

## APPENDIX 11 CONSTRUCTION COST DATA

BILL OF QUANTITY

Buibui Camp

B -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction ( $\phi$ 2500 m/m)				
1-1-1	Transportation	1	L.S.		
1-1-2	Digging well	10	M		
1-1-3	Furnish and install of well casing	10	M		
1-1-4	Gravel packing and cement sael	1	L.S.		
1-1-5	Covering of well	1	L.S.		
1-1-6	Miscellaneous works and others	1	L.S.		
	Sub-total				10,000.00
1-2	Existing Well Repairing				
1-2-1	Transportation	-	L.S.		
1-2-2	Repairing of well	-	L.S.		
1-2-3	Covering of well	-	L.S.		
1-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	1	L.S.		
2-1-2	Complete windmill unit	1	L.S.		
2-1-3	Install of windmill	1	L.S.		
2-1-4	Miscellaneous works and others	1	L.S.		
	Sub-total				44,505.00
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	1	L.S.		
3-1-2	Basis work and leveling works	1	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	1	L.S.		
3-1-4	Plumbing works	1	L.S.		
3-1-5	Miscellaneous works and others	1	L.S.		
	Sub-total				29,350.00
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	1	L.S.		
4-2-2	Earth work and leveling works	1	L.S.		
4-2-3	Gravel foundation works	2.0	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	1.7	M <sup>3</sup>		
4-2-5	Reinforcement bar works	100	Kg		
4-2-6	Forming works	2.0	M <sup>2</sup>		
4-2-7	Concrete brick works	4.0	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	22.5	M <sup>2</sup>		
4-2-9	Furnish and install of roof	13.0	M <sup>2</sup>		
4-2-10	Furnish and install of column	1	L.S.		
4-2-11	Plumbing works	1	L.S.		
4-2-12	Miscellaneous works and others	1	L.S.		
	Sub-total				22,000.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed (10 Rooms)				
5-1-1	Transportation	1	L.S.		
5-1-2	Earth work and leveling works	1	L.S.		
5-1-3	Gravel foundation works	7.1	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	6.5	M <sup>3</sup>		
5-1-5	Reinforcement bar works	390	Kg		
5-1-6	Forming works	7.5	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	76.0	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	31.5	M <sup>2</sup>		
5-1-9	Furnish and install of roof	54.0	M <sup>2</sup>		
5-1-10	Furnish and install of column	1	L.S.		
5-1-11	Plumbing works	1	L.S.		
5-1-12	Miscellaneous works and others	1	L.S.		
	Sub-total				40,000.00
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.75	M <sup>3</sup>		
6-1-4	Concrete brick works	7.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	10.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	30	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				7,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				164,055.00

BILL OF QUANTITY

Fahamuni Camp (1)

F(1) -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction (Ø 2500 m/m)				
1-1-1	Transportation	-	L.S.		
1-1-2	Digging well	-	M		
1-1-3	Furnish and install of well casing	-	M		
1-1-4	Gravel packing and cement sael	-	L.S.		
1-1-5	Covering of well	-	L.S.		
1-1-6	Miscellaneous works and others	-	L.S.		
	Sub-total				--
1-2	Existing Well Repairing				
1-2-1	Transportation	1	L.S.		
1-2-2	Repairing of well	1	L.S.		
1-2-3	Covering of well	1	L.S.		
1-2-4	Miscellaneous works and others	1	L.S.		
	Sub-total				4,500.00
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	-	L.S.		
2-1-2	Complete windmill unit	-	L.S.		
2-1-3	Install of windmill	-	L.S.		
2-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-2	Windmill Repairing				
2-2-1	Transportation	1	L.S.		
2-2-2	Repairing of existing tower	1	L.S.		
2-2-3	Replace the complete windmill	1	L.S.		
2-2-4	Miscellaneous works and others	1	L.S.		
	Sub-total				33,350.00
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	1	L.S.		
3-1-2	Basis work and leveling works	1	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	1	L.S.		
3-1-4	Plumbing works	1	L.S.		
3-1-5	Miscellaneous works and others	1	L.S.		
	Sub-total				29,350.00
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	1	L.S.		
4-2-2	Earth work and leveling works	1	L.S.		
4-2-3	Gravel foundation works	2.0	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	1.7	M <sup>3</sup>		
4-2-5	Reinforcement bar works	100	Kg		
4-2-6	Forming works	2.0	M <sup>2</sup>		
4-2-7	Concrete brick works	4.0	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	25.5	M <sup>2</sup>		
4-2-9	Furnish and install of roof	13.0	M <sup>2</sup>		
4-2-10	Furnish and install of column	1	L.S.		
4-2-11	Plumbing works	1	L.S.		
4-2-12	Miscellaneous works and others	1	L.S.		
	Sub-total				22,000.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed (10 Rooms)				
5-1-1	Transportation	1	L.S.		
5-1-2	Earth work and leveling works	1	L.S.		
5-1-3	Gravel foundation works	7.1	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	6.5	M <sup>3</sup>		
5-1-5	Reinforcement bar works	390	Kg		
5-1-6	Forming works	7.5	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	76.0	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	31.5	M <sup>2</sup>		
5-1-9	Furnish and install of roof	54.0	M <sup>2</sup>		
5-1-10	Furnish and install of column	1	L.S.		
5-1-11	Plumbing works	1	L.S.		
5-1-12	Miscellaneous works and others	1	L.S.		
	Sub-total				40,000.00
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.75	M <sup>3</sup>		
6-1-4	Concrete brick works	7.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	10.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	30	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				7,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				147,400.00

BILL OF QUANTITY

Fahamuni Camp (2)

F(2) -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction (Ø 2500 m/m)				
1-1-1	Transportation	1	L.S.		
1-1-2	Digging well	20	M		
1-1-3	Furnish and install of well casing	20	M		
1-1-4	Gravel packing and cement sael	1	L.S.		
1-1-5	Covering of well	1	L.S.		
1-1-6	Miscellaneous works and others	1	L.S.		
	Sub-total				20,000.00
1-2	Existing Well Repairing				
1-2-1	Transportation	-	L.S.		
1-2-2	Repairing of well	-	L.S.		
1-2-3	Covering of well	-	L.S.		
1-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	-	L.S.		
2-1-2	Complete windmill unit	-	L.S.		
2-1-3	Install of windmill	-	L.S.		
2-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	-	L.S.		
3-1-2	Basis work and leveling works	-	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	-	L.S.		
3-1-4	Plumbing works	-	L.S.		
3-1-5	Miscellaneous works and others	-	L.S.		
	Sub-total				--
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	-	L.S.		
4-2-2	Earth work and leveling works	-	L.S.		
4-2-3	Gravel foundation works	-	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
4-2-5	Reinforcement bar works	-	Kg		
4-2-6	Forming works	-	M <sup>2</sup>		
4-2-7	Concrete brick works	-	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	-	M <sup>2</sup>		
4-2-9	Furnish and install of roof	-	M <sup>2</sup>		
4-2-10	Furnish and install of column	-	L.S.		
4-2-11	Plumbing works	-	L.S.		
4-2-12	Miscellaneous works and others	-	L.S.		
	Sub-total				--



ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed ( Rooms)				
5-1-1	Transportation	-	L.S.		
5-1-2	Earth work and leveling works	-	L.S.		
5-1-3	Gravel foundation works	-	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
5-1-5	Reinforcement bar works	-	Kg		
5-1-6	Forming works	-	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	-	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	-	M <sup>2</sup>		
5-1-9	Furnish and install of roof	-	M <sup>2</sup>		
5-1-10	Furnish and install of column	-	L.S.		
5-1-11	Plumbing works	-	L.S.		
5-1-12	Miscellaneous works and others	-	L.S.		
	Sub-total				--
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.25	M <sup>3</sup>		
6-1-4	Concrete brick works	2.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	3.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	10	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				2,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				33,200.00

BILL OF QUANTITY

Kanana Camp (1)

Ka(1) -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction (ø 2500 m/m)				
1-1-1	Transportation	-	L.S.		
1-1-2	Digging well	-	M		
1-1-3	Furnish and install of well casing	-	M		
1-1-4	Gravel packing and cement sael	-	L.S.		
1-1-5	Covering of well	-	L.S.		
1-1-6	Miscellaneous works and others	-	L.S.		
	Sub-total				--
1-2	Existing Well Repairing				
1-2-1	Transportation	1	L.S.		
1-2-2	Repairing of well	1	L.S.		
1-2-3	Covering of well	1	L.S.		
1-2-4	Miscellaneous works and others	1	L.S.		
	Sub-total				4,500.00
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	-	L.S.		
2-1-2	Complete windmill unit	-	L.S.		
2-1-3	Install of windmill	-	L.S.		
2-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	-	L.S.		
3-1-2	Basis work and leveling works	-	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	-	L.S.		
3-1-4	Plumbing works	-	L.S.		
3-1-5	Miscellaneous works and others	-	L.S.		
	Sub-total				--
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	-	L.S.		
4-2-2	Earth work and leveling works	-	L.S.		
4-2-3	Gravel foundation works	-	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
4-2-5	Reinforcement bar works	-	Kg		
4-2-6	Forming works	-	M <sup>2</sup>		
4-2-7	Concrete brick works	-	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	-	M <sup>2</sup>		
4-2-9	Furnish and install of roof	-	M <sup>2</sup>		
4-2-10	Furnish and install of column	-	L.S.		
4-2-11	Plumbing works	-	L.S.		
4-2-12	Miscellaneous works and others	-	L.S.		
	Sub-total				--

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed ( Rooms)				
5-1-1	Transportation	-	L.S.		
5-1-2	Earth work and leveling works	-	L.S.		
5-1-3	Gravel foundation works	-	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
5-1-5	Reinforcement bar works	-	Kg		
5-1-6	Forming works	-	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	-	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	-	M <sup>2</sup>		
5-1-9	Furnish and install of roof	-	M <sup>2</sup>		
5-1-10	Furnish and install of column	-	L.S.		
5-1-11	Plumbing works	-	L.S.		
5-1-12	Miscellaneous works and others	-	L.S.		
	Sub-total				--
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.25	M <sup>3</sup>		
6-1-4	Concrete brick works	2.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	3.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	10	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				2,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				17,700.00

BILL OF QUANTITY

Kanana Camp (2)

Ka(2) -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction (Ø 2500 m/m)				
1-1-1	Transportation	1	L.S.		
1-1-2	Digging well	15	M		
1-1-3	Furnish and install of well casing	15	M		
1-1-4	Gravel packing and cement sael	1	L.S.		
1-1-5	Covering of well	1	L.S.		
1-1-6	Miscellaneous works and others	1	L.S.		
	Sub-total				15,000.00
1-2	Existing Well Repairing				
1-2-1	Transportation	-	L.S.		
1-2-2	Repairing of well	-	L.S.		
1-2-3	Covering of well	-	L.S.		
1-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	1	L.S.		
2-1-2	Complete windmill unit	1	L.S.		
2-1-3	Install of windmill	1	L.S.		
2-1-4	Miscellaneous works and others	1	L.S.		
	Sub-total				44,505.00
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	1	L.S.		
3-1-2	Basis work and leveling works	1	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	1	L.S.		
3-1-4	Plumbing works	1	L.S.		
3-1-5	Miscellaneous works and others	1	L.S.		
	Sub-total				29,350.00
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	1	L.S.		
4-2-2	Earth work and leveling works	1	L.S.		
4-2-3	Gravel foundation works	2.0	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	1.7	M <sup>3</sup>		
4-2-5	Reinforcement bar works	100	Kg		
4-2-6	Forming works	2.0	M <sup>2</sup>		
4-2-7	Concrete brick works	4.0	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	22.5	M <sup>2</sup>		
4-2-9	Furnish and install of roof	13.0	M <sup>2</sup>		
4-2-10	Furnish and install of column	1	L.S.		
4-2-11	Plumbing works	1	L.S.		
4-2-12	Miscellaneous works and others	1	L.S.		
	Sub-total				22,000.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed (15 Rooms)				
5-1-1	Transportation	1	L.S.		
5-1-2	Earth work and leveling works	1	L.S.		
5-1-3	Gravel foundation works	11.0	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	10.0	M <sup>3</sup>		
5-1-5	Reinforcement bar works	595	Kg		
5-1-6	Forming works	12.5	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	12.0	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	47.1	M <sup>2</sup>		
5-1-9	Furnish and install of roof	81.0	M <sup>2</sup>		
5-1-10	Furnish and install of column	1	L.S.		
5-1-11	Plumbing works	1	L.S.		
5-1-12	Miscellaneous works and others	1	L.S.		
	Sub-total				60,000.00
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.75	M <sup>3</sup>		
6-1-4	Concrete brick works	7.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	10.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	30	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				7,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				189,055.00

BILL OF QUANTITY

Kidimu Camp

Ki -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction (Ø 2500 m/m)				
1-1-1	Transportation	1	L.S.		
1-1-2	Digging well	15	M		
1-1-3	Furnish and install of well casing	15	M		
1-1-4	Gravel packing and cement sael	1	L.S.		
1-1-5	Covering of well	1	L.S.		
1-1-6	Miscellaneous works and others	1	L.S.		
	Sub-total				15,000.00
1-2	Existing Well Repairing				
1-2-1	Transportation	-	L.S.		
1-2-2	Repairing of well	-	L.S.		
1-2-3	Covering of well	-	L.S.		
1-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	1	L.S.		
2-1-2	Complete windmill unit	1	L.S.		
2-1-3	Install of windmill	1	L.S.		
2-1-4	Miscellaneous works and others	1	L.S.		
	Sub-total				44,505.00
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00



ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	1	L.S.		
3-1-2	Basis work and leveling works	1	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	1	L.S.		
3-1-4	Plumbing works	1	L.S.		
3-1-5	Miscellaneous works and others	1	L.S.		
	Sub-total				29,350.00
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	1	L.S.		
4-2-2	Earth work and leveling works	1	L.S.		
4-2-3	Gravel foundation works	2.0	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	1.7	M <sup>3</sup>		
4-2-5	Reinforcement bar works	100	Kg		
4-2-6	Forming works	2.0	M <sup>2</sup>		
4-2-7	Concrete brick works	4.0	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	25.5	M <sup>2</sup>		
4-2-9	Furnish and install of roof	13.0	M <sup>2</sup>		
4-2-10	Furnish and install of column	1	L.S.		
4-2-11	Plumbing works	1	L.S.		
4-2-12	Miscellaneous works and others	1	L.S.		
	Sub-total				22,000.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed (10 Rooms)				
5-1-1	Transportation	1	L.S.		
5-1-2	Earth work and leveling works	1	L.S.		
5-1-3	Gravel foundation works	7.1	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	6.5	M <sup>3</sup>		
5-1-5	Reinforcement bar works	390	Kg		
5-1-6	Forming works	7.5	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	76.0	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	31.5	M <sup>2</sup>		
5-1-9	Furnish and install of roof	54.0	M <sup>2</sup>		
5-1-10	Furnish and install of column	1	L.S.		
5-1-11	Plumbing works	1	L.S.		
5-1-12	Miscellaneous works and others	1	L.S.		
	Sub-total				40,000.00
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.75	M <sup>3</sup>		
6-1-4	Concrete brick works	7.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	10.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	30	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				7,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				169,055.00

BILL OF QUANTITY

Other Camp (1 Camp)

0 -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction (Ø 2500 m/m)				
1-1-1	Transportation	1	L.S.		
1-1-2	Digging well	17	M		
1-1-3	Furnish and install of well casing	17	M		
1-1-4	Gravel packing and cement sael	1	L.S.		
1-1-5	Covering of well	1	L.S.		
1-1-6	Miscellaneous works and others	1	L.S.		
	Sub-total				17,000.00
1-2	Existing Well Repairing				
1-2-1	Transportation	-	L.S.		
1-2-2	Repairing of well	-	L.S.		
1-2-3	Covering of well	-	L.S.		
1-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	-	L.S.		
2-1-2	Complete windmill unit	-	L.S.		
2-1-3	Install of windmill	-	L.S.		
2-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	1	L.S.		
2-3-2	Complete hand pump unit	1	L.S.		
2-3-3	Install of hand pump	1	L.S.		
2-3-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,200.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	-	L.S.		
3-1-2	Basis work and leveling works	-	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	-	L.S.		
3-1-4	Plumbing works	-	L.S.		
3-1-5	Miscellaneous works and others	-	L.S.		
	Sub-total				--
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	1	L.S.		
4-1-2	Earth work and leveling works	1	L.S.		
4-1-3	Gravel foundation works	2.3	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	2.0	M <sup>3</sup>		
4-1-5	Reinforcement bar works	120	Kg		
4-1-6	Forming works	8.0	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				3,000.00
4-2	Communal water point				
4-2-1	Transportation	-	L.S.		
4-2-2	Earth work and leveling works	-	L.S.		
4-2-3	Gravel foundation works	-	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
4-2-5	Reinforcement bar works	-	Kg		
4-2-6	Forming works	-	M <sup>2</sup>		
4-2-7	Concrete brick works	-	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	-	M <sup>2</sup>		
4-2-9	Furnish and install of roof	-	M <sup>2</sup>		
4-2-10	Furnish and install of column	-	L.S.		
4-2-11	Plumbing works	-	L.S.		
4-2-12	Miscellaneous works and others	-	L.S.		
	Sub-total				--

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed ( Rooms)				
5-1-1	Transportation	-	L.S.		
5-1-2	Earth work and leveling works	-	L.S.		
5-1-3	Gravel foundation works	-	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
5-1-5	Reinforcement bar works	-	Kg		
5-1-6	Forming works	-	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	-	M <sup>2</sup>		
5-1-8	Plastering works (mortar 20m/m)	-	M <sup>2</sup>		
5-1-9	Furnish and install of roof	-	M <sup>2</sup>		
5-1-10	Furnish and install of column	-	L.S.		
5-1-11	Plumbing works	-	L.S.		
5-1-12	Miscellaneous works and others	-	L.S.		
	Sub-total				--
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.25	M <sup>3</sup>		
6-1-4	Concrete brick works	2.5	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	3.5	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	10	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				2,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	-	L.S.		
7-1-2	Materials for distribution	-	L.S.		
7-1-3	Earth works and installation	-	L.S.		
7-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
Grand Total	.....				30,200.00

BILL OF QUANTITY

Mwachinga (1 Point)

M -1

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT (Ksh)
1.	Well Construction				
1-1	Well Construction ( $\phi$ 2500 m/m)				
1-1-1	Transportation	-	L.S.		
1-1-2	Digging well	-	M		
1-1-3	Furnish and install of well casing	-	M		
1-1-4	Gravel packing and cement seal	-	L.S.		
1-1-5	Covering of well	-	L.S.		
1-1-6	Miscellaneous works and others	-	L.S.		
	Sub-total				--
1-2	Existing Well Repairing				
1-2-1	Transportation	-	L.S.		
1-2-2	Repairing of well	-	L.S.		
1-2-3	Covering of well	-	L.S.		
1-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2.	Water Drauing Instruments				
2-1	Windmill				
2-1-1	Transportation	-	L.S.		
2-1-2	Complete windmill unit	-	L.S.		
2-1-3	Install of windmill	-	L.S.		
2-1-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-2	Windmill Repairing				
2-2-1	Transportation	-	L.S.		
2-2-2	Repairing of existing tower	-	L.S.		
2-2-3	Replace the complete windmill	-	L.S.		
2-2-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--
2-3	Hand Pump				
2-3-1	Transportation	-	L.S.		
2-3-2	Complete hand pump unit	-	L.S.		
2-3-3	Install of hand pump	-	L.S.		
2-3-4	Miscellaneous works and others	-	L.S.		
	Sub-total				--

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
3.	Construction of Water Reservoir Tank (11 M <sup>3</sup> )				
3-1-1	Transportation	-	L.S.		
3-1-2	Basis work and leveling works	-	L.S.		
3-1-3	Furnish and install of water reservoir tank complete with necessary coating	-	L.S.		
3-1-4	Plumbing works	-	L.S.		
3-1-5	Miscellaneous works and others	-	L.S.		
	Sub-total				--
4.	Communal Water Point				
4-1	Platform around well				
4-1-1	Transportation	-	L.S.		
4-1-2	Earth work and leveling works	-	L.S.		
4-1-3	Gravel foundation works	-	M <sup>3</sup>		
4-1-4	Concrete works (1:3:6)	-	M <sup>3</sup>		
4-1-5	Reinforcement bar works	-	Kg		
4-1-6	Forming works	-	M <sup>2</sup>		
4-1-7	Miscellaneous works and others	-	L.S.		
	Sub-total				---
4-2	Communal water point				
4-2-1	Transportation	1	L.S.		
4-2-2	Earth work and leveling works	1	L.S.		
4-2-3	Gravel foundation works	2.0	M <sup>3</sup>		
4-2-4	Concrete works (1:3:6)	1.7	M <sup>3</sup>		
4-2-5	Reinforcement bar works	100	Kg		
4-2-6	Forming works	2.0	M <sup>2</sup>		
4-2-7	Concrete brick works	4.0	M <sup>3</sup>		
4-2-8	Plastering works (mortar 20m/m)	25.5	M <sup>2</sup>		
4-2-9	Furnish and install of roof	13.0	M <sup>2</sup>		
4-2-10	Furnish and install of column	1	L.S.		
4-2-11	Plumbing works	1	L.S.		
4-2-12	Miscellaneous works and others	1	L.S.		
	Sub-total				25,000.00

ITEM NO.	WORK DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
5.	Bathing Shed (5 Rooms)				
5-1-1	Transportation	1	L.S.		
5-1-2	Earth work and leveling works	1	L.S.		
5-1-3	Gravel foundation works	3.9	M <sup>3</sup>		
5-1-4	Concrete works (1:3:6)	3.4	M <sup>3</sup>		
5-1-5	Reinforcement bar works	204	Kg		
5-1-6	Forming works	5.0	M <sup>2</sup>		
5-1-7	Concrete brick (wall) works	46.2	M <sup>2</sup>		
5-1-8	Plastering works (mortal 20m/m)	15.6	M <sup>2</sup>		
5-1-9	Furnish and install of roof	27.0	M <sup>2</sup>		
5-1-10	Furnish and install of column	1	L.S.		
5-1-11	Plumbing works	1	L.S.		
5-1-12	Miscellaneous works and others	1	L.S.		
	Sub-total				20,000.00
6.	Waste Water Drainage				
6-1-1	Transportation	1	L.S.		
6-1-2	Earth work and leveling works	1	L.S.		
6-1-3	Concrete works (1:4:6)	0.5	M <sup>3</sup>		
6-1-4	Concrete brick works	5.0	M <sup>2</sup>		
6-1-5	Gravel works (40-60 m/m)	7.0	M <sup>3</sup>		
6-1-6	Ceramic pipe works (Ø100 m/m)	2.0	M		
6-1-7	Miscellaneous works and others	1	L.S.		
	Sub-total				5,000.00
7.	Distribution Pipe (L=50 <sup>m</sup> X 3 places)				
7-1-1	Transportation	1	L.S.		
7-1-2	Materials for distribution	1	L.S.		
7-1-3	Earth works and installation	1	L.S.		
7-1-4	Miscellaneous works and others	1	L.S.		
	Sub-total				8,000.00
Grand Total	.....				58,000.00



COST FOR CONNECTION WITH MAIN PIPE

Pipe	2"Ø G.I.	78 shr/m	50 m
Tees	2" X 2" G.I.	36 shr/Unit	1
Nipples	2" G.I.	18.8 shr/Unit	3
Full Way Valves	2"	150 shr/Unit	1
Reducing Socket	2" X 1½" G.I.	20.4 shr/Unit	1
Nipples	1½" G.I.	13.7 shr/Unit	2
Reducing Socket	1½" X 1" G.I.	13.5 shr/Unit	2
Bends	1" G.I.	16.4 shr/Unit	2
Stop Cock	1"	150 shr/Unit	2
Union	2"	55 shr/Unit	1
Union	1"	20.4 shr/Unit	2
	<b>Sub. Total :</b>	<b>4,645.8 shr</b>	
Transportation	25 % of the above	1,161 shr	
Labour Charge	20 shr/m 50 m	1,000 shr	
Agency Fee	15 % of the above	1,021 shr	
	<b>T o t a l :</b>	<b>7,830 shr</b>	<b>Say 8,000 shr</b>

**PRICE SCHEDULE FOR DEPARTMENTAL RIGS TO BE  
CHARGED AS FROM JANUARY, 1980 ONWARDS**

ITEM	DESCRIPTION OF WORKS	UNIT	RATE FOR R/RIGS	RATE FOR P/RIGS
1.	Mobilisation and transport of whole drilling unit from .....to ..... drilling sites and back	km	76.00	15.00
2.	- Ditto- erecting and dismantling of whole drilling unit on the site	1s	11,930.00	7,500.00
3.	Dismantling, shifting and erecting of whole unit from one site to the next, if working in one area for the same project	1s	12,690.00	2,550.00
4.a	For unconsolidated rock			
	drilling 152 mm Ø	m	270.00	334.00
	" 203 mm Ø	m	314.00	527.00
	" 254 mm Ø	m	468.00	750.00
	" 305 mm Ø	m	600.00	950.00
	" 360 mm Ø	m	1,250.00	1,250.00
4.b	For consolidated rock			
	Drilling 152mm Ø	m	314.00	334.00
	" 203mm Ø	m	468.00	468.00
	" 254mm Ø	m	600.00	600.00
	" 305mm Ø	m	750.00	750.00
5.a	Supply and insert plain steel casing			
	a) 152 mm Ø	m	408.00	408.00
	b) 203 mm Ø	m	480.00	480.00
	c) 254 mm Ø	m	656.00	656.00
	d) 305 mm Ø	m	800.00	800.00
6.	Supply and insert slotted casing			
	a) 152 mm Ø	m	508.00	508.00
	b) 203 mm Ø	m	580.00	580.00
	c) 254 mm Ø	m	756.00	756.00
7.	Supply and insert Bridge slotted casing			
	a) 152 mm Ø	m	3,400.00	3,400.00
	b) 203 mm Ø	m	4,580.00	4,580.00
	Supply and insert plain Dura pipes	m	201.00	201.00
	supply and insert slotted Dura pipes (screen)			
	d) 152 mm Ø	m	3,400.00	3,400.00
	e) 203 mm Ø	m	4,250.00	4,250.00

ITEM	DESCRIPTION	UNIT	RATE FOR R/RIG	RATE FOR P/RIG
8.	Supply and insert Johnsons screen			
	a) 152 mm	m	3,400.00	3,400.00
	b) 203 mm	m	4,250.00	4,250.00
9.	Only inserting casing	m	150.00	150.00
10.	Supply and insert gravel pack	m <sup>3</sup>	1,000.00	1,000.00
11.	Supply and cementation work	m <sup>3</sup>	700.00	700.00
12.	Developing work including inserting and removal of development equipment	Hr	317.00	317.00
13.	Installation and removal of test pump equipment	Hr	317.00	317.00
14.	Test pumping	Hr	317.00	317.00
15.	Preparation of well head with well cap, serial No. and cement plate 1.0 x 1.0 x 0.5 m <sup>3</sup> around well head	Is	1,000.00	1,000.00
16.	Supply water for drilling operations and field camp	Is	2,000.00	2,000.00
17.	Reaming hole form			
	154 mm to 219 m	m	150.00	N/A
	219 m to 311 m	m	252.00	N/A
	311 m to 381 m	m	37,377.00	N/A
18.	Cementation work slotted casing 203 mm Ø	Hrs.	317.00	317.00
19.	Water casing pipes steel size 6"			
	Casing 6m (long) with collars 6"	m	462.00	462.00
	Casing reduced 8" to 6"	m	742.50	742.50
	Shutter screens size 6" with collars	No.	3,630.00	3,630.00
	Shutter screens standard size 8"	m	1,089.00	1,089.00
		m	1,419.00	1,419.00
20.	cleaning	Hr	317.00	317.00
21.	Removal of casing	Hr	317.00	317.00
22.	Waiting time	Hr	317.00	317.00
23.	Formation of sampling	No.	50.00	50.00
24.	Water sampling	No.	100.00	100.00
25.	Extracting of casing	Hr	317.00	317.00
26.	Other works (specify)			

Date: 4th February, 1983.

Your Ref.....

Our Ref. ME/JICA/03/83.

M/s. Japan International CO-operation Agency,  
(J.I.C.A.).

Dear Sirs,

RE: REPAIRING AND PLASTERING OF SHALLOW WELL.

This is in reference to our survey of Well Number one after Ramisi sugar Factory where we discovered that your Well is 7ft. deep with a diameter of 11ft.

We shall do the Plastering of the Well covering the 11ft. diameter of it with cement and sand.

To complete the whole job to your satisfaction Labour, Material and Transportation inclusive will be Kshs'. 4,500.00.

QUOTATION FOR THE HAND FORCE PUMP.

The cost for installing a hand force pump on the above Well with complete necessary fittings, pipes, Rods, Cylinder Pump Transportation and Labour will be Kshs'. 8,200.00

QUOTATION FOR WATER RESERVOIR TANK.

To construct a concret cement tank for 12,000 litres Material to be used will be coral block, Steel, Blast sand and cement.

The storage tank will be the same as the enclosed photo this tank will be supplied together with fitting of 1 inch, outlet pipe and 4 gate valves'.

The roof of the Tank will be covered with G.I.C Sheets Galvanised'.

To complete the whole work as per our above specifications will be Kshs'. 29,350.00.

Note that the above quotation implies only on our own plan of Construction and should there be any alterations on it then the quotation will be liable for a change'.

Yours faithfully,

Date: 7th February, 1983.

Your Ref.....

Our Ref ME/JIC/Q3/83.

M/s. Japan International Co-operation (Agency)

Dear Sirs,

QUOTATION FOR DIGGING SHALLOW WELL.

With reference to the above we have to inform you that it will cost you Kshs. 1000.00 per metre depth with a diameter of 2½ metres. The surrounding diameter of the Well will be done by Coral block (Calbat) Cement work and Plastering. The top of the Well will also be covered.

The above quotation price includes Transport, Material and Miscellaneous.

Note that the place for the Well to be dug will be duly authorised by yourselves.

Yours faithfully,

Date: 4th February, 1983.

Your Ref. ....

Our Ref. ME/JICA/02/83.

M/s. Japan International Co-operation Agency,  
(J.I.C.A.).

Dear Sirs,

QUOTATION FOR WINDMILL.

With reference to our survey on your site on well No. 1 after the Ramisi Sugar Factory we append below the specifications and quotation for the type of the Windmill that would be suitable for it.

I. SPECIFICATION OF THE WINDMILL.

- (a) Rotor size 12ft Galvanised and mild steel
- (b) Tower size 25ft high from ground level
- (c) Gear Reduction type
- (d) Strong Concrete foundation for the Tower
- (e) Suction Pipe 2½" diameter
- (f) One Cylinder Pump and all necessary fittings
- (g) One outlet Pipe to the reservoir tank 20ft.
- (h) Structure work mild steel Angle line.

We paint our Windmill with special corrosion proof paint undercoat and the finishing coat of Con Blue Robbialac.

1. The complete Windmill Unit will be Kshs.	34,500.00
2. Transportation of the Windmill.... Kshs.	1,250.00
3. Installation charges..... Kshs.	2,950.00
4. 15% Government Sale Tax..... Kshs.	5,805.00
Nett amount..... Kshs.	<u>44,505.00</u>

Yours faithfully,

Date: 4th February, 1983.

Your Ref. ....

Our Ref. ME/JICA/OI/83.

M/s. Japan International Co-operation Agency,  
(J.I.C.A.).

Dear Sirs,

RE: QUOTATION FOR THE REPAIR OF A WINDMILL ON WELL  
NO. 2 BEFORE RAMISI SUGAR FACTORY FROM MOMBASA.

With reference to our visit on your above mentioned Well we have to inform you that the whole of your Windmill Unit needs to be replaced.

The following will be supplied by ourselves:-

- (a) One New Rotor 12ft.
- (b) Reduction Gear Box
- (c) Tail
- (d) Brake System
- (e) Suction Pipe and Outlet Pipe
- (f) One Cylinder Pump
- (g) Complete Painting of the Windmill.

We have to guarantee that the Windmill will be in full operation after all the above mentioned necessities will have been applied (fulfilled).

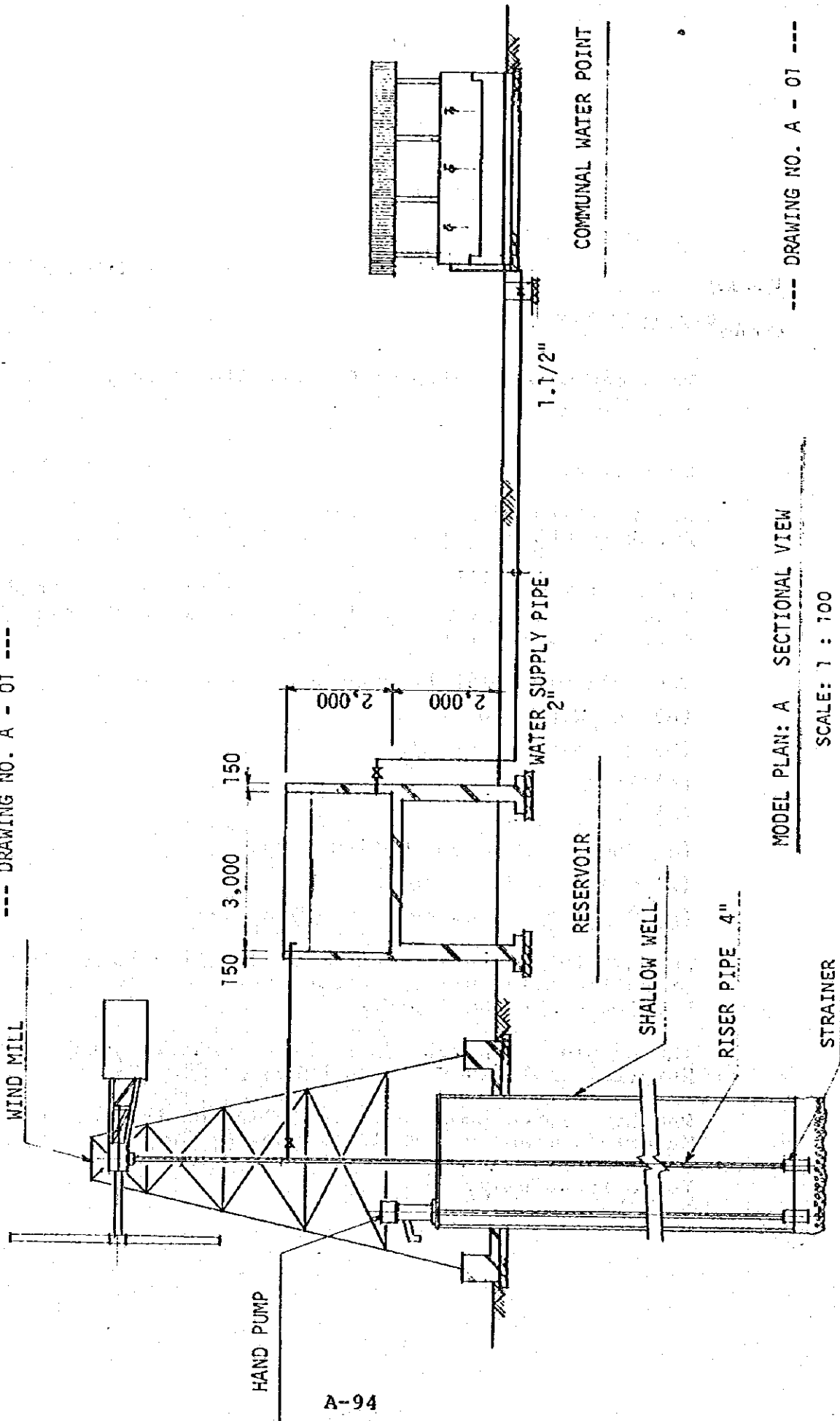
The complete Windmill Unit, Transportation, Labour and Material inclusive will be Kshs. 33,350.00.

The hand force pump to be installed on the same well Labour, Material, Transport will be Kshs. 8,200.00.

Yours faithfully,

MODEL PLAN : TYPE-A, SHALLOW WELL EQUIPED WITH WINDMILL AND HAND PUMP

--- DRAWING NO. A - 01 ---



MODEL PLAN: A SECTIONAL VIEW

SCALE: 1 : 700

--- DRAWING NO. A - 01 ---



DRAIN

WATER TAP 1/2"

VALVE PIT

1.1/2"

BATHING FACILITIES

DRAIN PIPE 3"

VALVE PIT

1.1/2"

WATER TAP 1/2"

COMMUNAL WATER POINT

RISER PIPE 2"

150 3,000 150

RESERVOIR

150 3,000 150

DRAIN VALVE & PIPE 2"

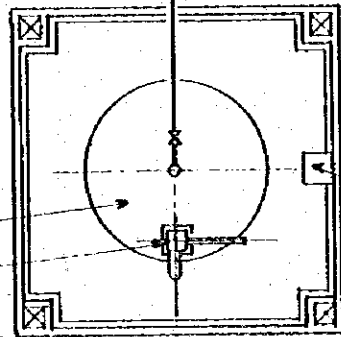
2"

WATER SUPPLY PIPE

SHALLOW WELL

HAND PUMP

4,500



DRAIN PIT

WELL HEAD FACILITY

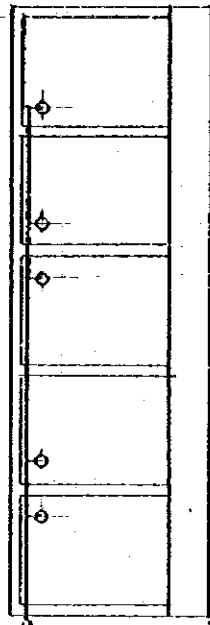
56-A

MODEL PLAN: TYPE A-1 FACILITY LAYOUT PLAN

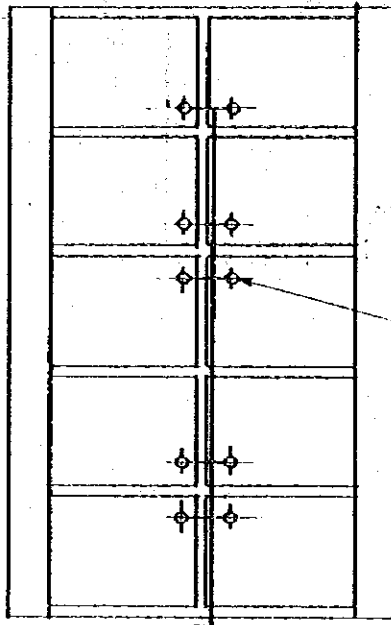
--- DRAWING NO. A - 02 ---

SCALE: 1 : 100

DRAIN

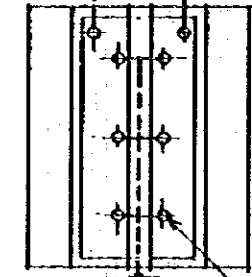


BATHING FACILITIES



DRAIN PIPE 3"

WATER TAP 1/2"

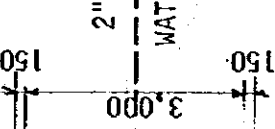


COMMUNAL WATER POINT

VALVE PIT

VALVE PIT

1.1/2"



RISER PIPE 2"

150 3,000 150

RESERVOIR

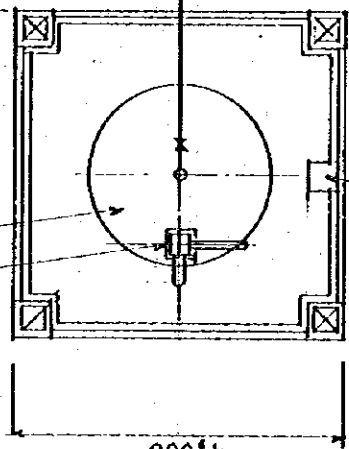
DRAIN VALVE & PIPE 2"

SHALLOW WELL

HAND PUMP

96-A

4,500



DRAIN PIT

WELL HEAD FACILITY

4,500

WATER SUPPLY PIPE 1.1/2"

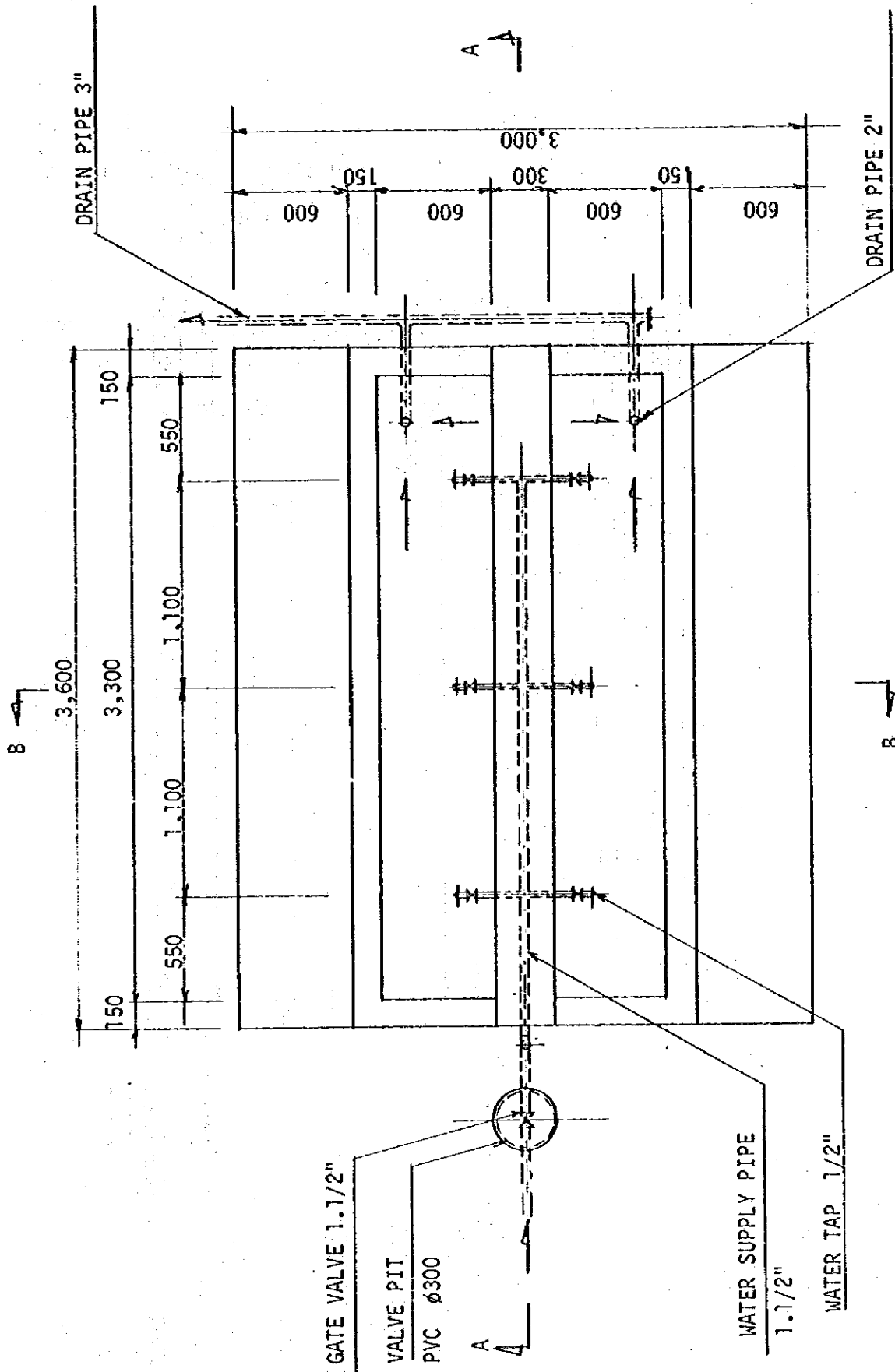
WATER TAP 1/2"

MODEL PLAN: TYPE A-2 FACILITY LAYOUT PLAN

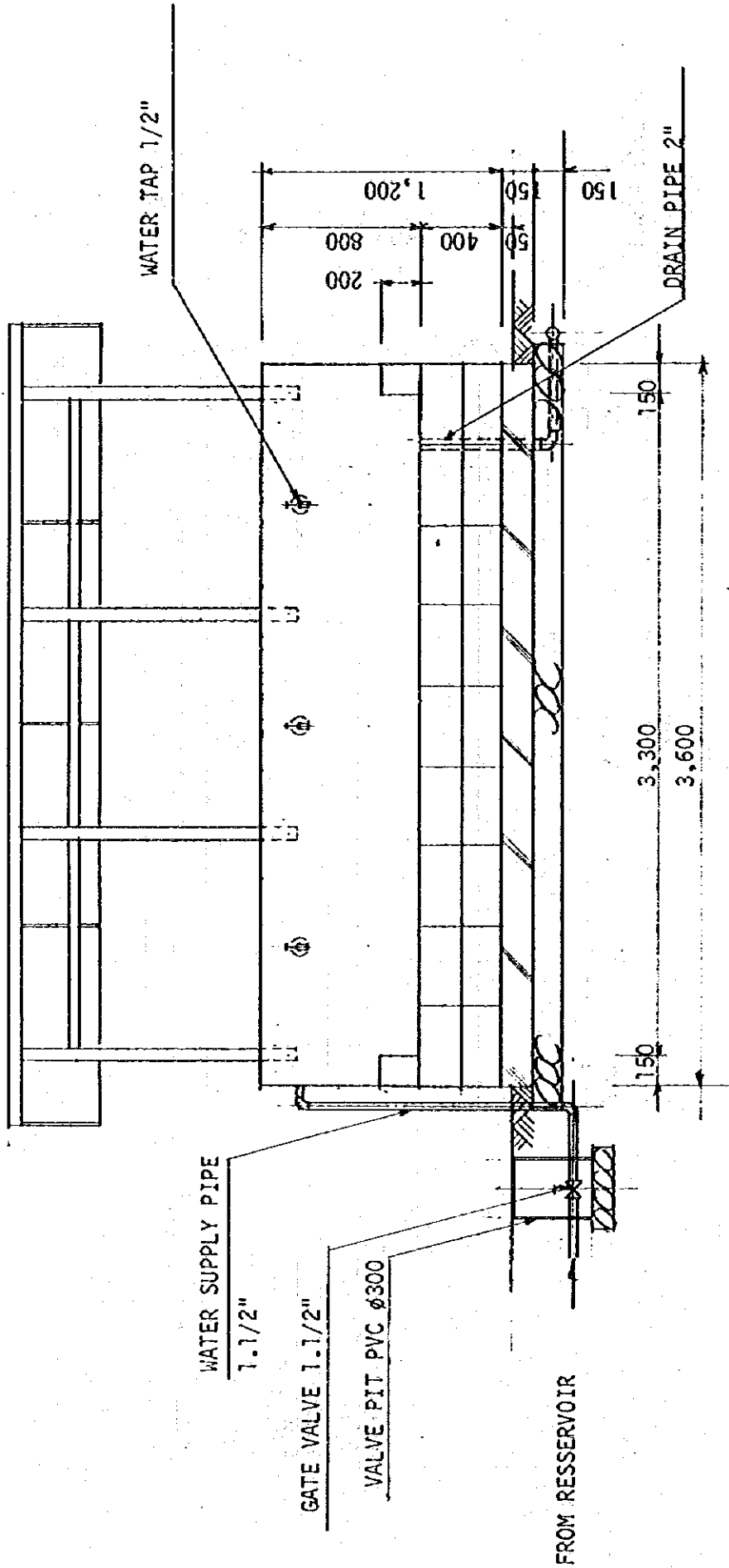
SCALE: 1 : 100

--- DRAWING NO. A - 03 ---

MODEL PLAN: A COMMUNAL WATER POINT



MODEL PLAN: A COMMUNAL WATER POINT

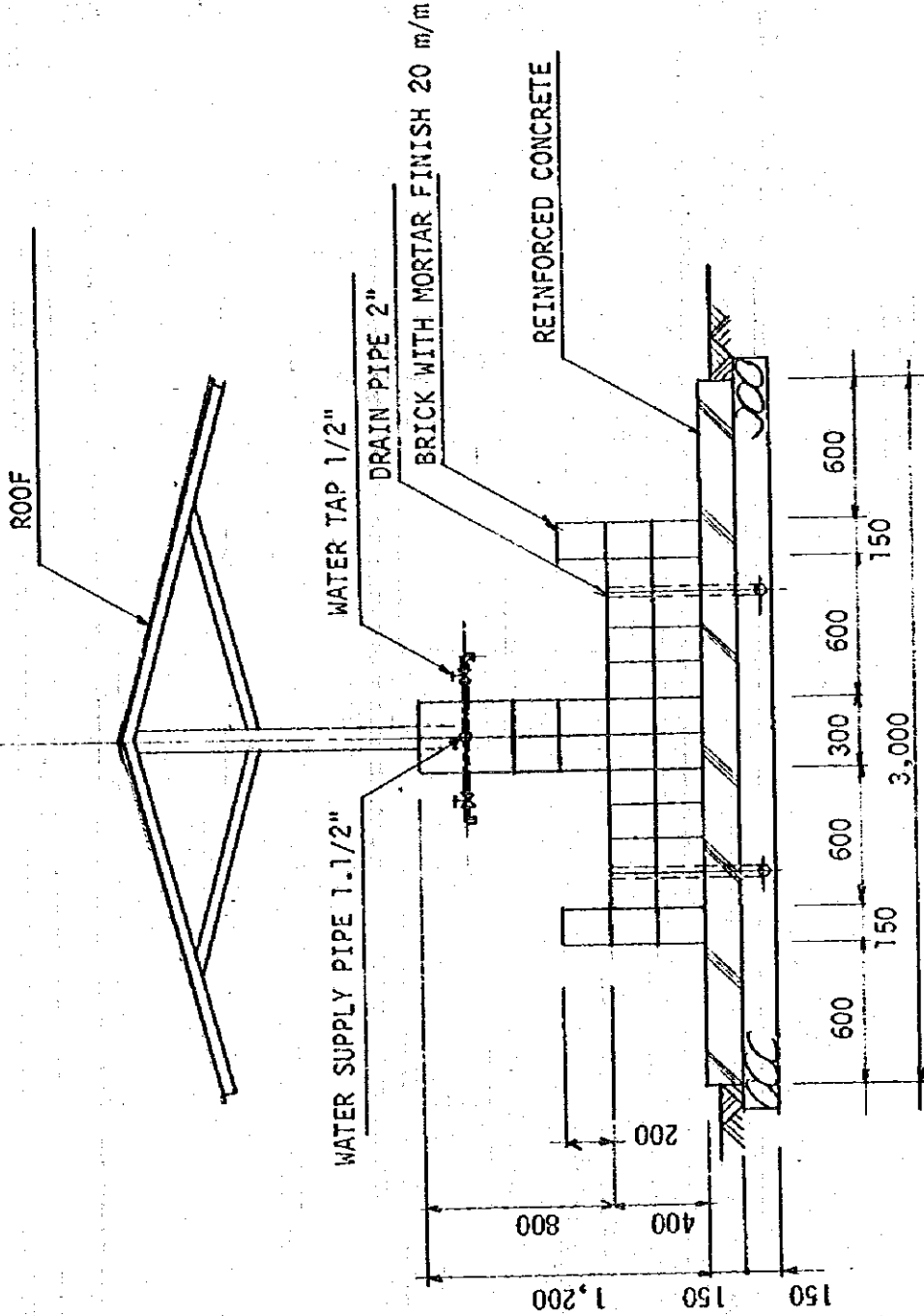


A-98

SECTION A - A SCALE: 1 : 30

--- DRAWING NO. A - 05 ---

MODEL PLAN: A COMMUNAL WATER POINT



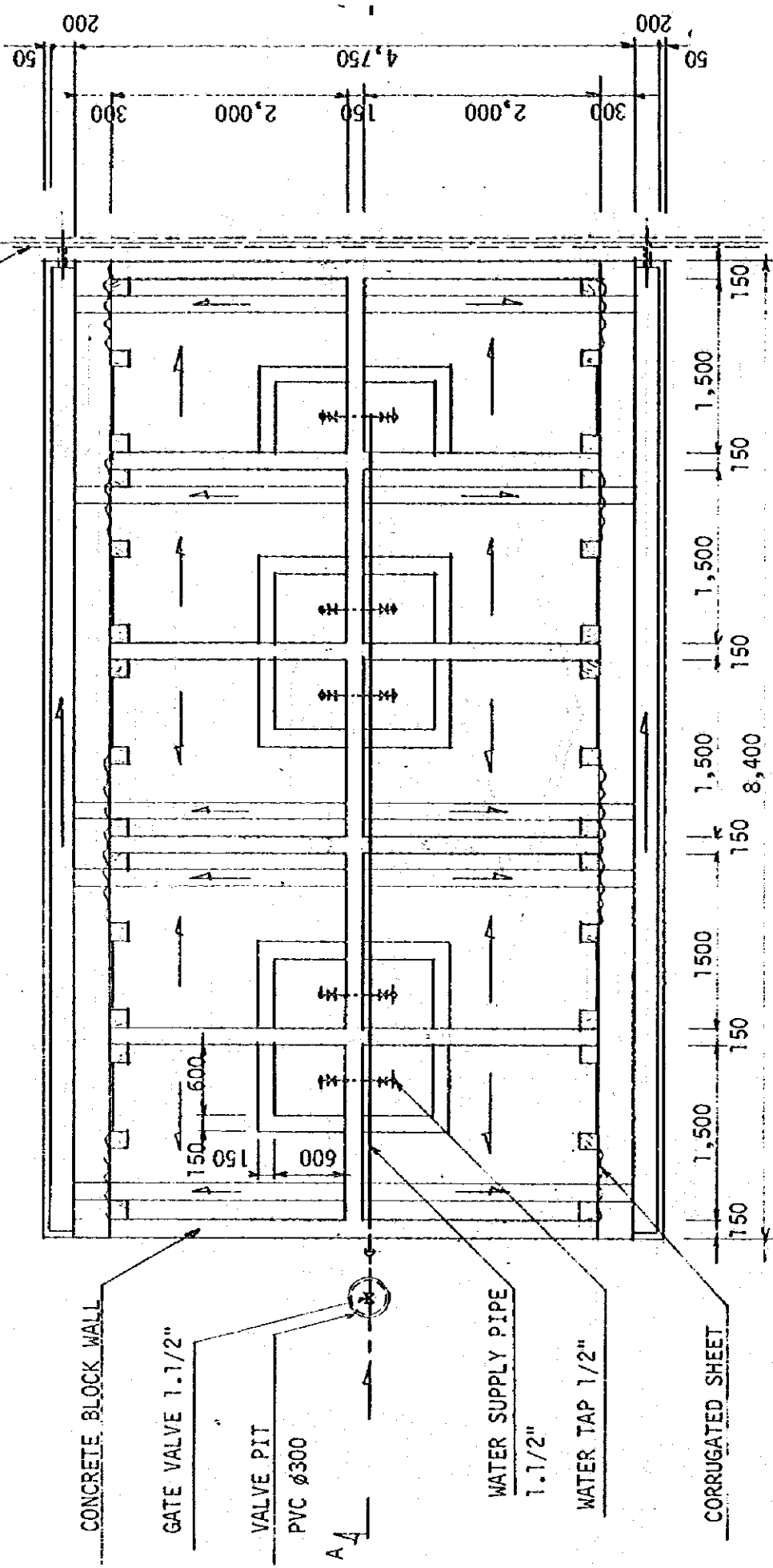
SECTION B - B SCALE: 1 : 30

--- DRAWING NO. A - 06 ---

MODEL PLAN: A BATHING FACILITIES

B

DRAIN PIPE 3"



CONCRETE BLOCK WALL

GATE VALVE 1.1/2"

VALVE PIT  
PVC ø300

A-A

WATER SUPPLY PIPE  
1.1/2"

WATER TAP 1/2"

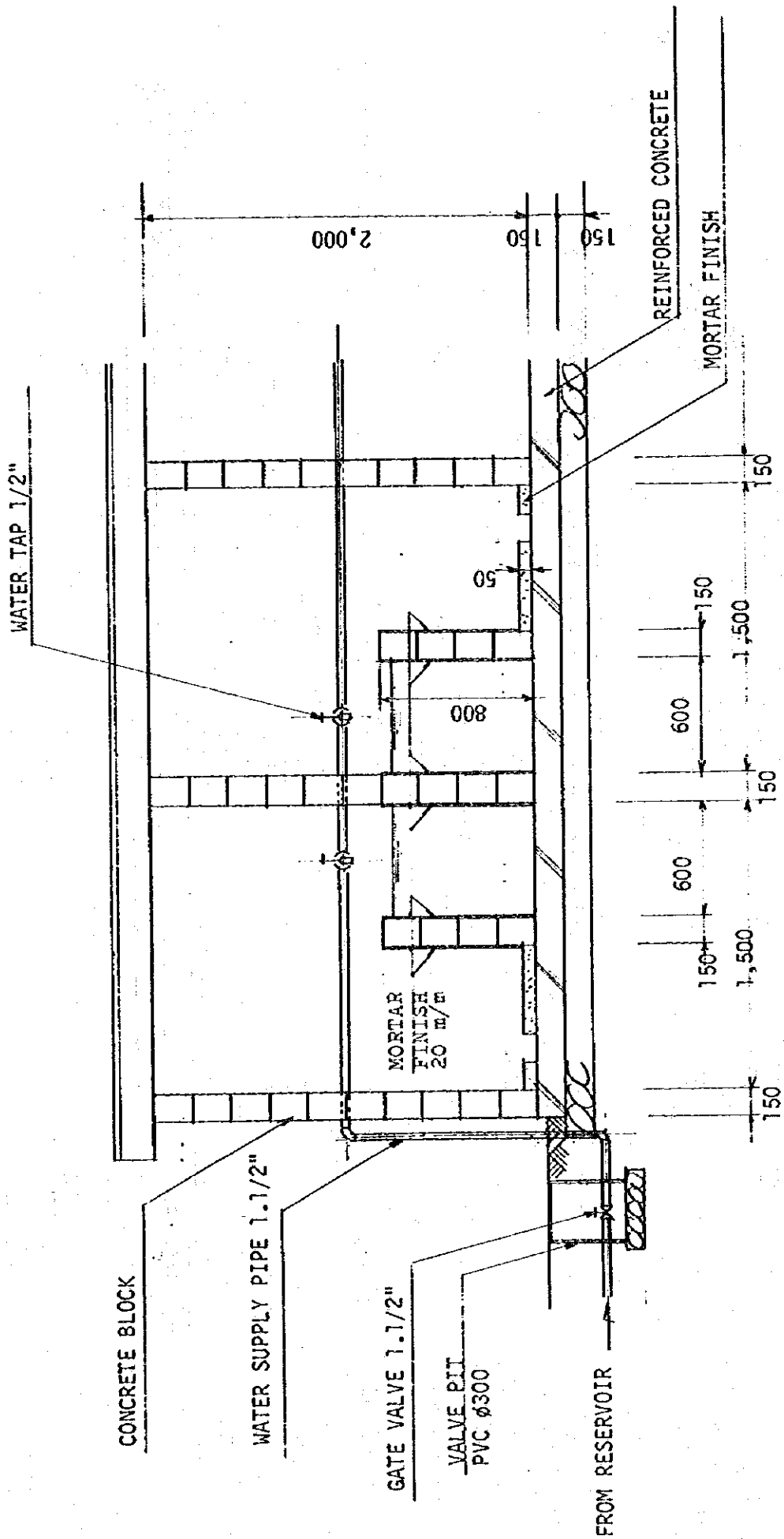
CORRUGATED SHEET

B

LAYOUT PLAN SCALE: 1 : 50

--- DRAWING NO. A - 07 ---

MODEL PLAN: A BATHING FACILITIES

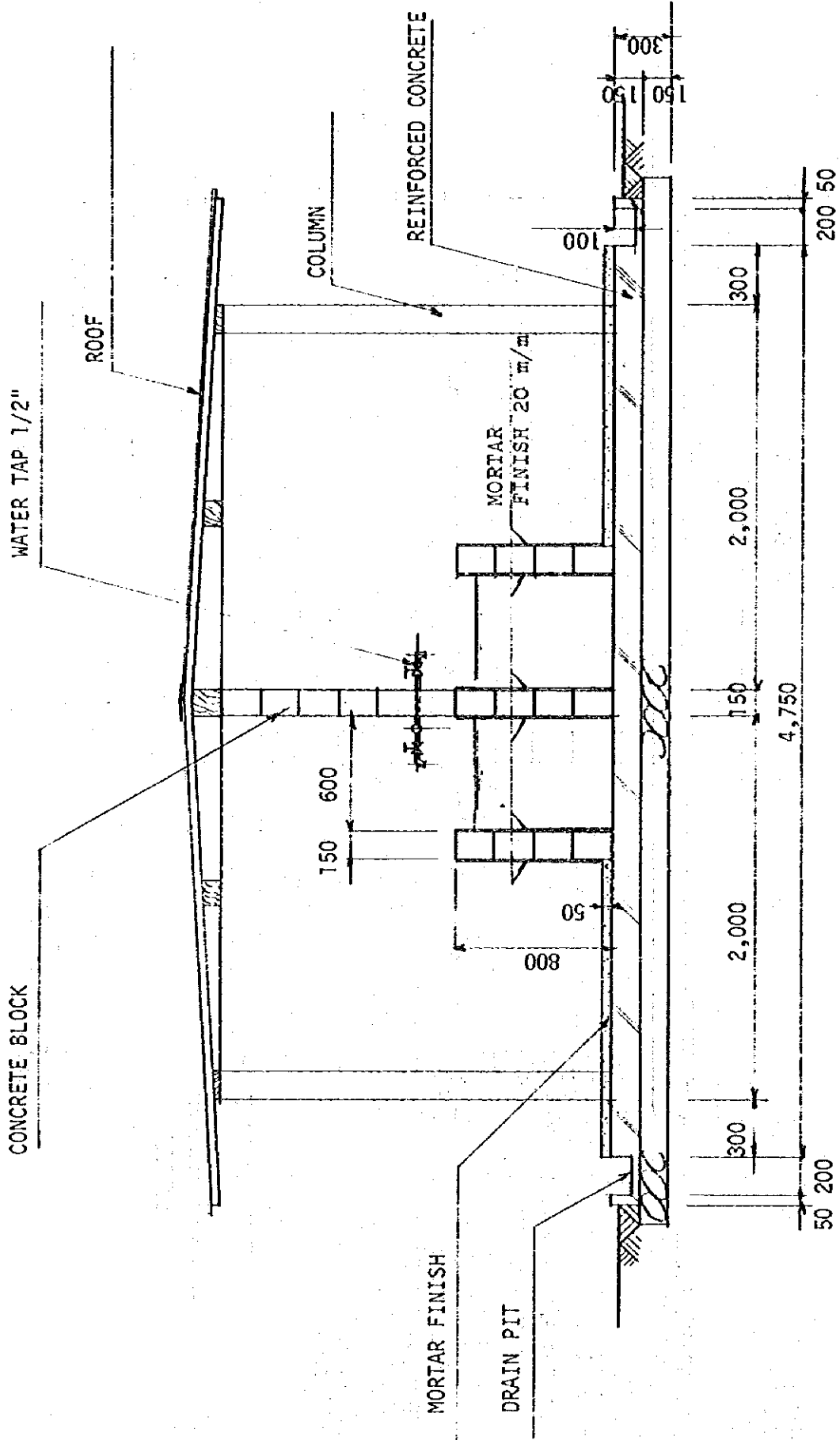


A-101

SECTION A - A SCALE: 1 : 30

--- DRAWING NO. A - 08 ---

MODEL PLAN: A BATHING FACILITIES

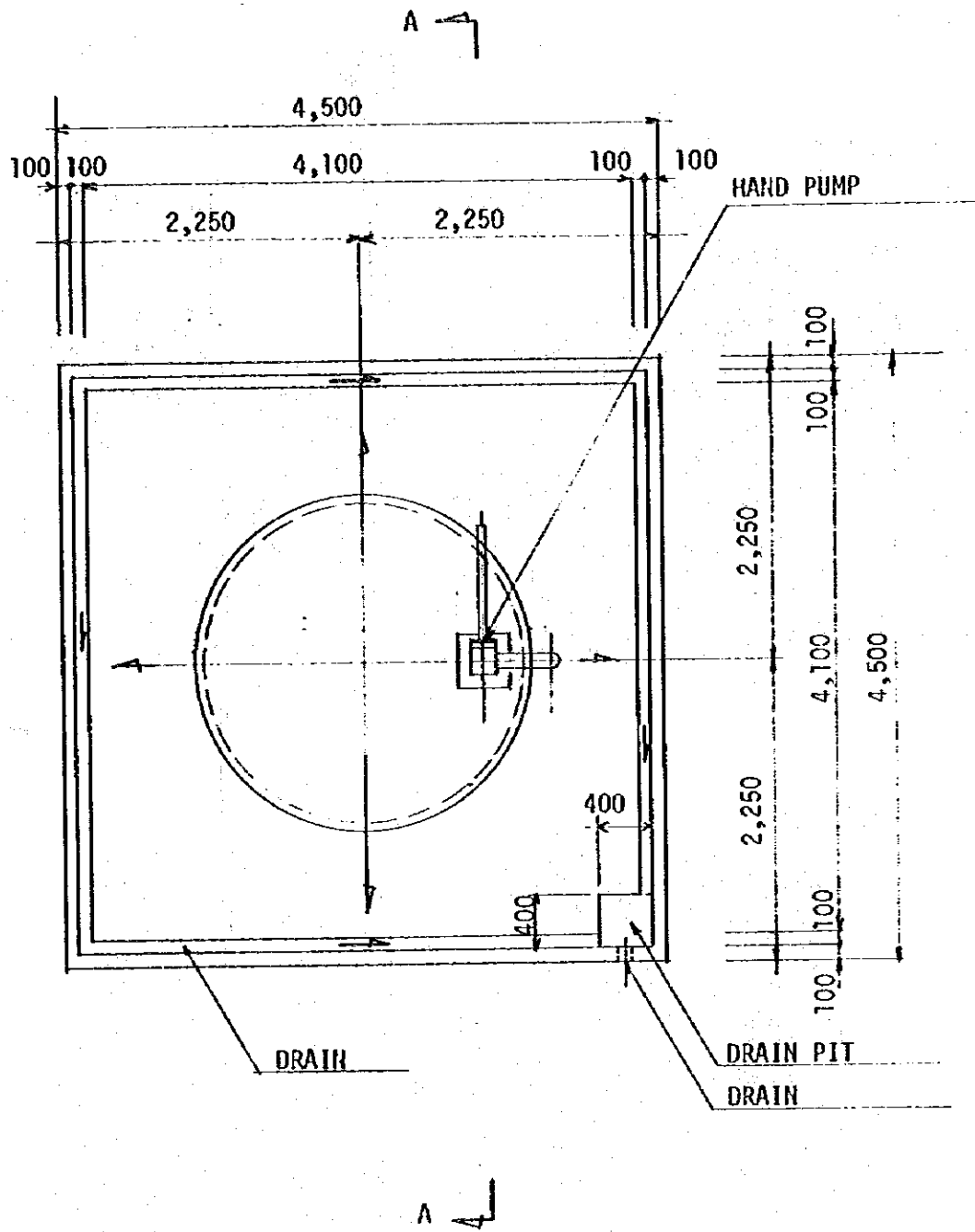


SECTION B - B SCALE: 1 : 30

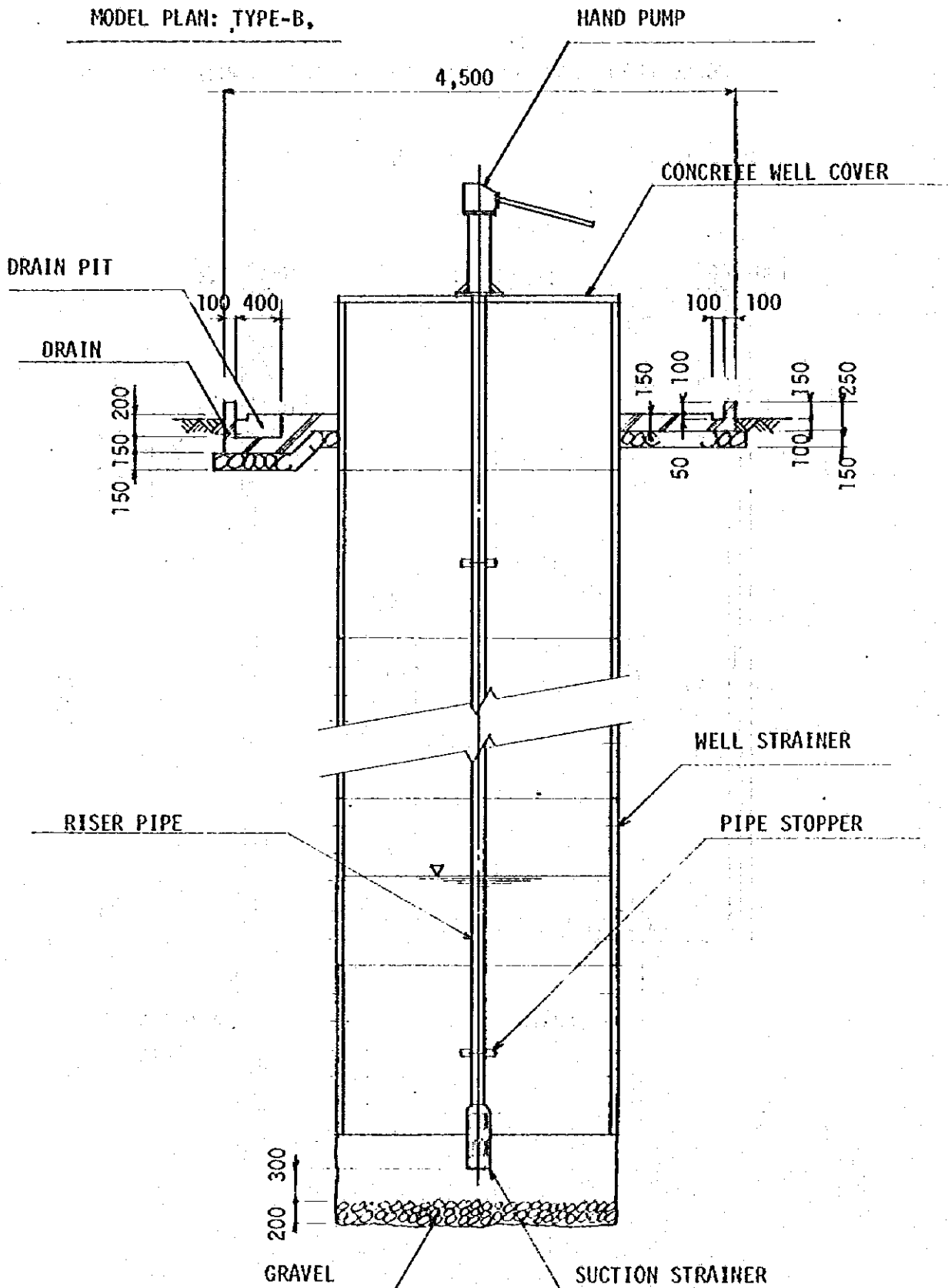
--- DRAWING NO. A - 09 ---



MODEL PLAN: TYPE-B SHALLOW WELL EQUIPED WITH HAND PUMP

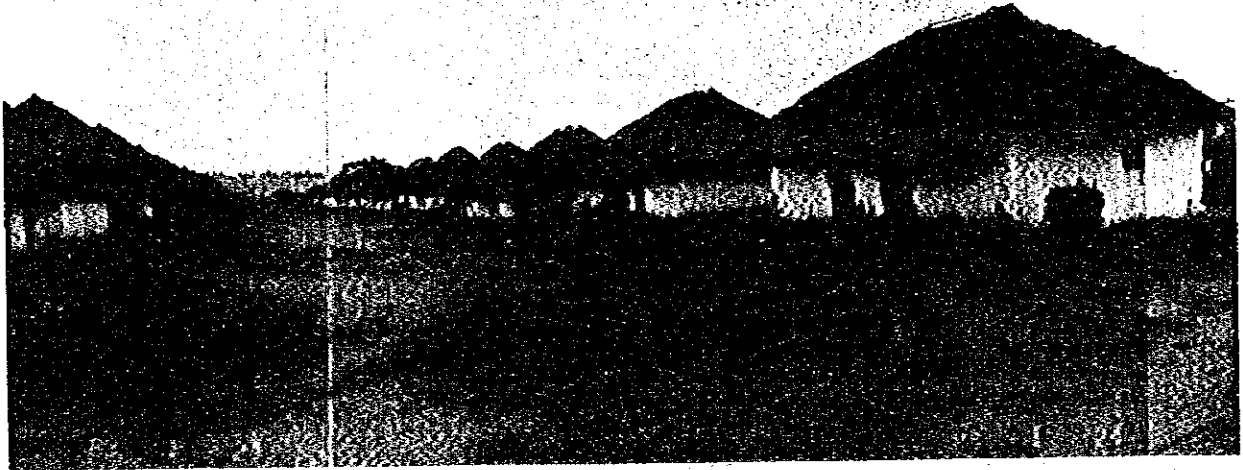


MODEL PLAN: B WELL HEAD LAYOUT PLAN --- DRAWING NO.B - 10  
SCALE: 1 : 50



MODEL PLAN: B SHALL WELL SECTIONAL VIEW --- DRAWING NO.B - 11  
 SCALE: 1 : 50

APPENDIX 13 PHOTOGRAPHS



View of BUIBUI Camp



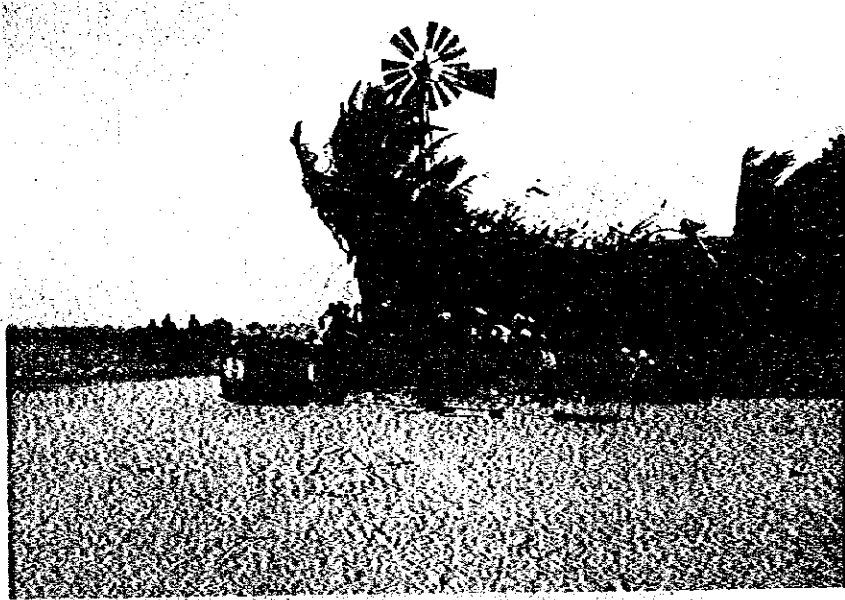
Spring of BUIBUI Camp



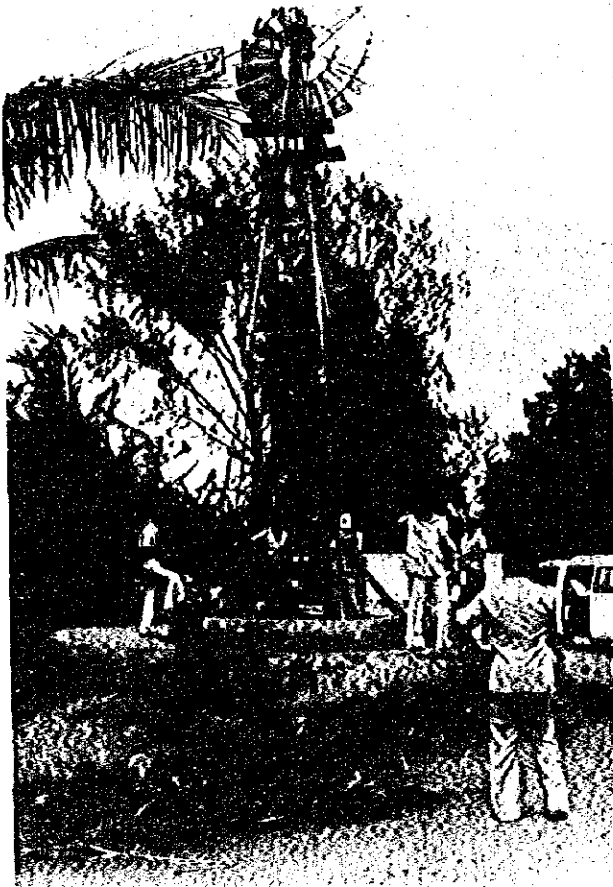
Taking Water from Spring



Another Spring in BUIBUI Camp



Well in FAHAMUNI Camp



Taking Water from the Well





View of KANANA Camp



Leveling the Well Water in KANANA Camp



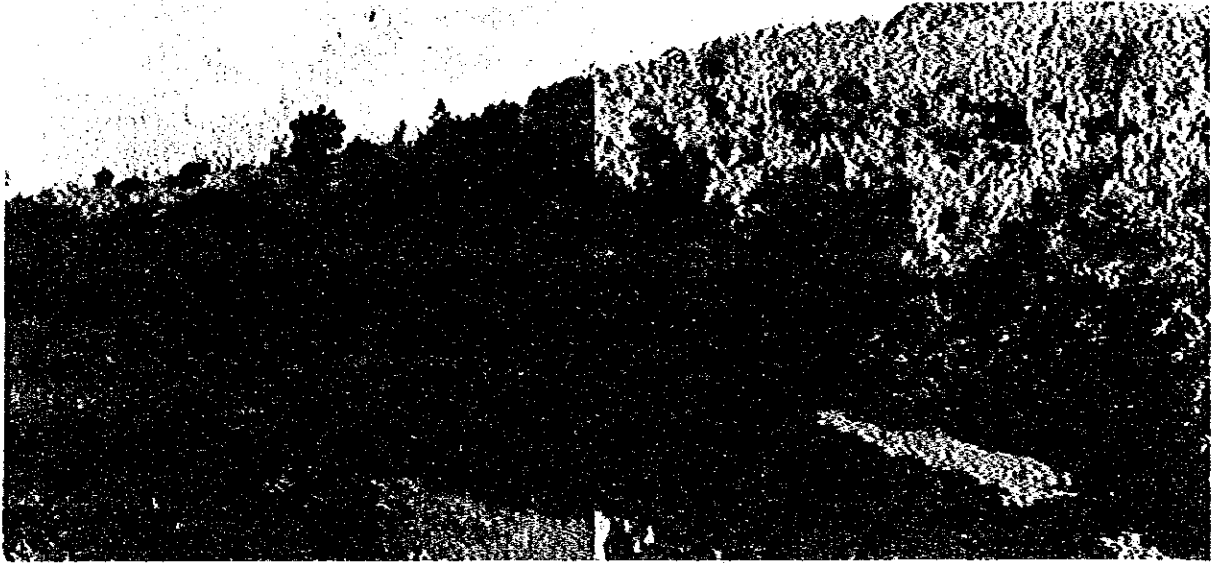
View of KIDIMU Camp



Spring in KIDIMU Camp



Well & Bathing Room in KIDIMU Camp



View of PEMBA River in MWACHINGA Village



Bathing in the River





Branch of the PEMBA River  
(Survey Point No. 23)



Snail which Miracidium Penetrates in

ELECTRICAL PROSPECTING SURVEY



Electrical Prospecting Survey in  
BUIBUI Camp



In FAHAMUNI Camp



In KANANA Camp



In KIDIMU Camp

PUMPING TEST



Pumping Test in FAHAMUNI Camp

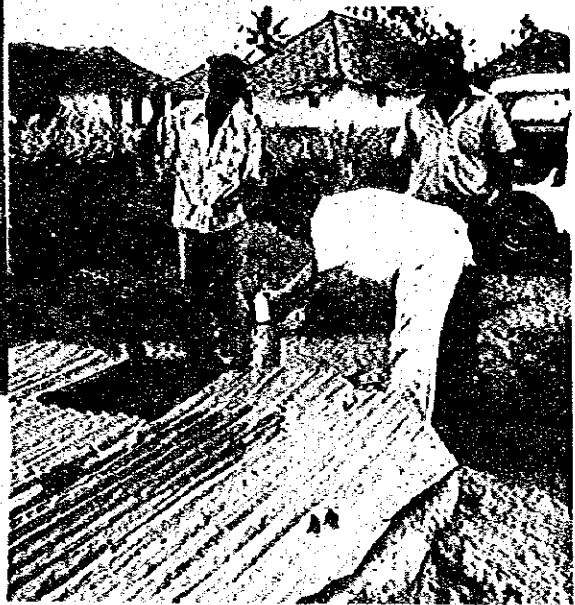


In KANANA Camp

WATER SAMPLING



FAHAMUNI Camp



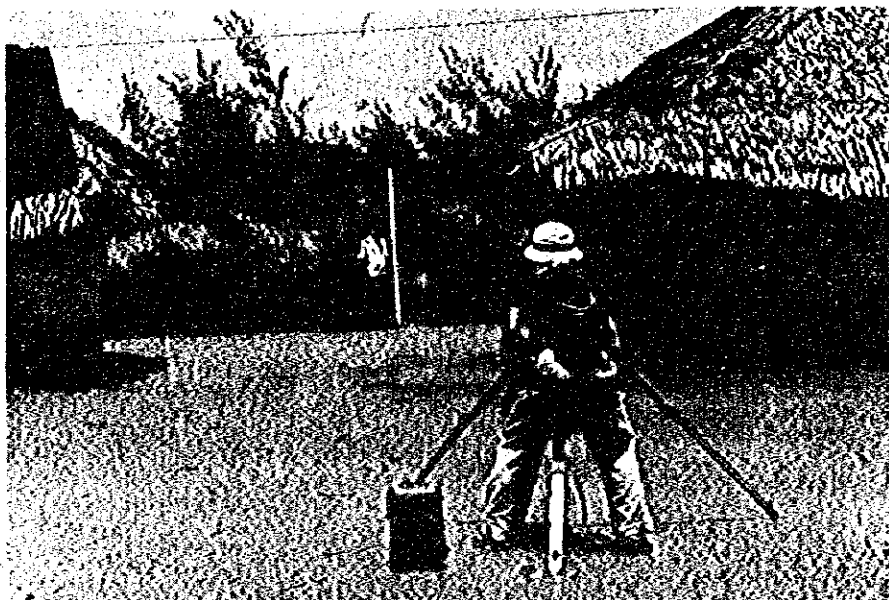
KANANA Camp



KIDIMU Camp

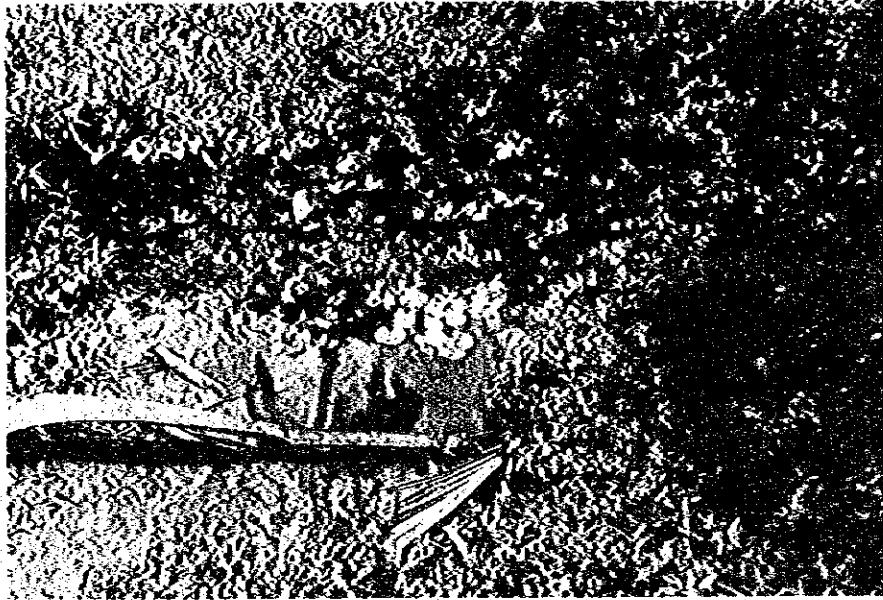


Toilet Room in FAHAMUNI Camp

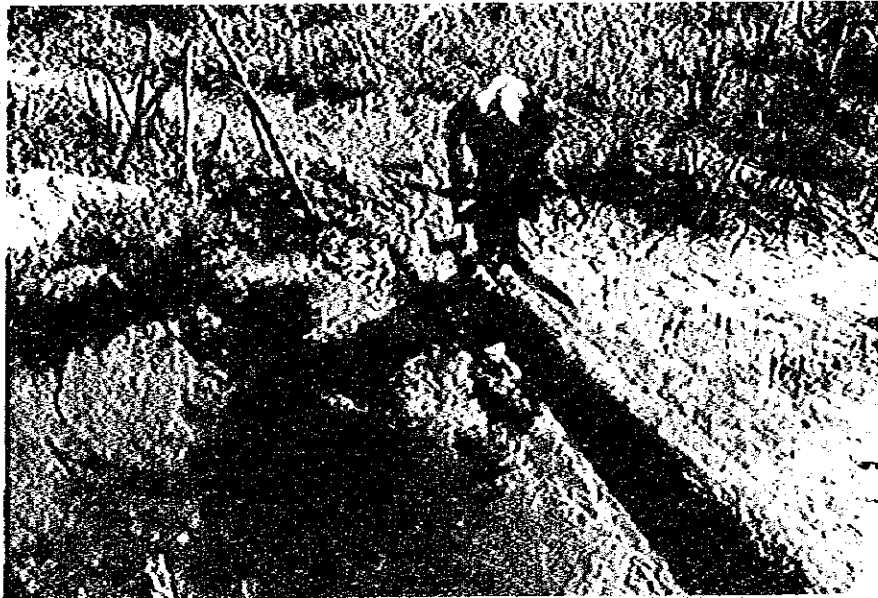


Field Survey in BUIBUI Camp

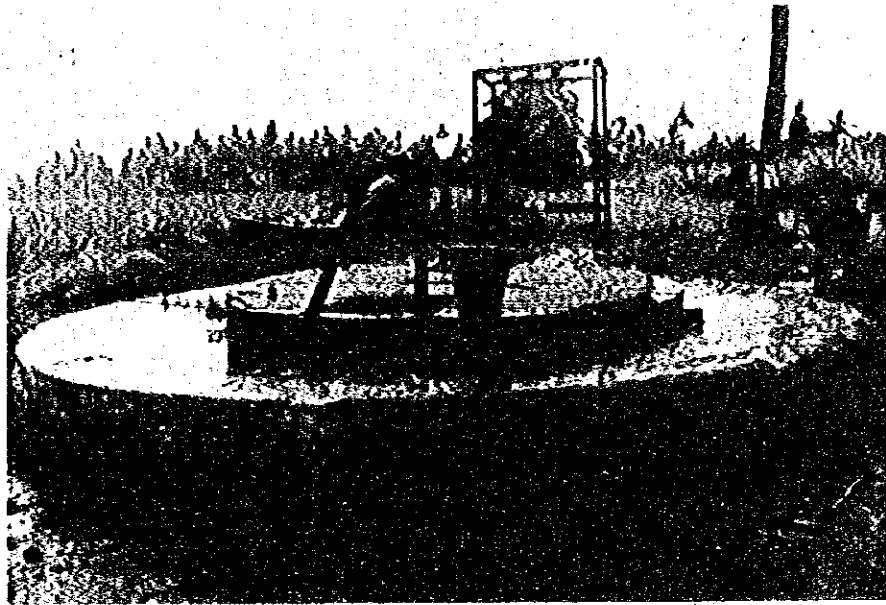
AROUND THE PROJECT AREA



Spring in KIDIMU Village



Taking Water



Well in KIWANBALE Camp



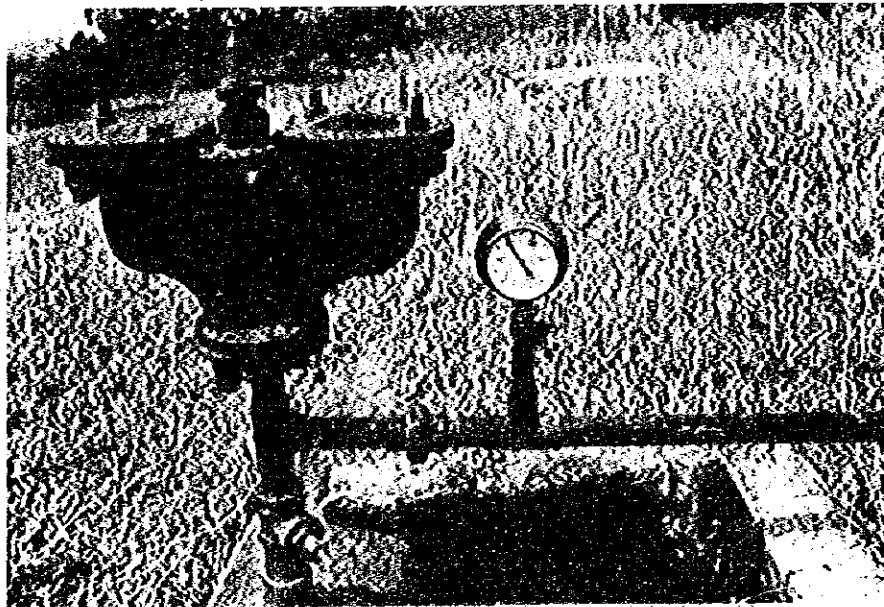
Taking Water from Well



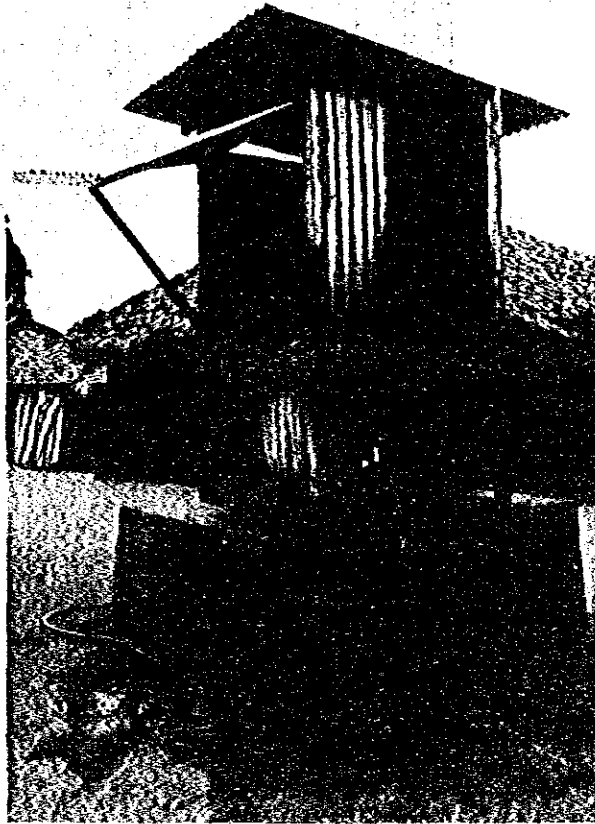
EXISTING FACILITY OF PIPE WATER



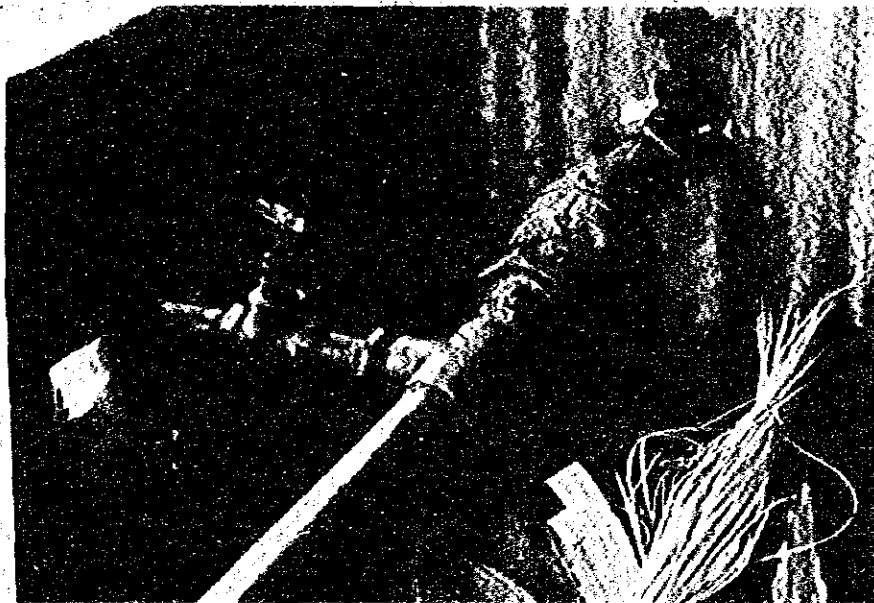
Tap in MWACHINGA Village



Abstruction from Main Pipe



Kiosk in MSAMBENI









JICA