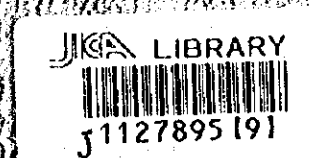


THE STUDY  
ON  
ELEVEN CENTERS WATER SUPPLY AND SANITATION  
IN  
FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

DRAWINGS  
DEJEN

(Volume IV-XI)



FEBRUARY, 1996

SANYU CONSULTANTS INC.  
KYOWA ENGINEERING CONSULTANTS CO., LTD.







GOVERNMENT OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)  
FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA  
MINISTRY OF WATER RESOURCES

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ON  
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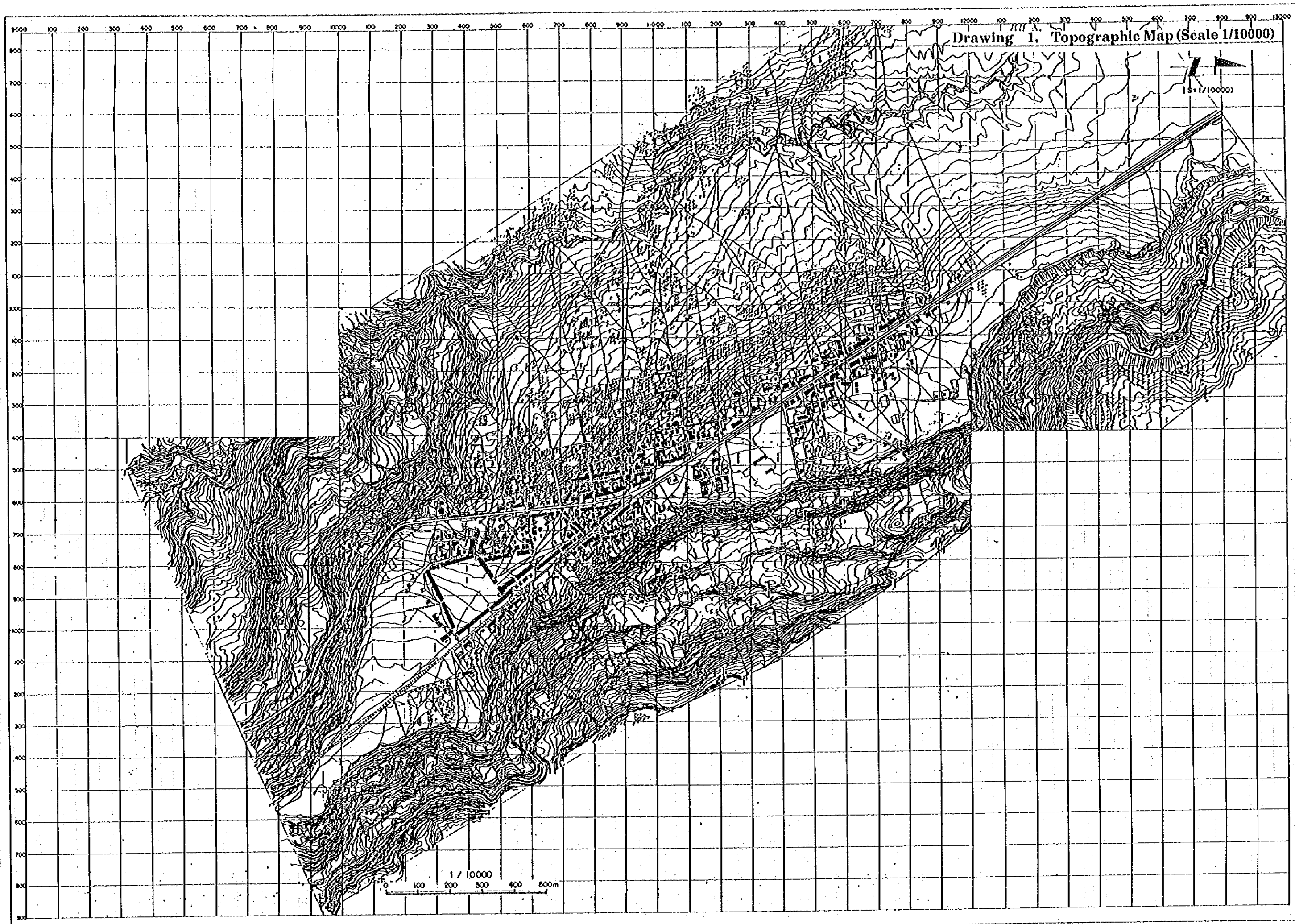
SANYU CONSULTANTS INC.  
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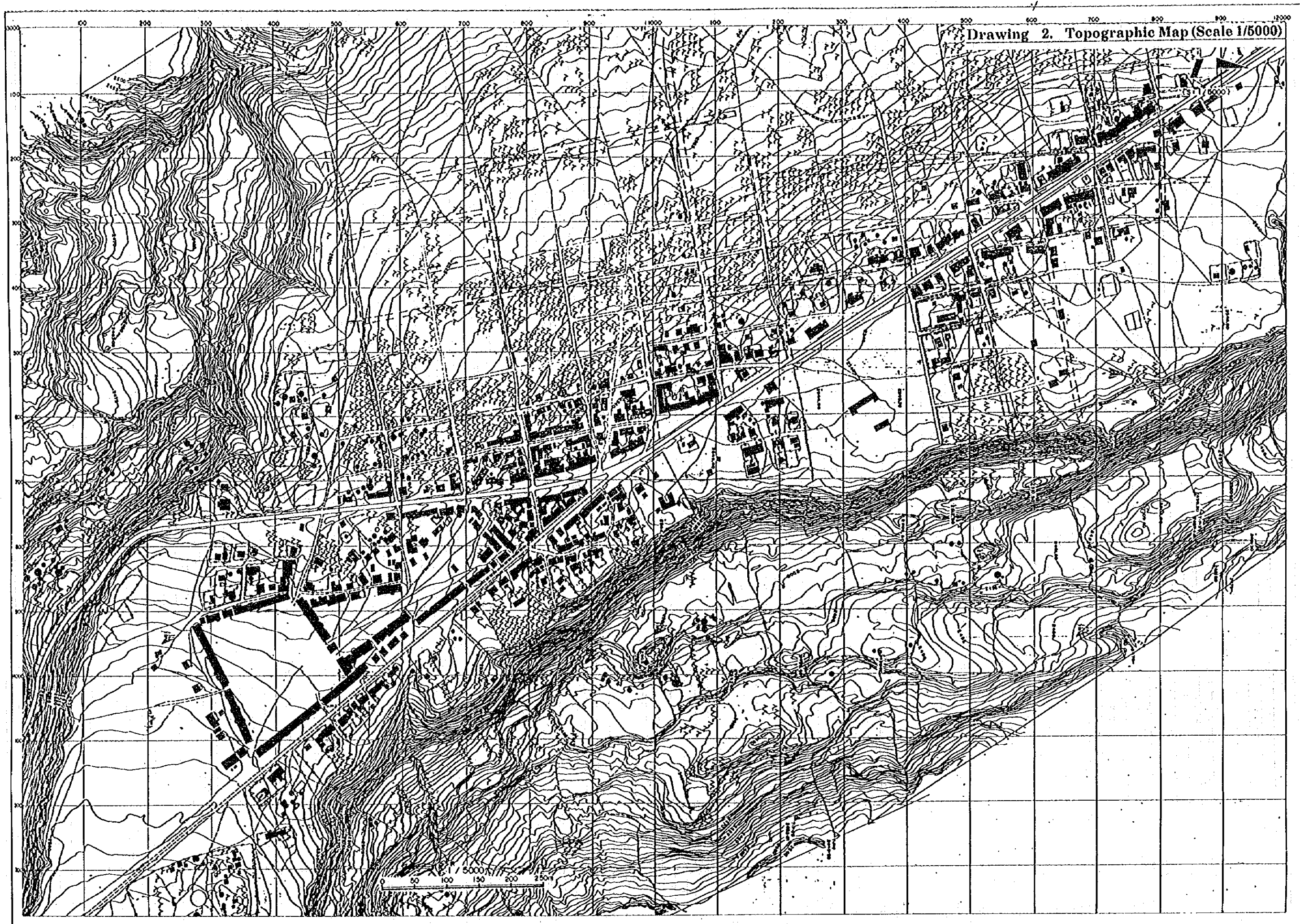


Drawing 1. Topographic Map (Scale 1/10000)

1:10000

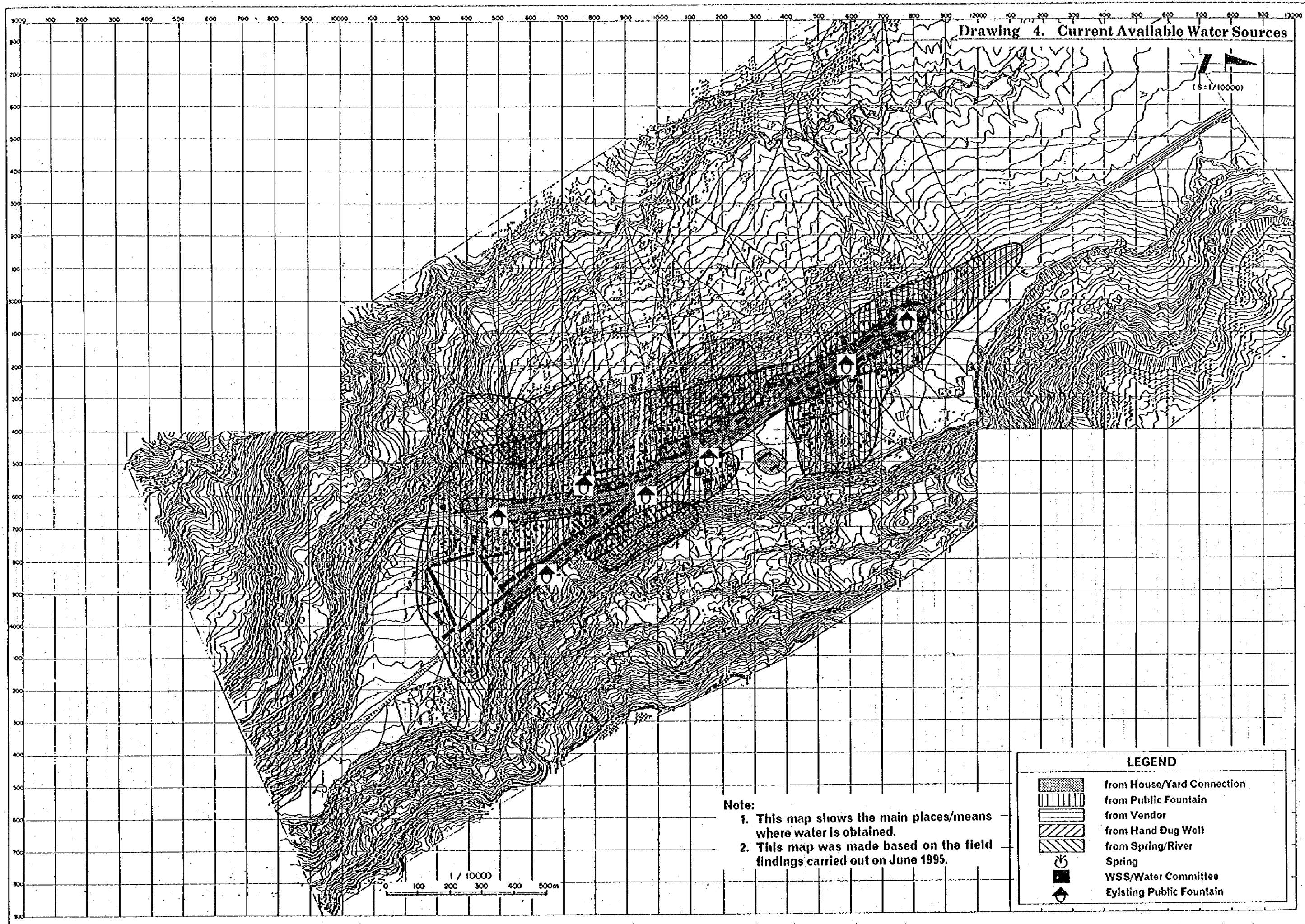
1 / 10000  
0 100 200 300 400 500 600m



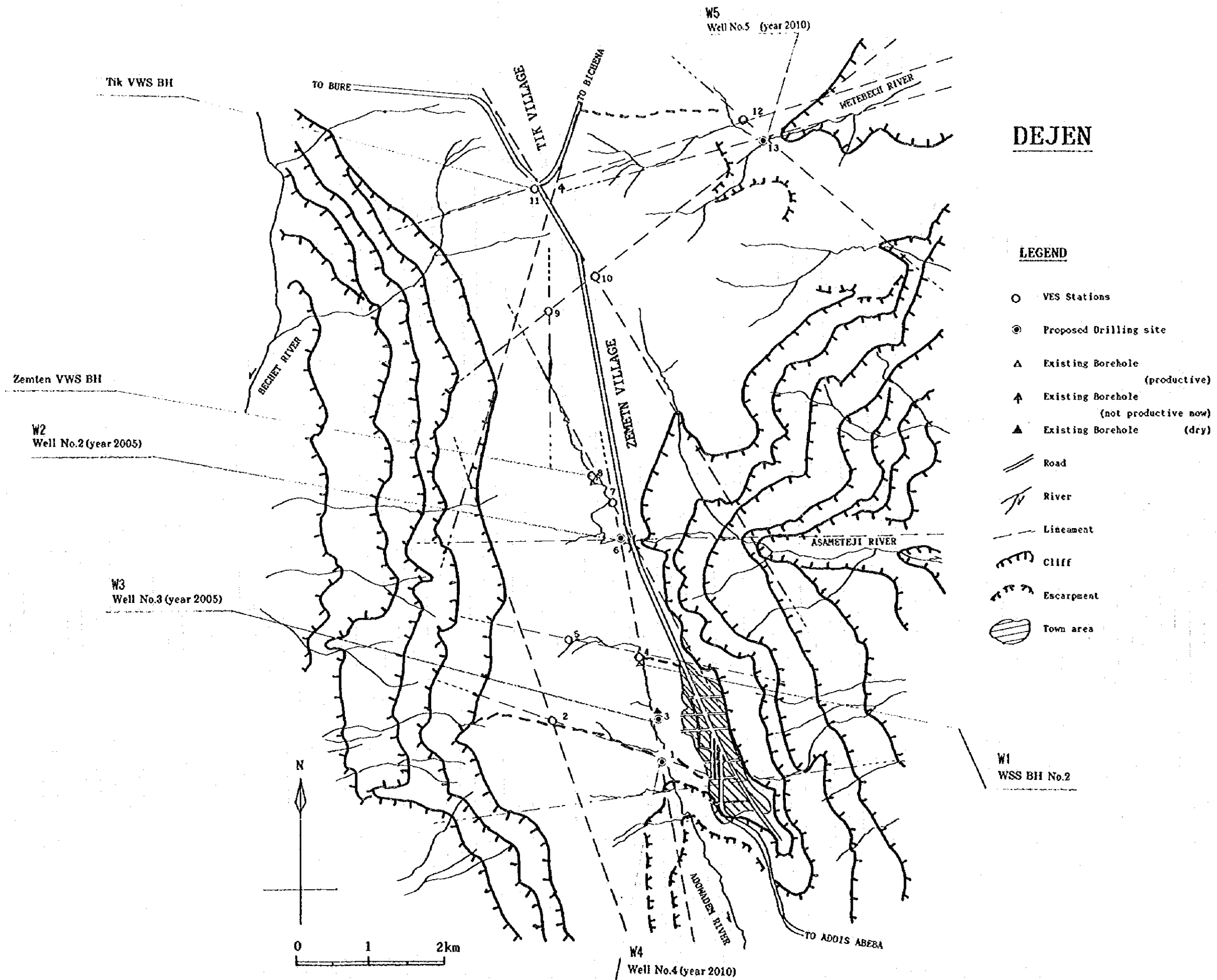




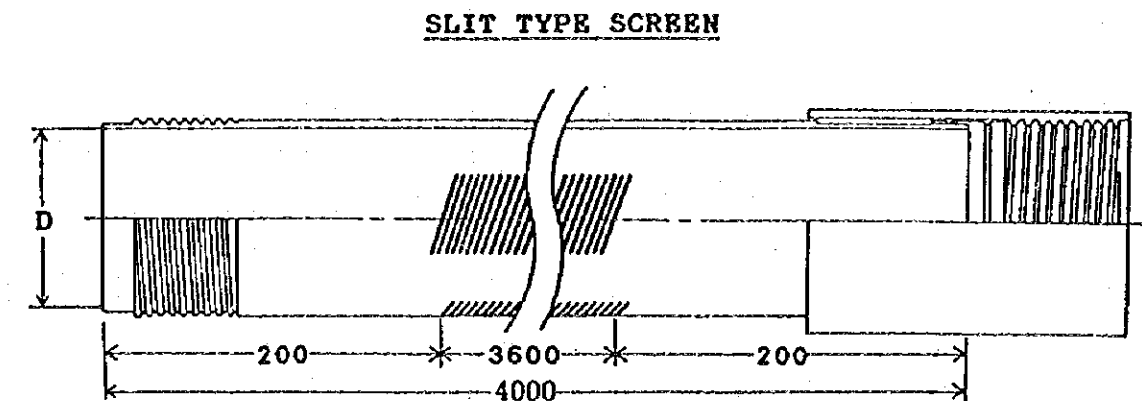
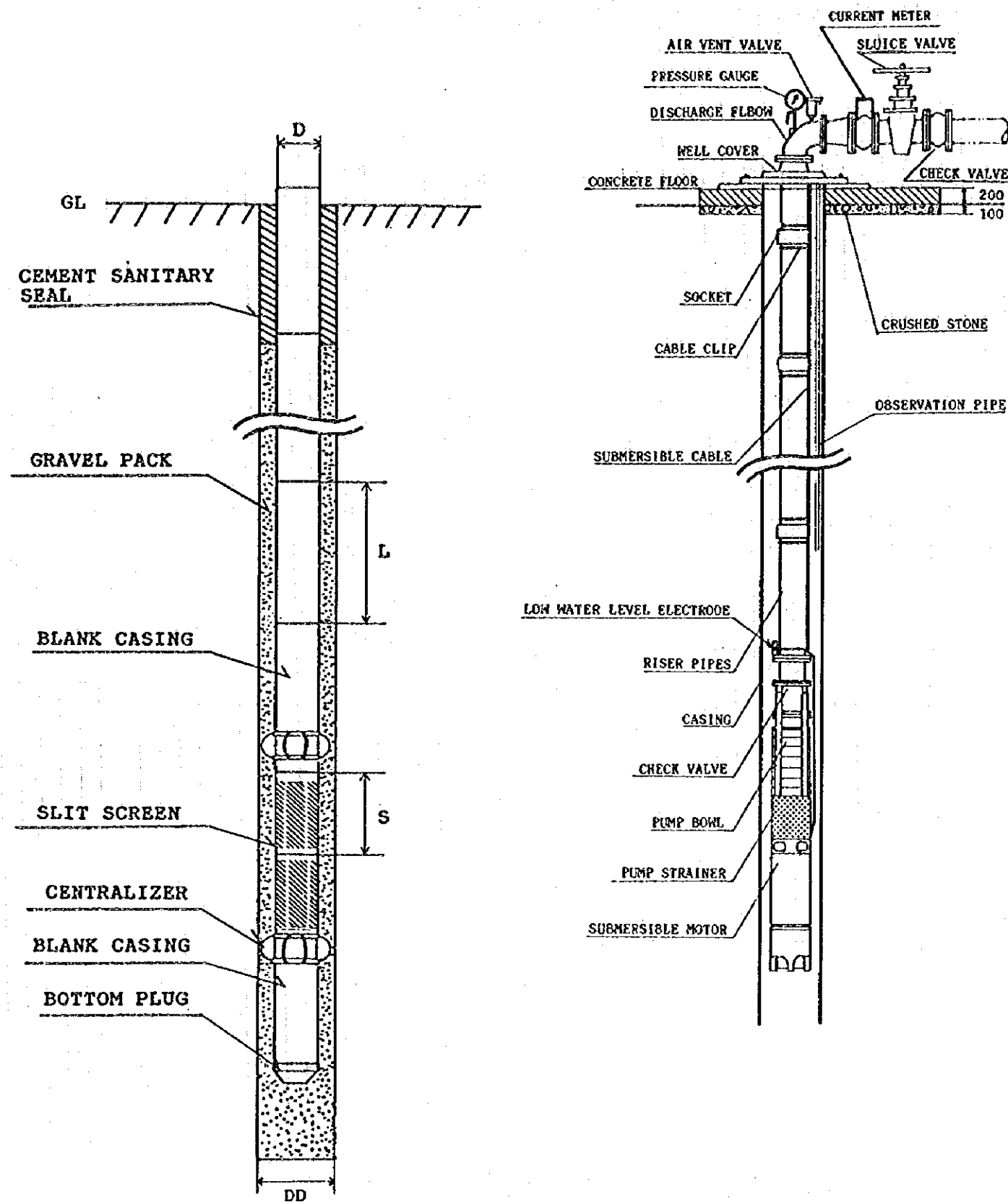




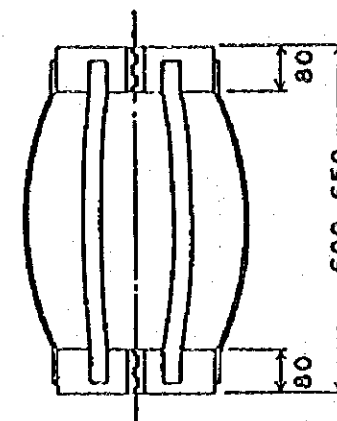
Drawing 5. Plan of Proposed Water Sources



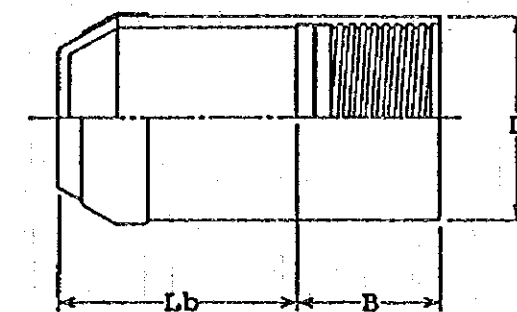
**Drawing 6. Layout of Proposed Deep Well**



**CENTRALIZER**



**BOTTOM PLUG**



**Dimension**

(Unit:mm)

Inner Diameter	Drilling Diameter	Blank Pipe	Diagonal Slit Screen	Bottom Plug
D	DD	L	S	Lb B
150	250	6,000	4,000	Approx 12%
200	300			
				160 110

**Material**

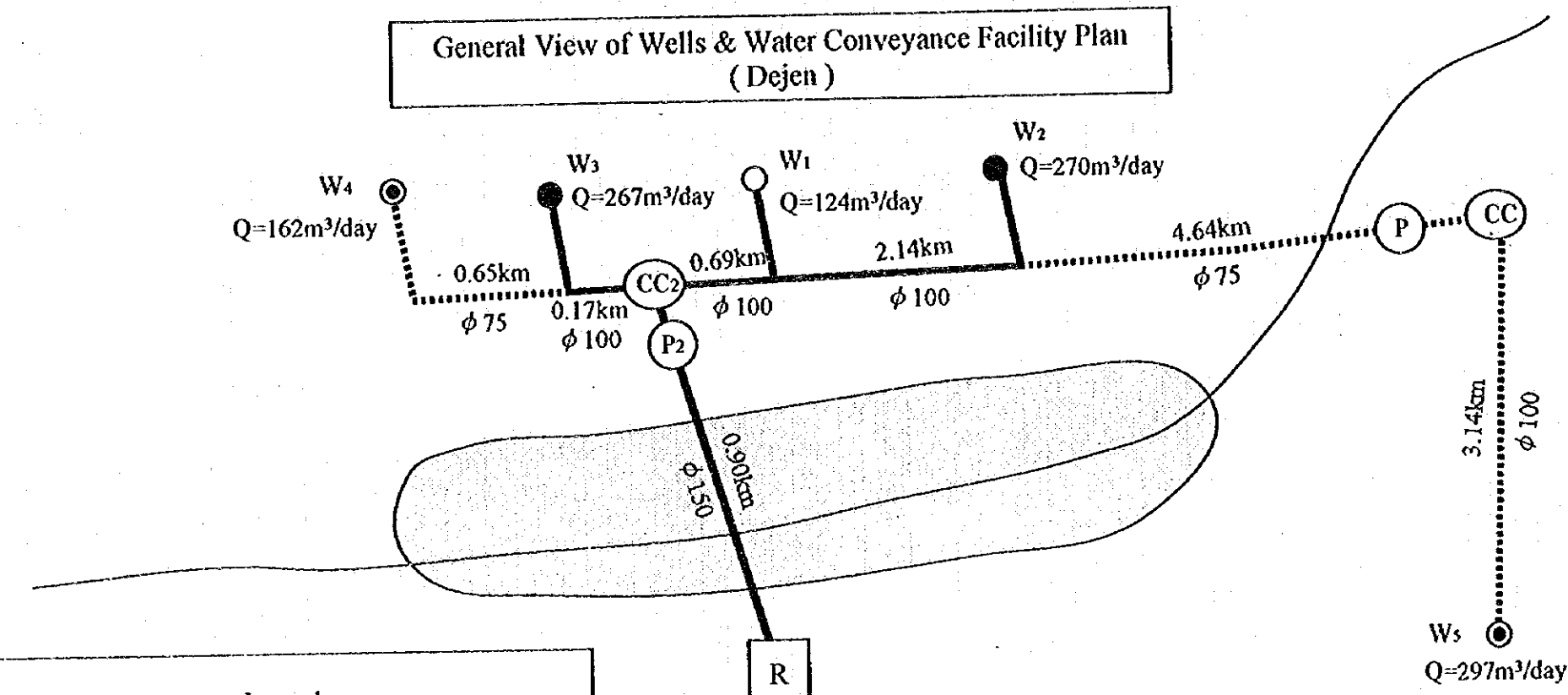
BLANK PIPE : FRP  
SCREEN : FRP  
BOTTOM PLUG : FRP

**Drawing 7. Layout Between Water Sources and Reservoir**

Total Water Demand in Target Years (m <sup>3</sup> /day)				
	1995*	2000	2005	2010
Domestic	89	251	380	588
Non Domestic	26	76	99	125
Losses	16	36	65	126
<b>Total</b>	<b>131</b>	<b>363</b>	<b>545</b>	<b>839</b>

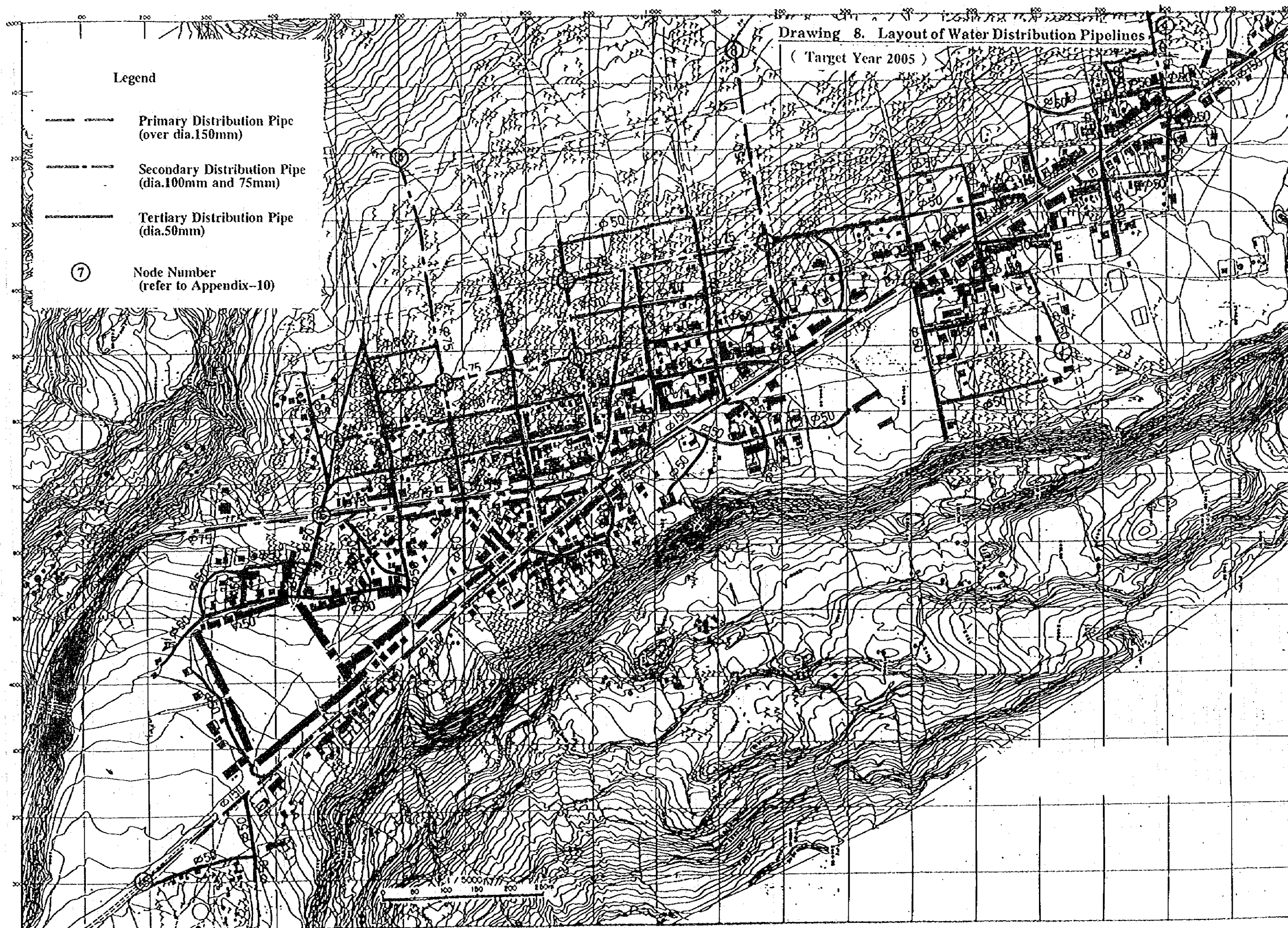
\*Actual consumption

**General View of Wells & Water Conveyance Facility Plan  
( Dejen )**

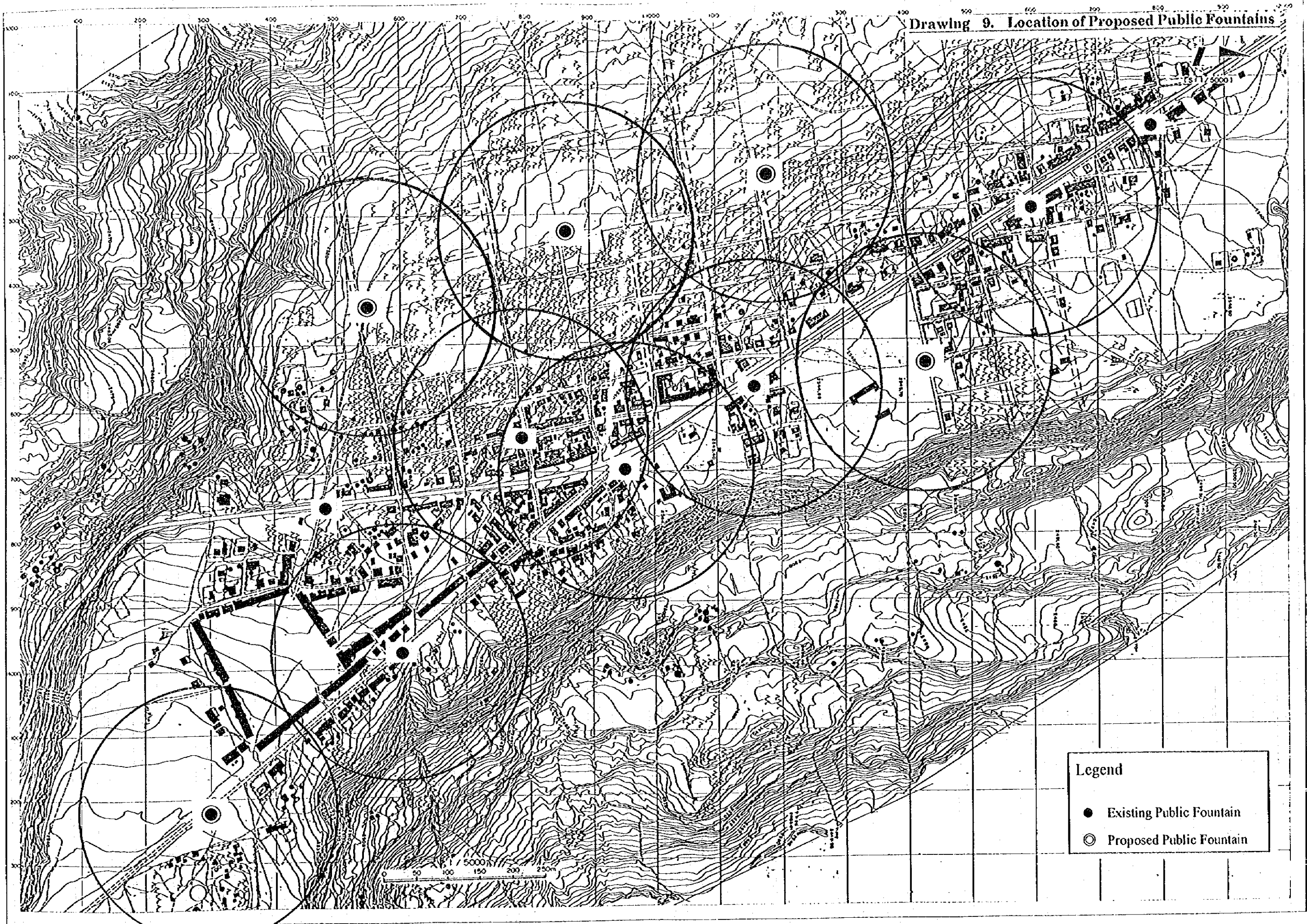


Legend	
○	Water Supply Area
○	Existing Well
●	Proposed Well (in 2005)
⊙	Proposed Well (in 2010)
R	Reservoir Tank
P	Pump Station
Q	Water Supply Quantity of each well (m <sup>3</sup> /day)
0.60km	Piping & Pipe extension





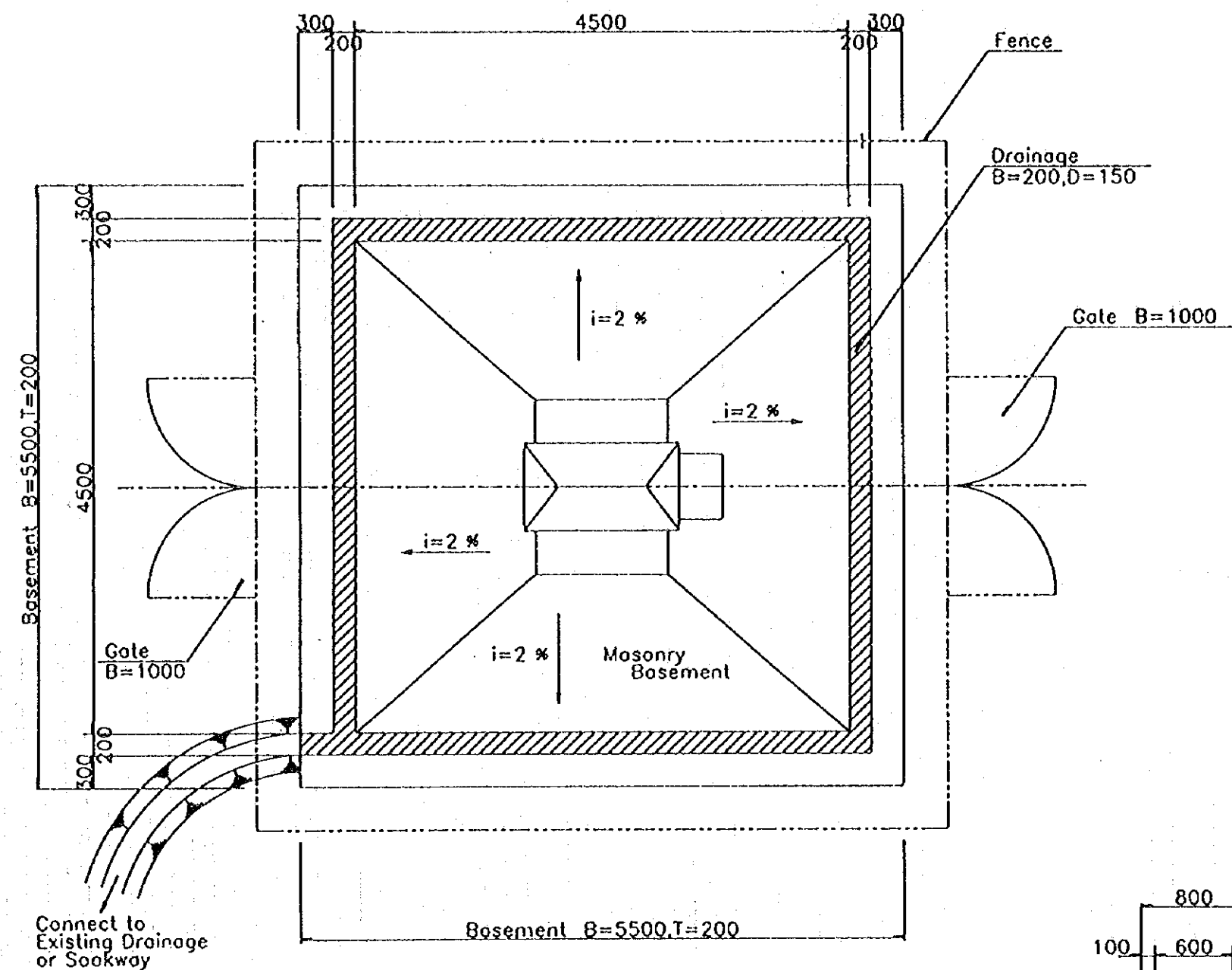
Drawing 9. Location of Proposed Public Fountains



Legend

- Existing Public Fountain
- ⊙ Proposed Public Fountain



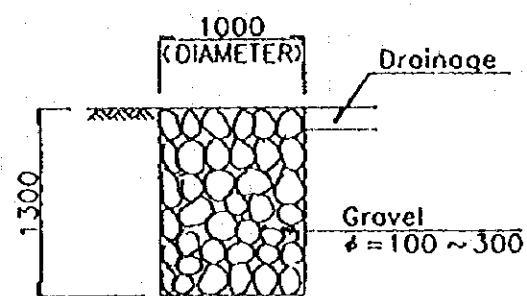


GENERAL PLAN

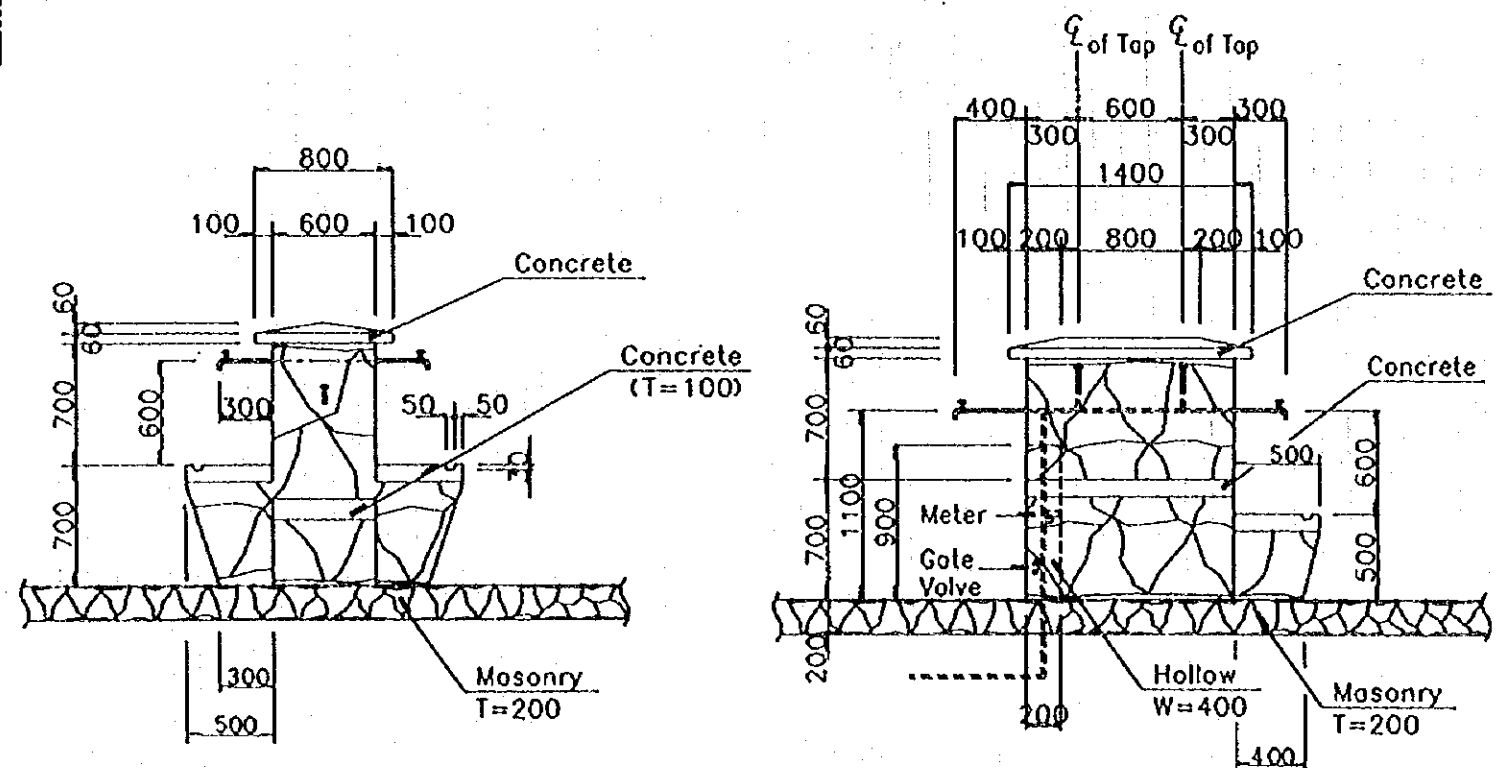
Quantity:

Concrete	: 0.25 m <sup>3</sup>
Form-work	: 0.66 m <sup>2</sup>
Masonry	: 7.08 m <sup>3</sup>
Fence	: 2 m X 20.4 m
Pipe	: 6 m
Tap	: 6 NOS
Meter	: 1 NOS
Valve	: 1 NOS
Excavation	: 13 m <sup>3</sup>
Gravel	: 1 m <sup>3</sup>

NOTE:  
1. All dimensions are shown in millimeter.



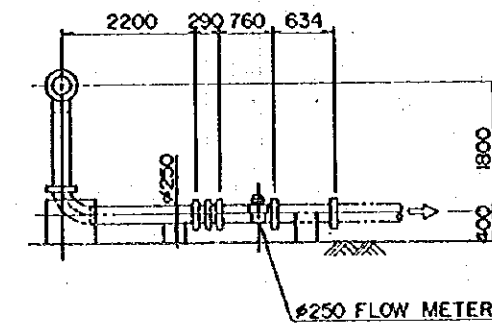
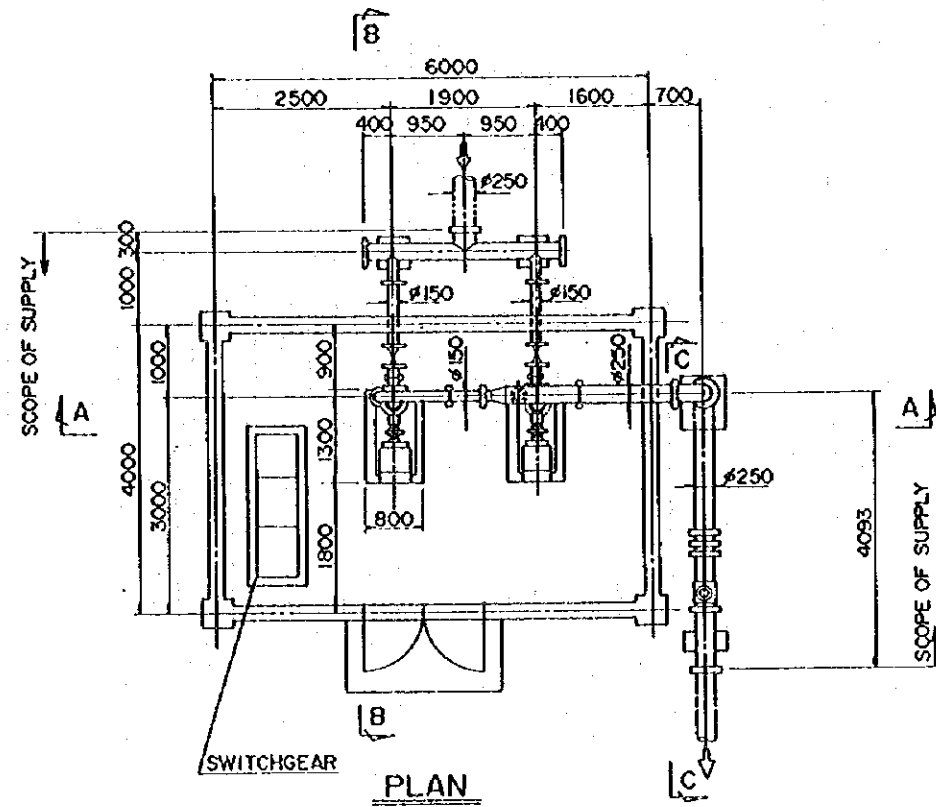
SOAKWAY



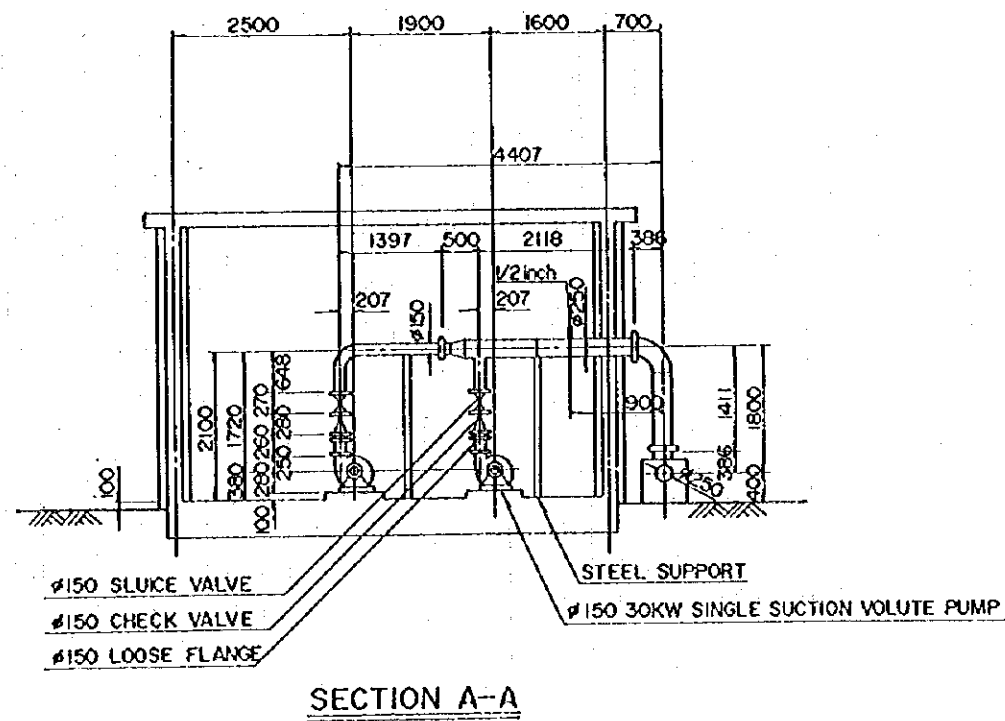
VIEW A

VIEW B

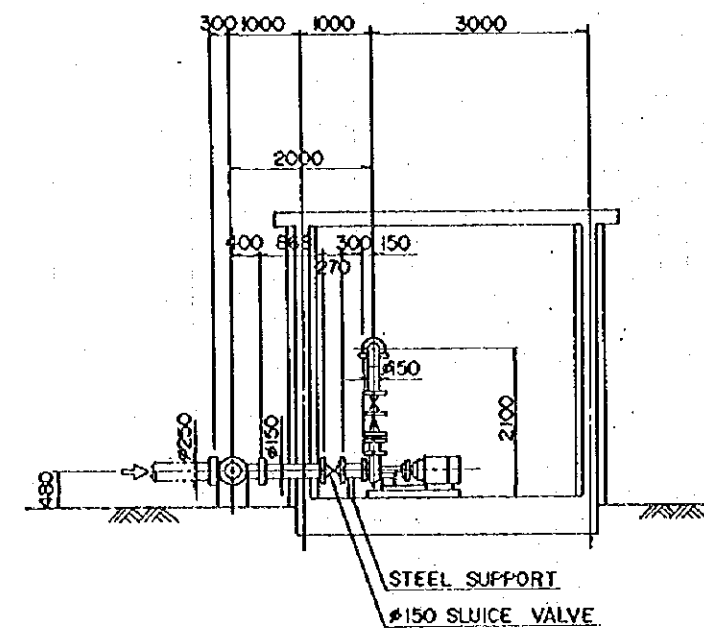
PLAN OF PUBLIC FOUNTAIN



SECTION C-C

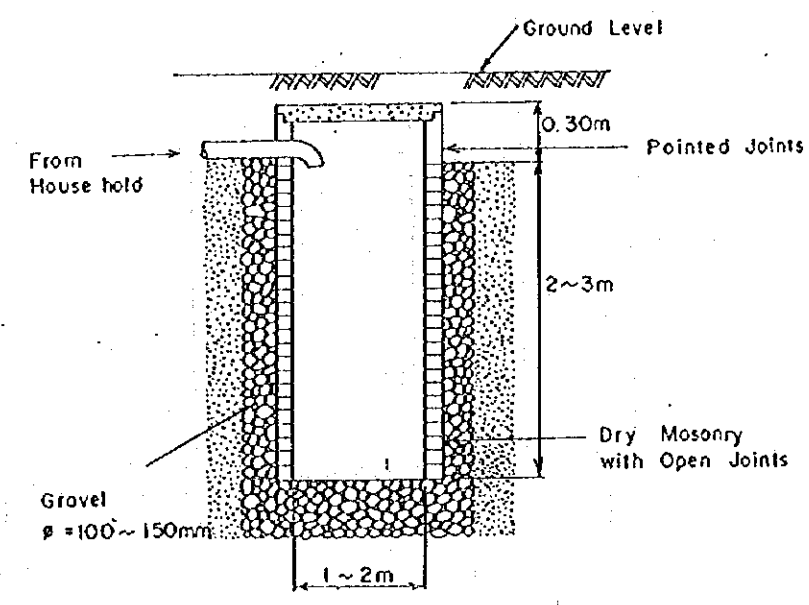


SECTION A-A

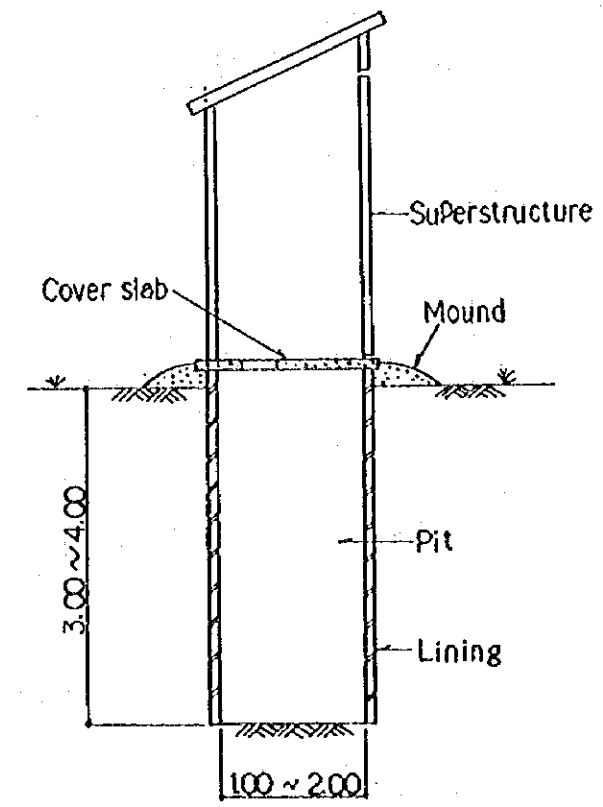


SECTION B-B

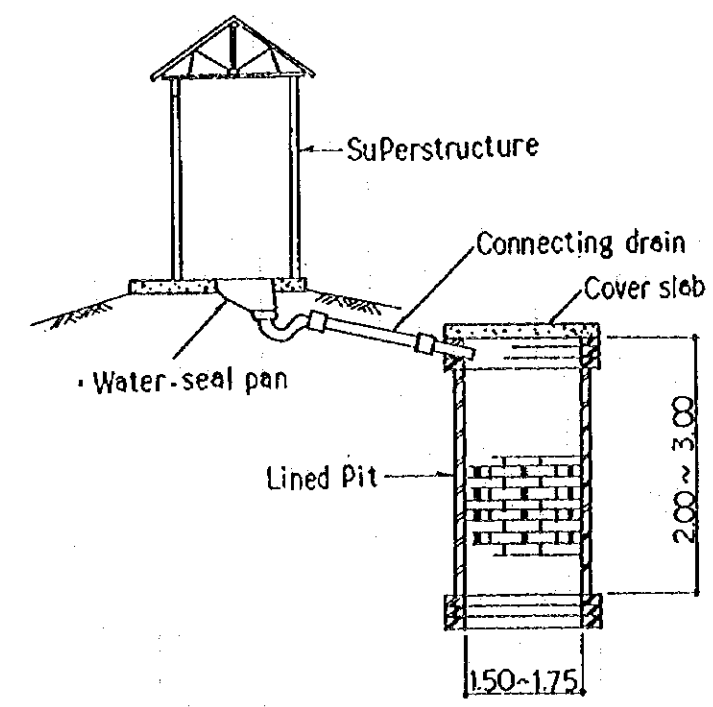
NOTE : unit is millimeter unless otherwise specified.



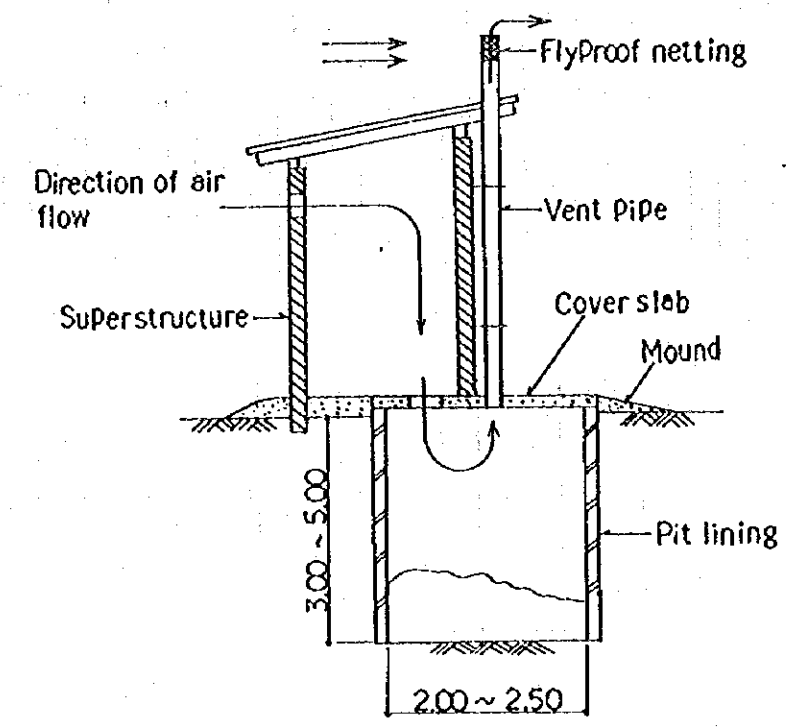
Waste Water Disposal Pit



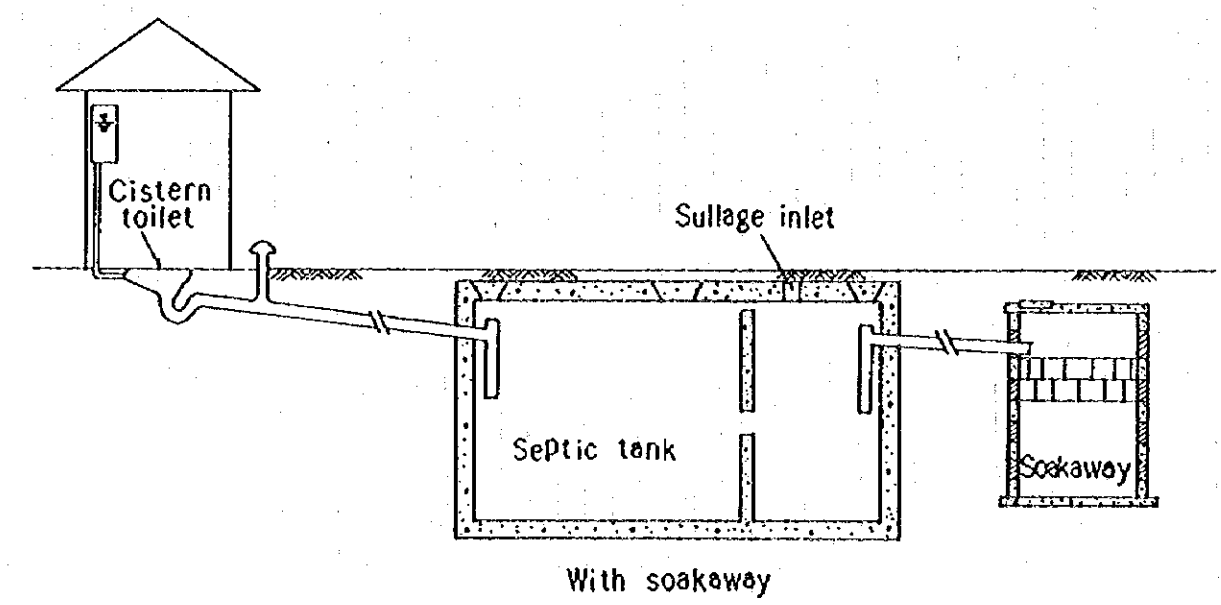
Improved Traditional Pit Latrine



Pour-flush latrine and Soakaway Pit

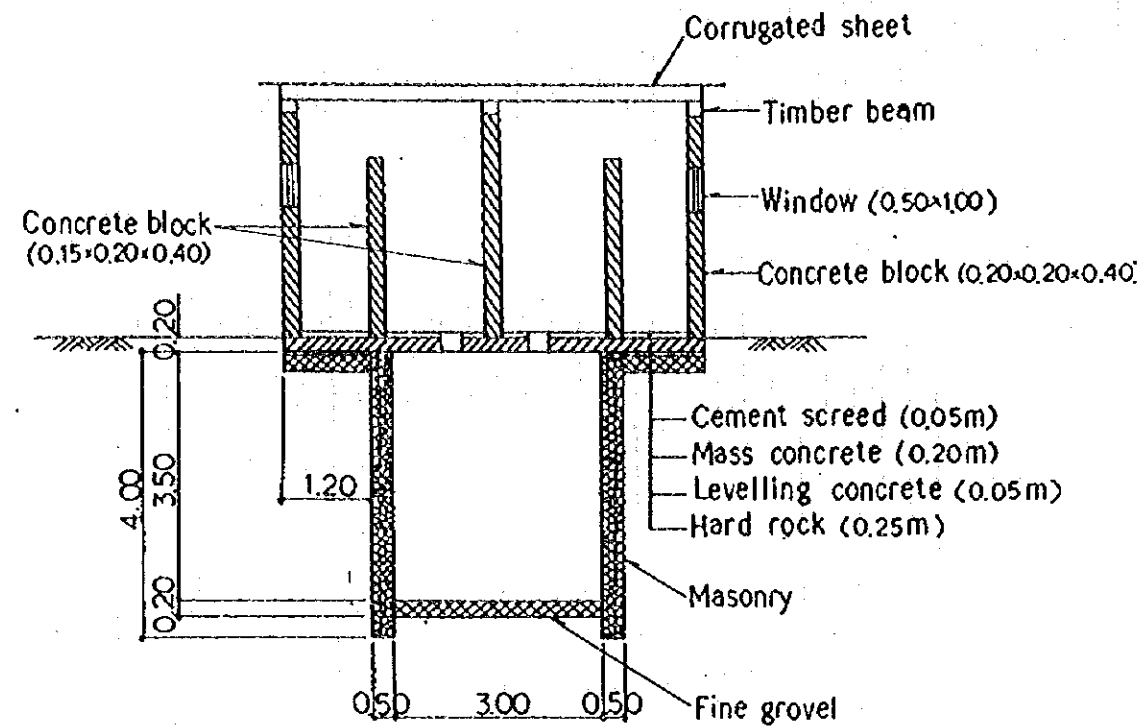


VIP Latrine

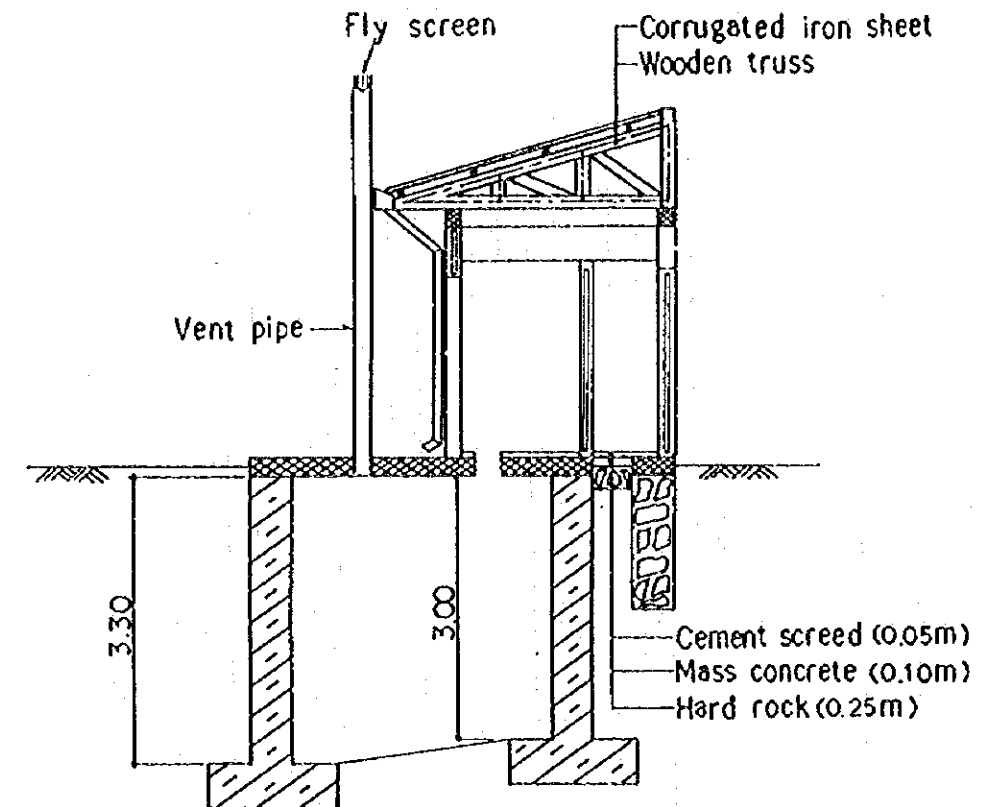


Cistern-flush Toilet and Septic Tank

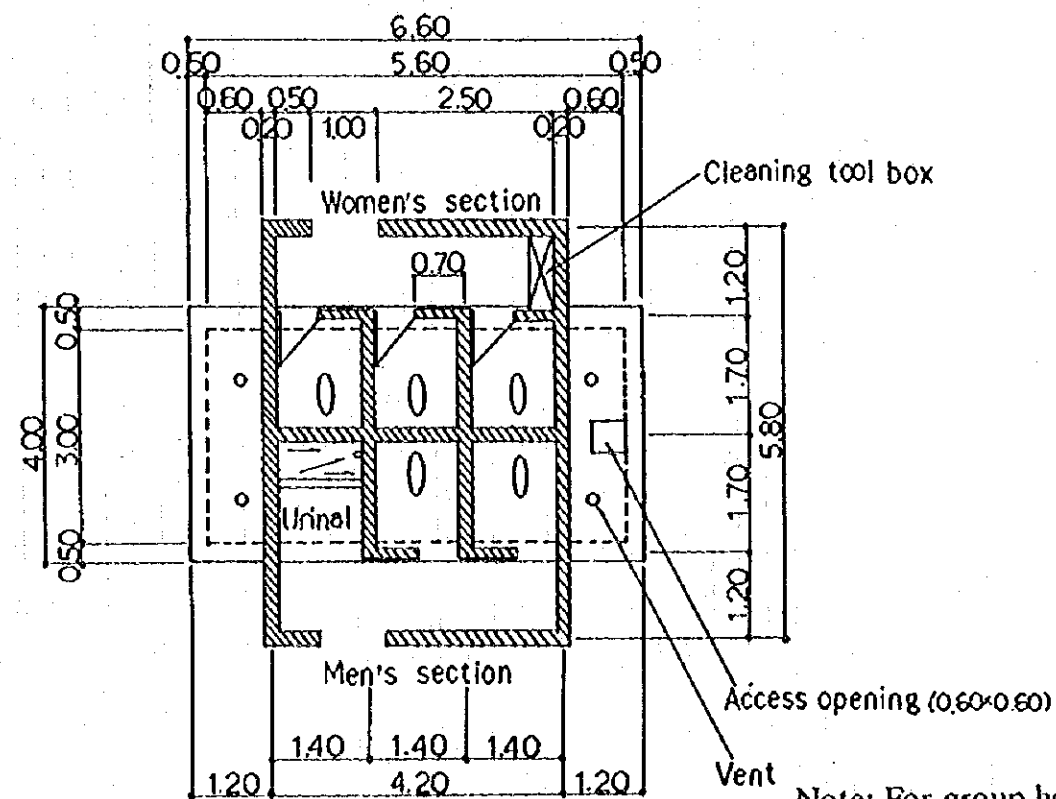
Drawing 13. Layout of Community Type Toilet and VIP Public Type Toilet



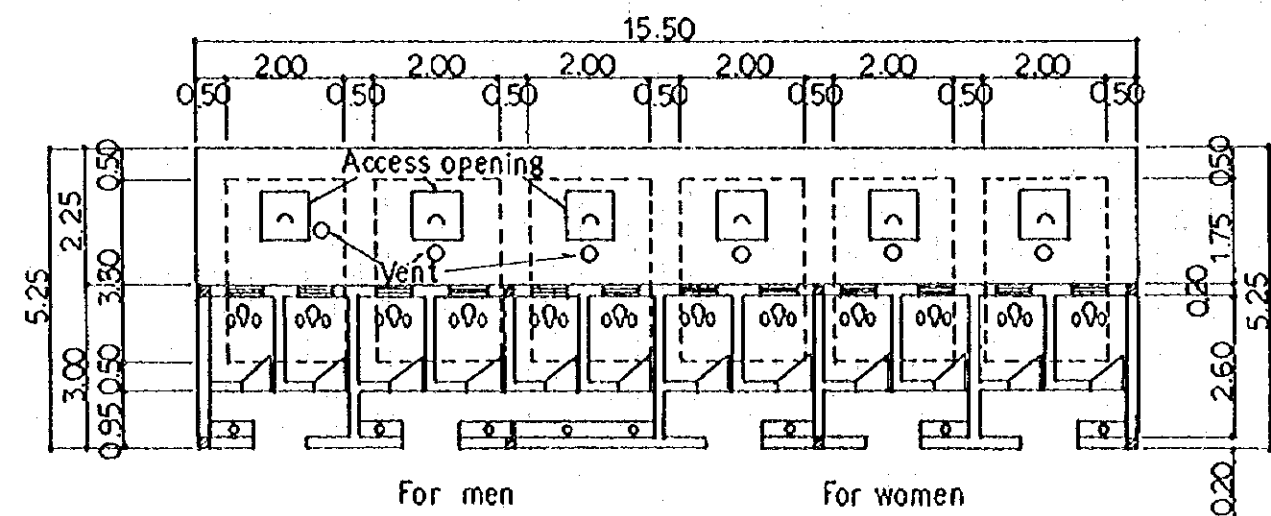
Typical Section



Typical Section

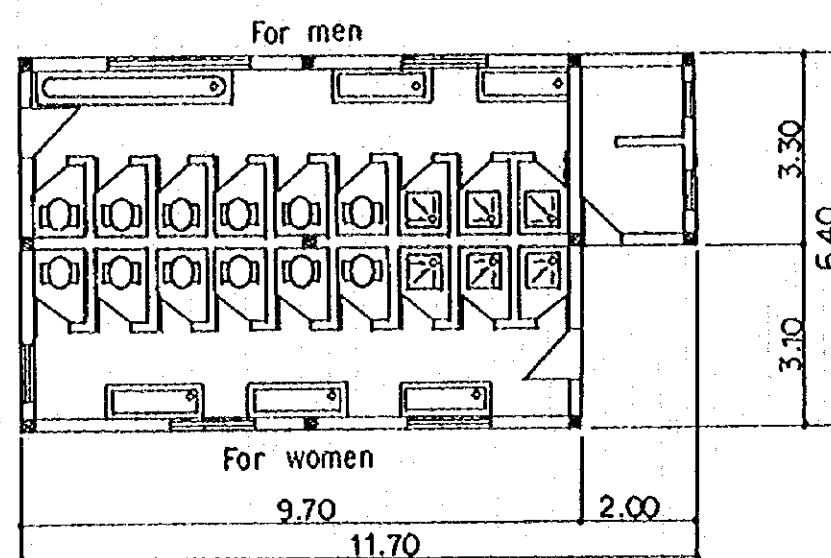
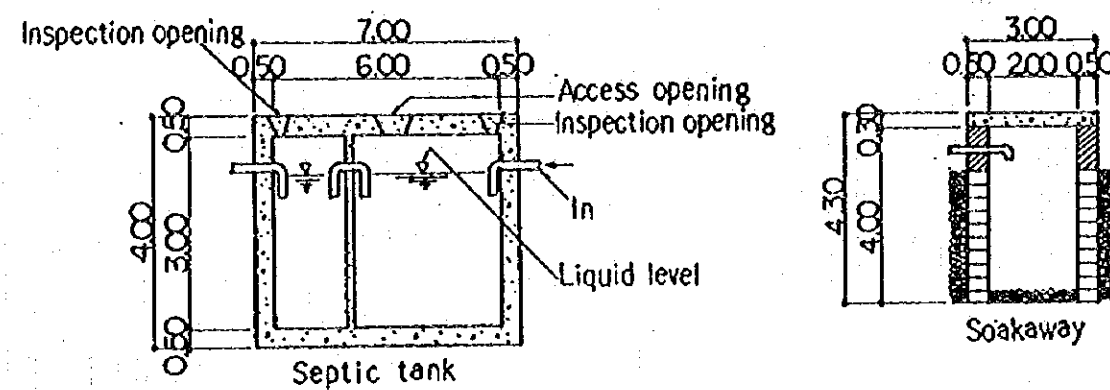
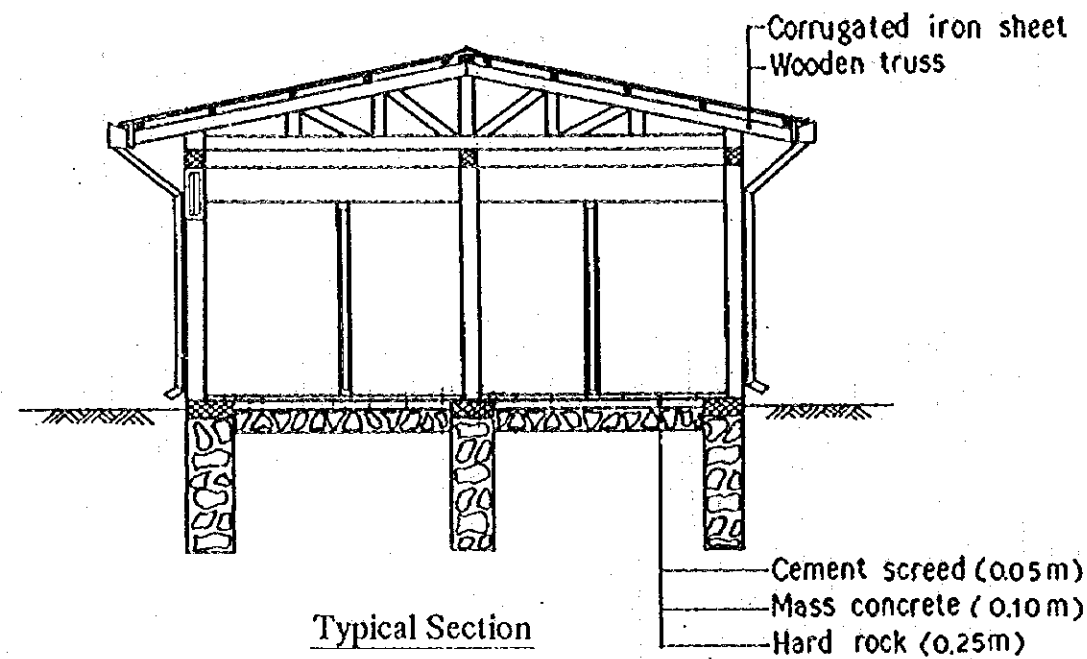


VIP Latrine (Community Type)

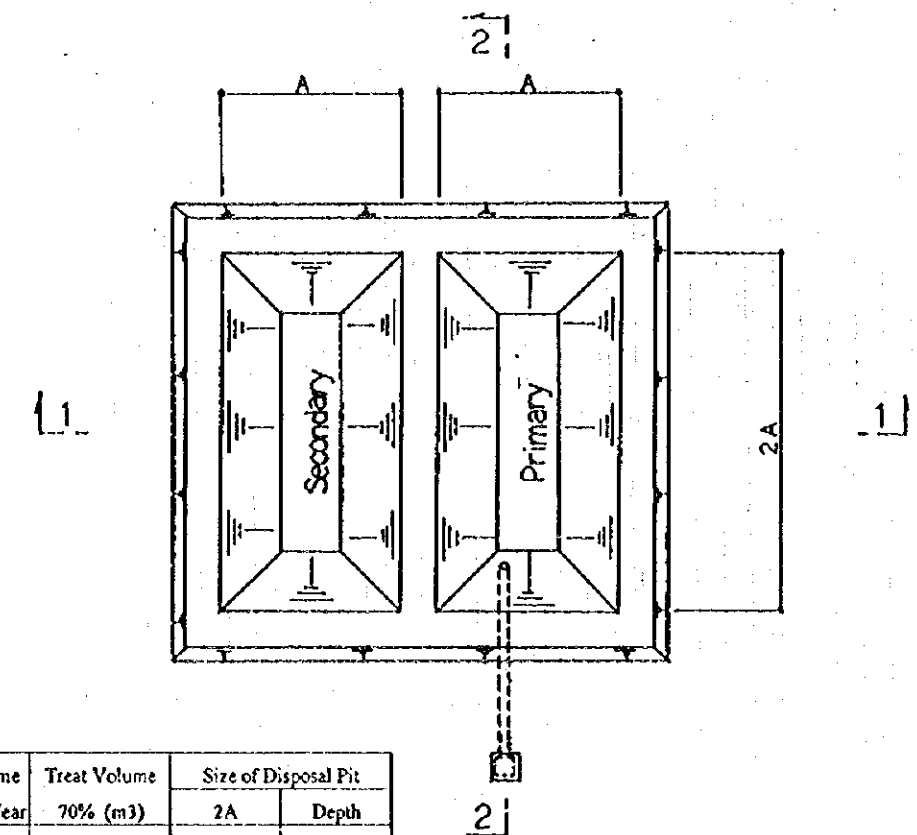
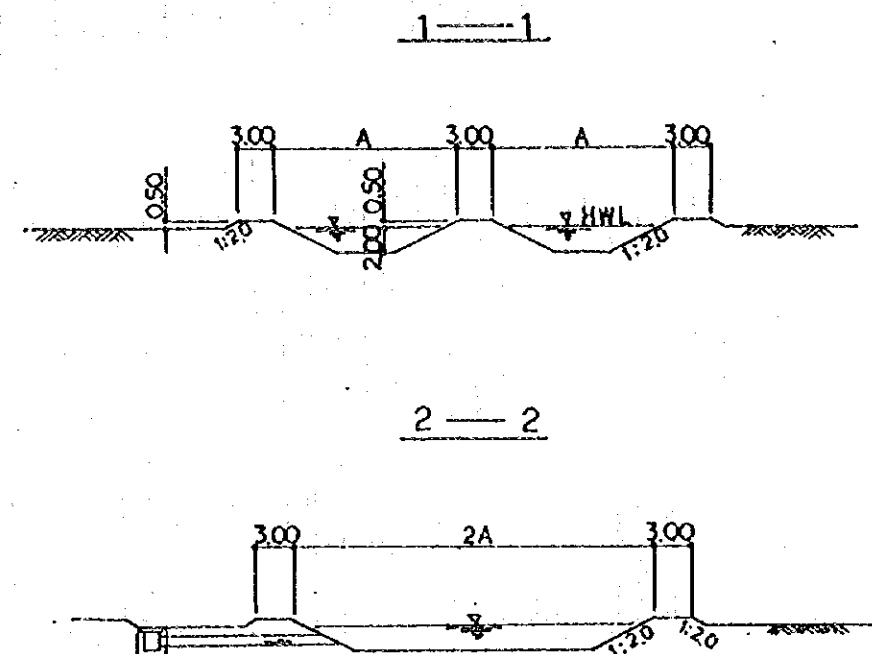


VIP Latrine (Public Type)

**Drawing 14. Layout of Pour-flush Public Type Toilet and Sullage Disposal Pit**



**Pour-flush Latrine with Shower (Public Type)**

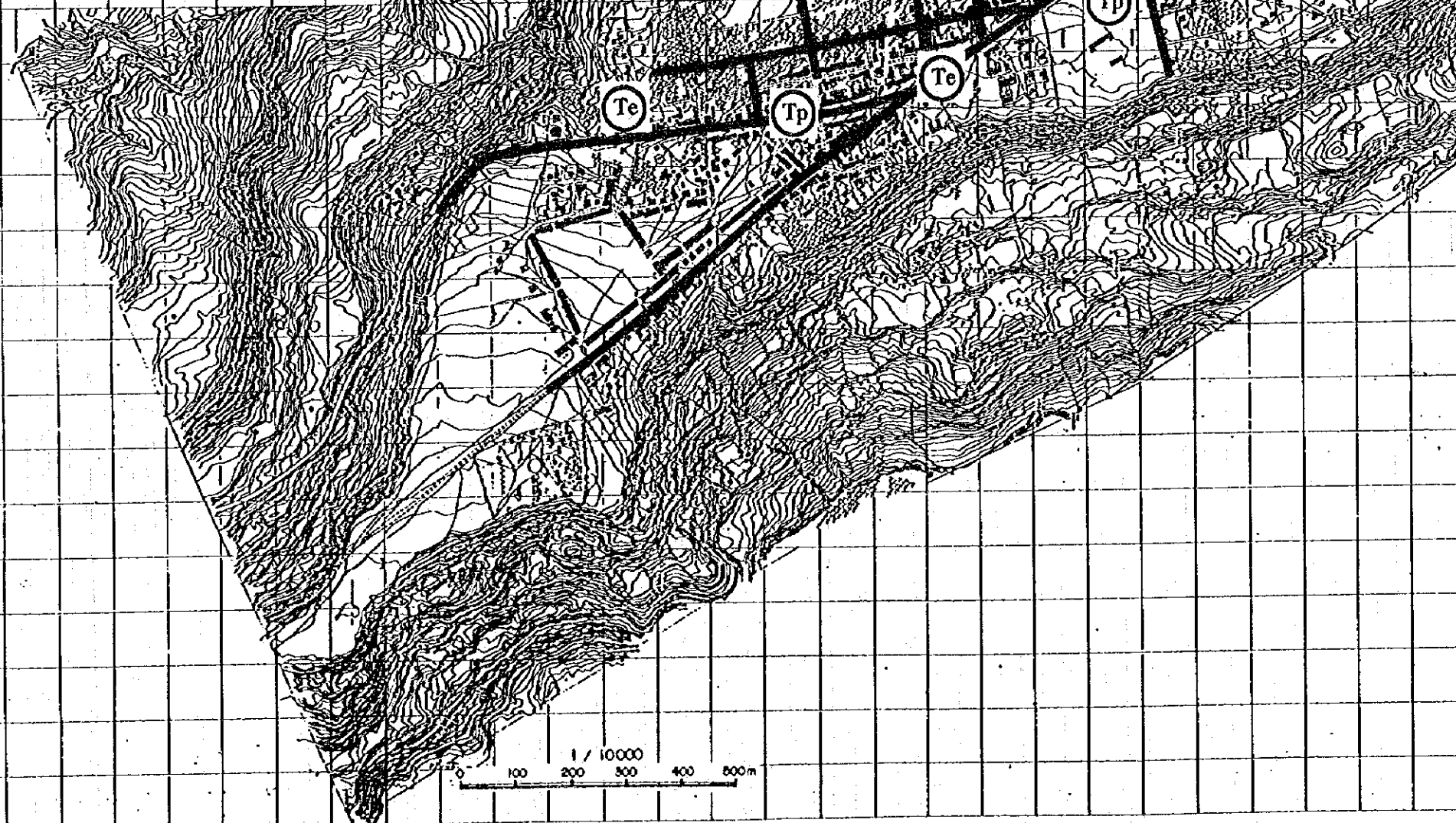


Urban Center	Population 2005	Sludge Volume 0.2m <sup>3</sup> /Man/Year	Treat Volume 70% (m <sup>3</sup> )	Size of Disposal Pit	
				2A	Depth
Dejen	12,700	2,540	1,778	30m	2m

**Sullage Disposal Pit**

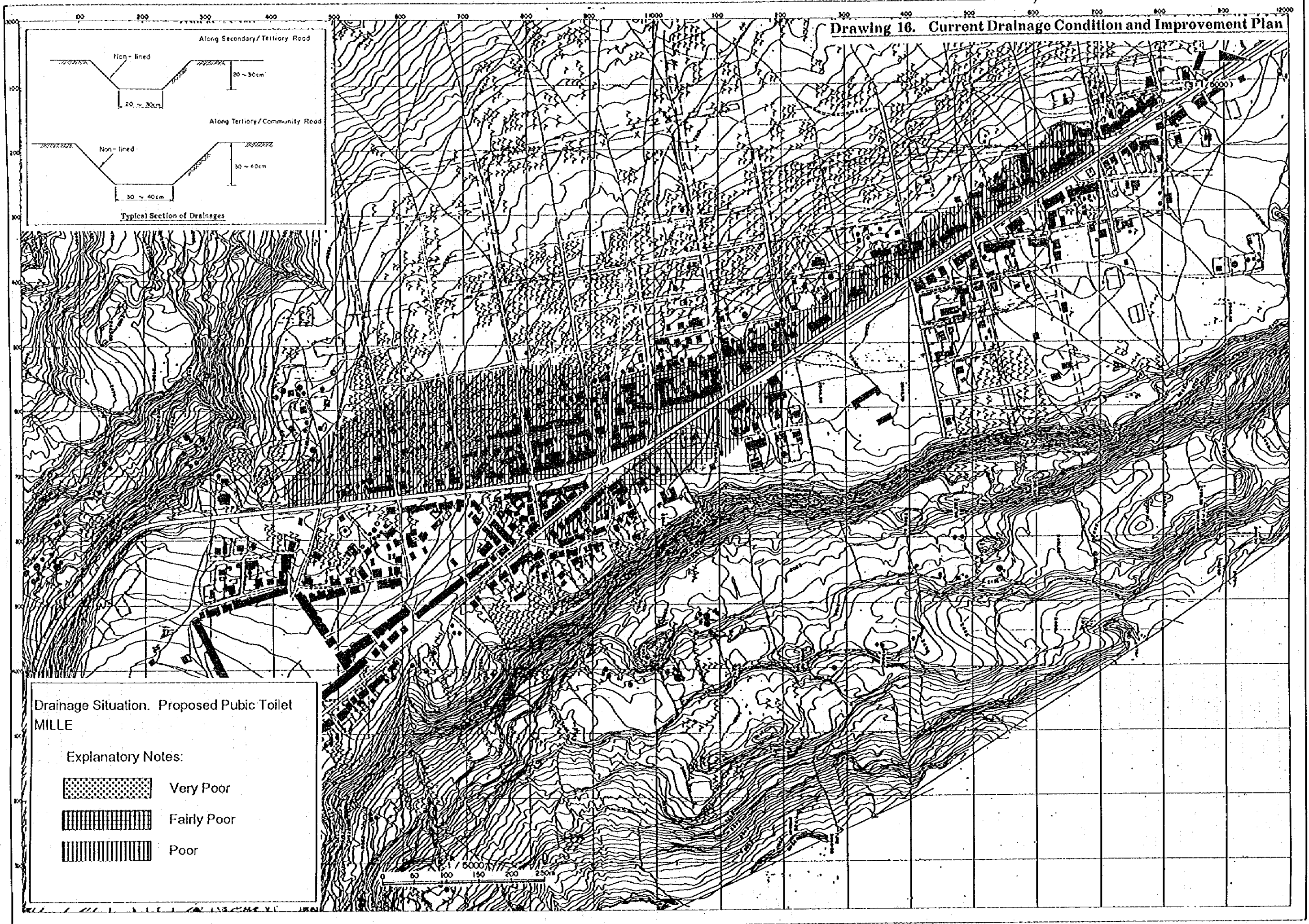
Drawing 15. Location of Sanitary Facilities

- Legend
- (Te) : Existing Toilet (public)
  - (Tp) : Proposed Toilet (public)
  - (Ts) : Proposed Toilet, schools
  - (Sc) : Existing Sludge Dumping Site
  - (Sp) : Proposed Sludge Dumping Site
  - (Re) : Existing Refuse Dumping Site
  - (Rp) : Proposed Refuse Dumping Site
  - (Et) : Experiment Toilet
  - [Dashed line] : Ds (Proposed Drainage System)





Drawing 16. Current Drainage Condition and Improvement Plan



Drainage Situation. Proposed Pubic Toilet MILLE

Explanatory Notes:

- Very Poor
- Fairly Poor
- Poor









JICA