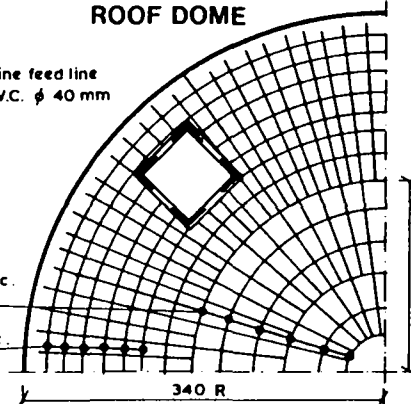
CLACK VALVE IN GUIDE



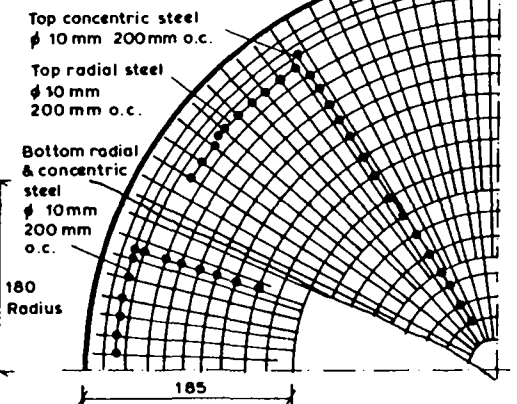
REINFORCEMENT DETAILS OF TANKWALL



REINFORCEMENT DETAILS ROOF DOME

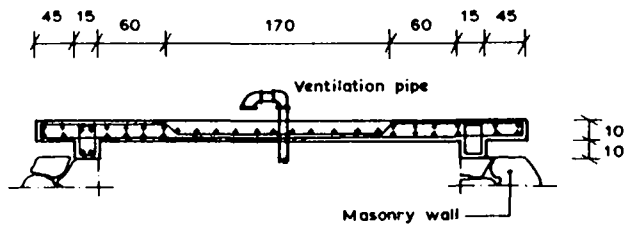
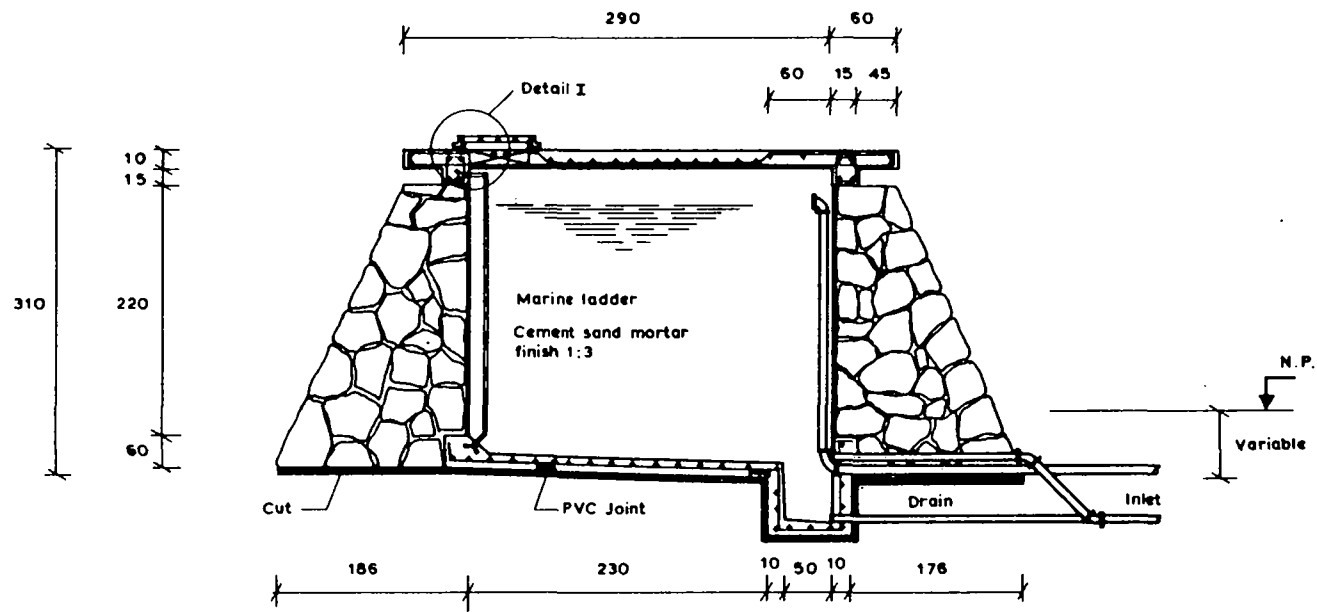


BOTTOM FLOOR



All dimensions in cm. unless otherwise shown

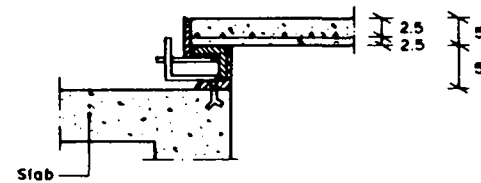
CLEAR WATER STORAGE RESERVOIR WITH DOMEROOF



TANK COVER



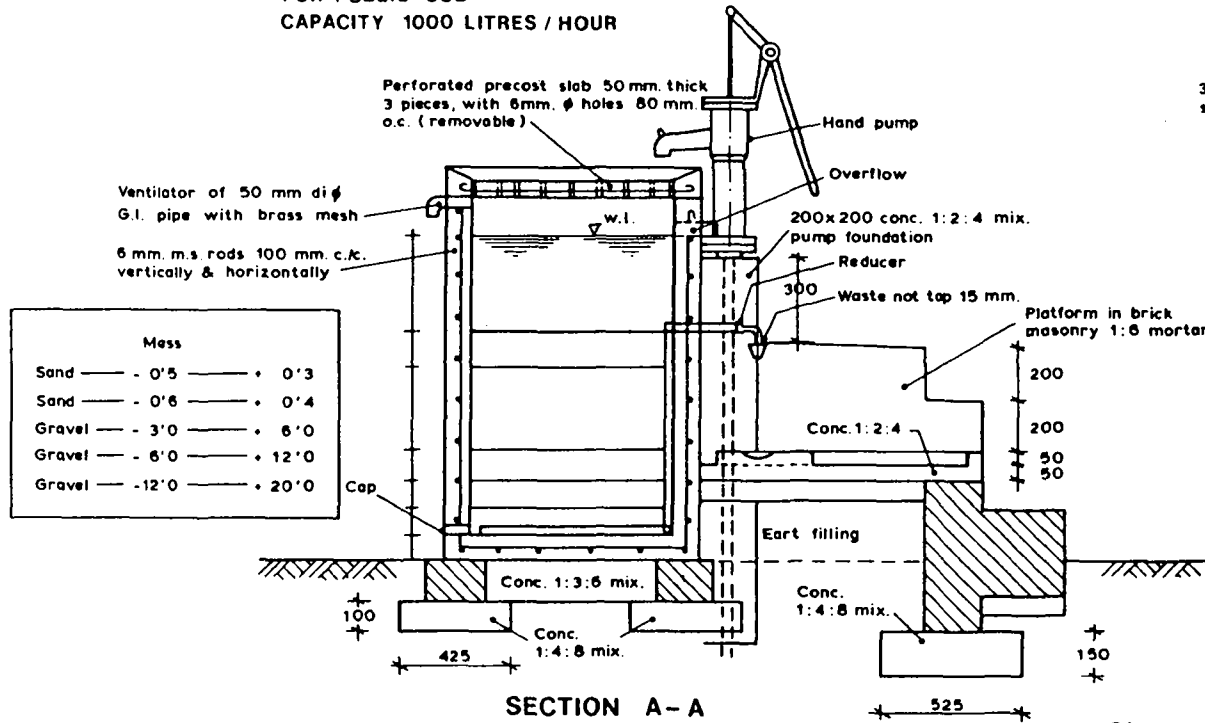
MAN HOLE



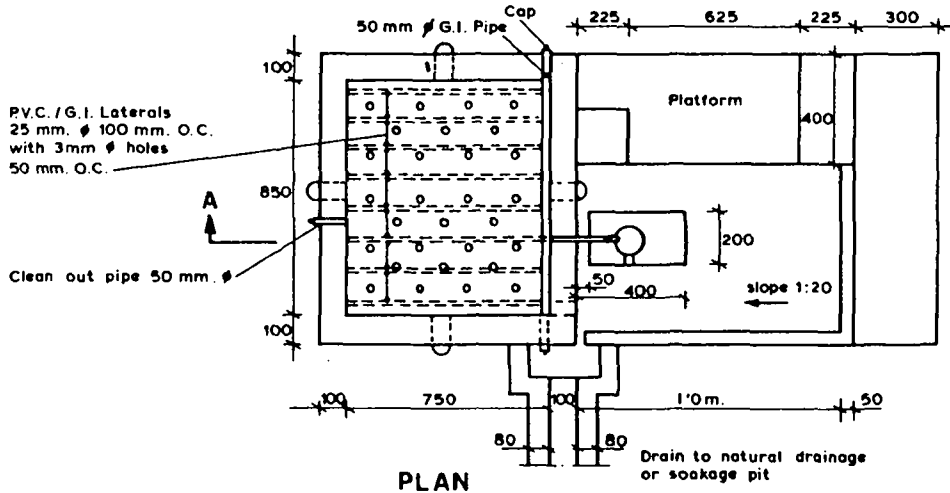
DETAIL I

All dimensions in cm, unless otherwise shown

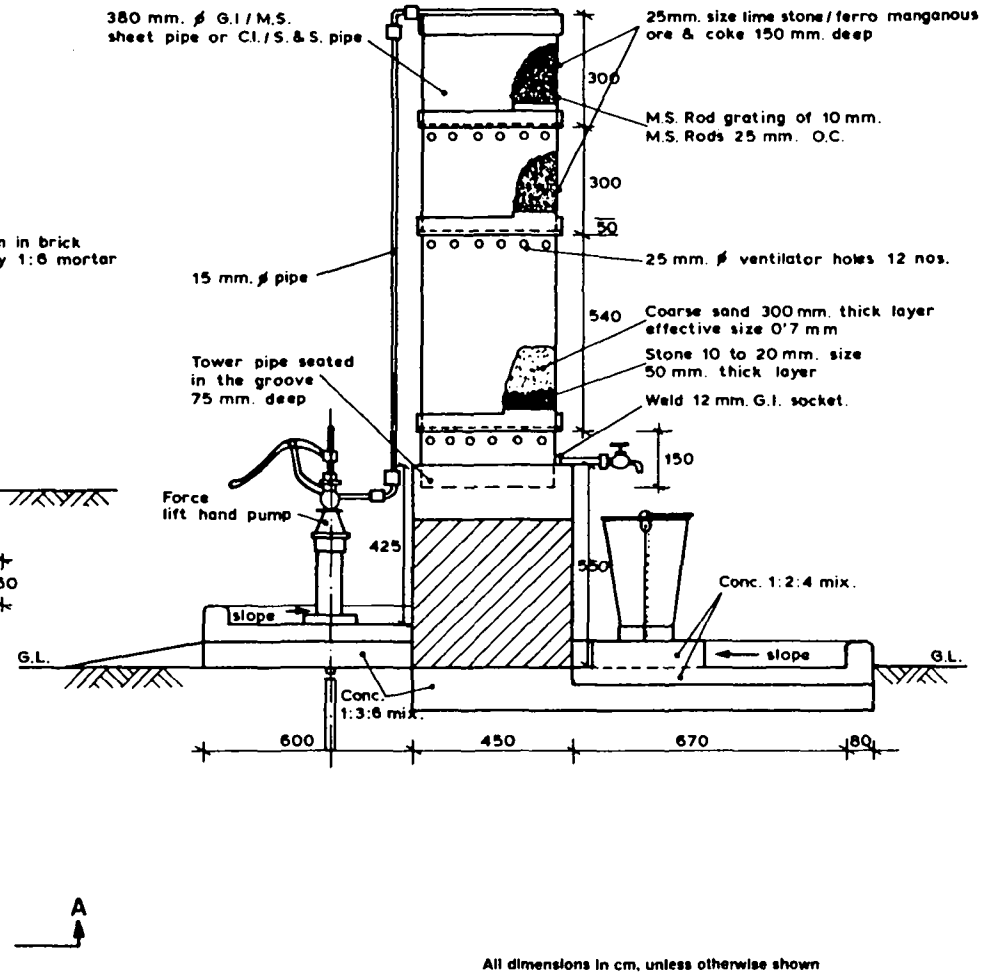
**HAND PUMP UNIT
FOR PUBLIC USE
CAPACITY 1000 LITRES / HOUR**

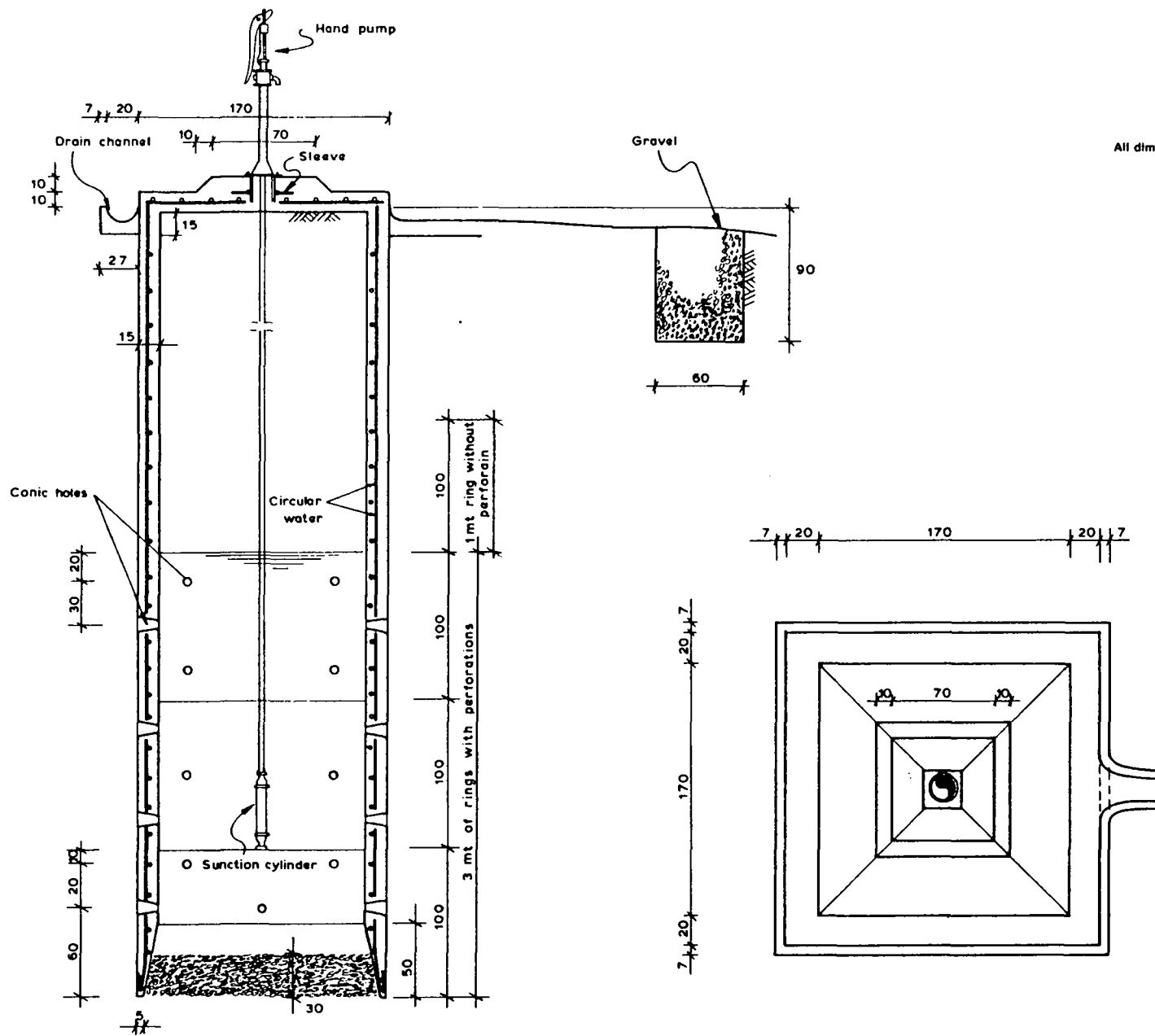


| Mess | |
|--------|-----------------|
| Sand | - 0'5 - - 0'3 |
| Sand | - 0'6 - - 0'4 |
| Gravel | - 3'0 - - 6'0 |
| Gravel | - 6'0 - - 12'0 |
| Gravel | - 12'0 - - 20'0 |



**HAND PUMP UNIT
(DOMESTIC USE)
CAPACITY 200 LITRES / HOUR**





All dimensions in cm, unless otherwise shown

LONGITUDINAL SECTION DOG WELL

PLAN WELL COVER

DUG WELL

PERU