

x. 収集資料リスト

- CPO, YAR (1978) : Final Report on the Airphoto Interpretation
Project of Swiss Technical Co-operation Service,
Berne
- (1981) : Summary, Final Results of the Cooperative
Population Census
- (1982) : The Second Five-Years Plan
- (1984) : Statistical Year book
- (1986) : 人口速報 (アラビア語)
- Dirk C. Van Enk他 (1984) : Hydrology and Hydrogeology of YAR
- IP Institute (1984) : Hydrogeological Study in the Ar Rajam Area
- MPW (1980) : Rural Water Supply Project Part I
- MPW : Rural Water Supply Department,
Desitn Criteria for Rural Water Supplies
- MPW (1984) : Rural Water Supply Project,
Deepwell Drilling Report
- RWSD, MPW : Summary of the Project
- RWSD, MPW : Project Activity Report and Design Transmittal for
the Poject Site
- World Bank (1986) : World Development Report
- YAR : Republican Decree No.5 for 1970
in relation to the Labour Ordinance
- Survey Authority : The Topogra phical Maps (1:50,000 ~1:5,000)
- : Meteorological Data
- : Aerial Photography (1:50,000)



YEMEN ARAB REPUBLIC
RURAL WATER SUPPLY PROJECT

BASIC DESIGN
DRAWINGS

MARCH 1987

JAPAN INTERNATIONAL COOPERATION AGENCY

LIST OF DRAWINGS

ITEM	DRAWING TITLE	DWG.NO.	ITEM	DRAWING TITLE	DWG.NO.
0	LIST OF DRAWINGS	0 - 1		HARAD : SITE PLAN	A - 17
	LOCATION MAP OF PROJECT SITES	0 - 2		: SUPPLY FACILITIES PLANNING	A - 18
	LEGEND	0 - 3	B	DETAILS OF WATER SUPPLY FACILITIES	
A	SITE PLAN AND PROFILE			TYPICAL STRUCTURE OF WELL	
	WADI ASFAN : SITE PLAN	A - 1		: AL RAJAM	B - 1
	: PROFILE	A - 2		TYPICAL WELL DRILLING	
	AL KHASHNA : SITE PLAN	A - 3		: SHIHARA AND WADI ASFAN	B - 2
	: PROFILE	A - 4		TYPICAL PUMP HOUSE CONSTRUCTION	B - 3
	AL ZAKIPA : SITE PLAN	A - 5		WATER TANK DETAILS	
	: PROFILE	A - 6		: 100 m3 GROUND TANK	B - 4
	AL KHEISEN : SITE PLAN	A - 7		WATER TANK DETAILS	
	: PROFILE	A - 8		: 50 m3 GROUND TANK	B - 5
	AL RAJAM : SITE PLAN	A - 9		WATER TANK DETAILS	
	: PROFILE (1)	A - 10		: 30 m3 GROUND TANK	B - 6
	: PROFILE (2)	A - 11		WATER TANK DETAILS	
	SHIHARA : SITE PLAN	A - 12		: 100 m3 ELEVATED TANK	B - 7
	: PROFILE (1)	A - 13		PLUMBING WORK DETAILS	B - 8
	: PROFILE (2)	A - 14		PUBLIC FOUNTAIN (1)	B - 9
ADDAHI : SITE PLAN	A - 15		PUBLIC FOUNTAIN (2)	B - 10	
: SUPPLY FACILITIES PLANNING	A - 16		ELECTRIC WORKS	B - 11	

YEMEN ARAB REPUBLIC

RURAL WATER SUPPLY PROJECT

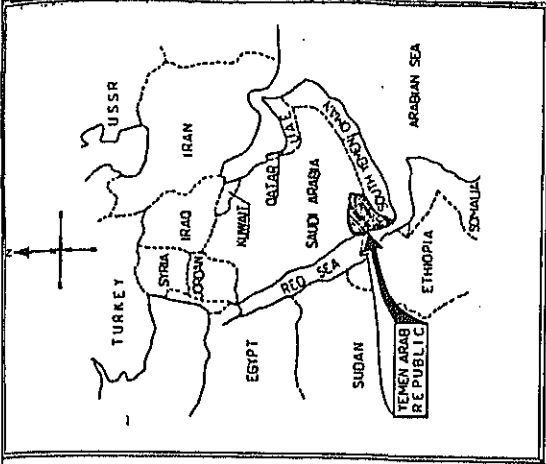
LIST OF DRAWINGS :

DATE: FEB. 1987

SCALE

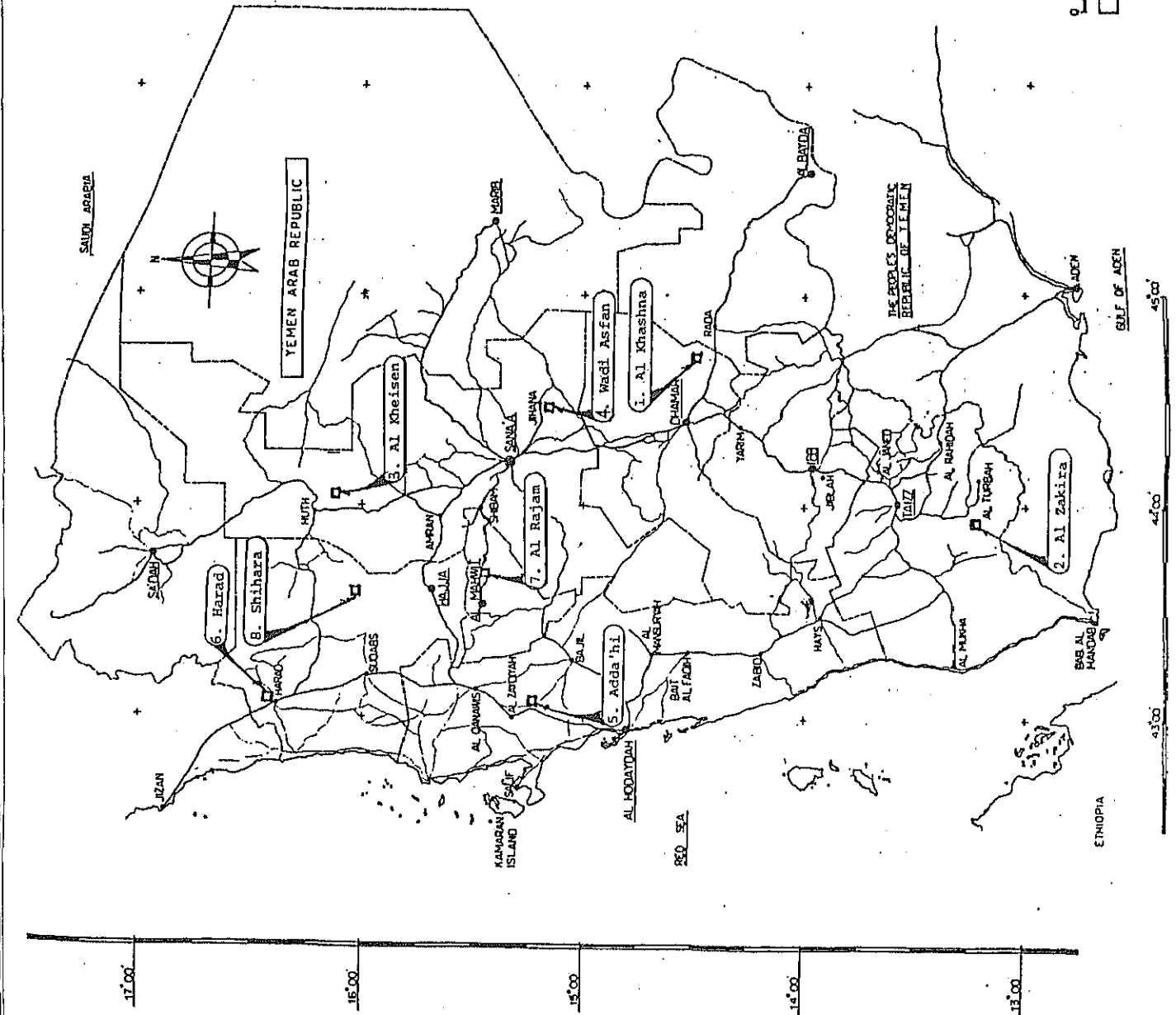
DWG. NO.

JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)



PROJECT PHASE	No.	PROJECT SITE	GOVERNORATE
I	1	Al Khashna	DHAMAR
I	2	Al Zakira	TAIZZ
I	3	Al Kheisen	SANA'A
II	4	Wadi Asfan	SANA'A
II	5	Adda'hi	HODAYDAH
II	6	Harad	HAJJA
II-III	7	Al Rajam	AL MAHWIT
II-III	8	Shihara	HAJJA

YEMEN ARAB REPUBLIC		
RURAL WATER SUPPLY PROJECT		
LOCATION MAP OF PROJECT SITES		
DATE: FEB. 1987	SCALE	DWG. No.
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		



A. SITE PLAN AND PROFILE

LEGEND

ITEM	SYMBOL	DESCRIPTION	CODE	ITEM	SYMBOL	DESCRIPTION	CODE
DEEPWELL		NEW CONSTRUCTION		FACILITY NO.		FACILITY AND PIPE BRANCH	
		EXISTING		WATER LEVEL			
WATER TANK		GROUND AND ELEVATED	$\frac{9}{E}$	GROUND LEVEL			
PUMP/HOUSE		PUMP WITH HOUSING					
		PUMP AND PUMP HOUSE					
WATER SUPPLY		WATER SUPPLY LINE					
		DISTRIBUTION LINE					
		PUBLIC FOUNTAIN					
		PIPE BRANCH		VILLAGE			
		PUBLIC FOUNTAIN					
		GATE VALVE					

YEMEN ARAB REPUBLIC

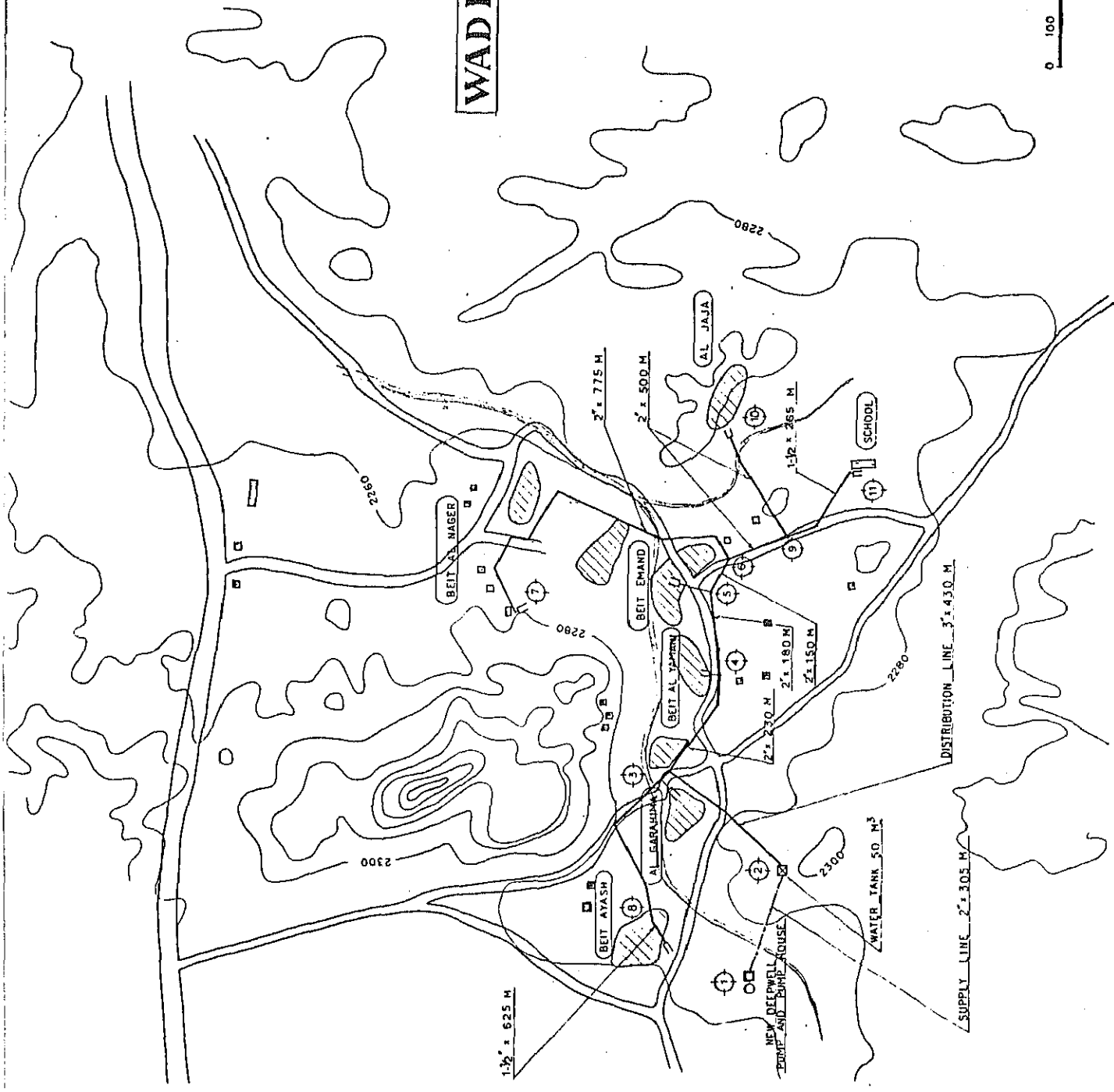
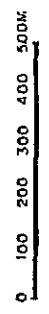
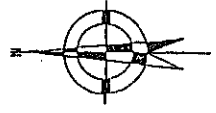
RURAL WATER SUPPLY PROJECT

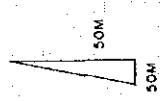
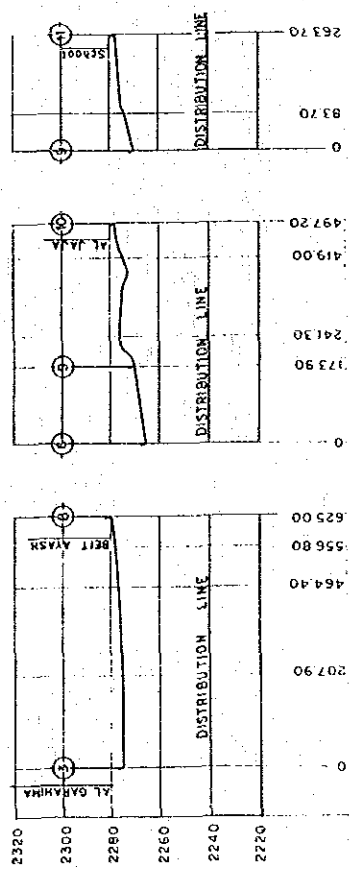
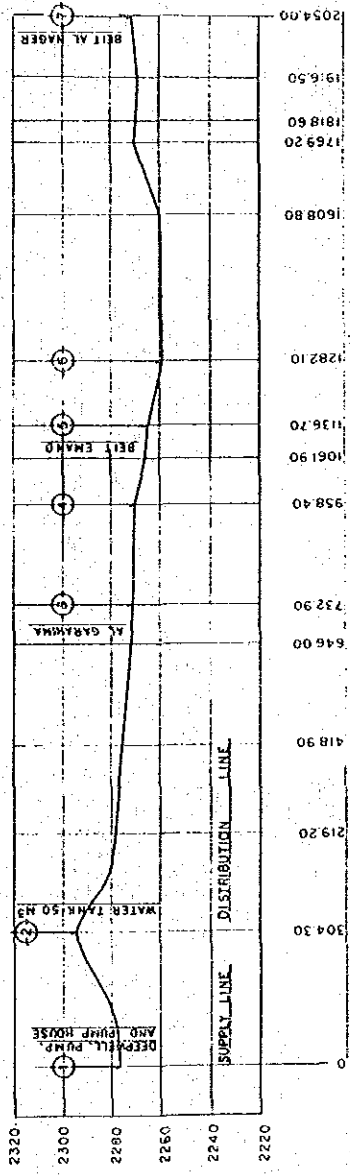
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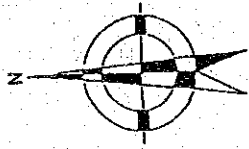
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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

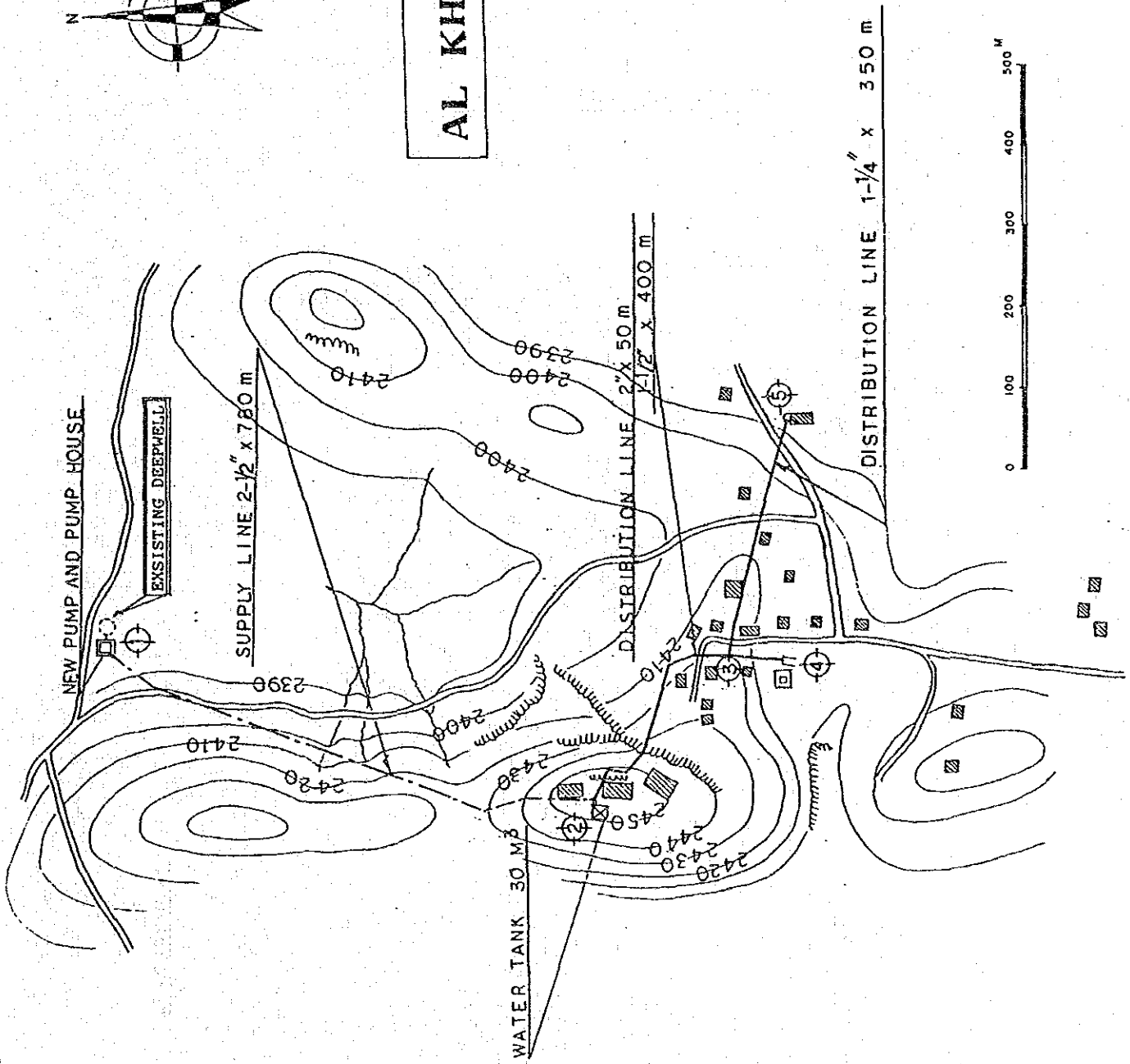
WADI ASFAN







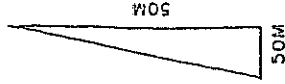
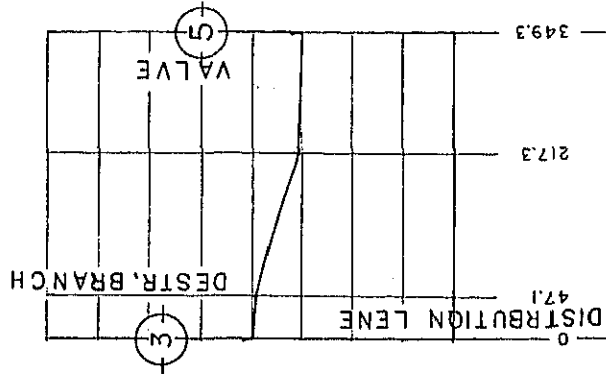
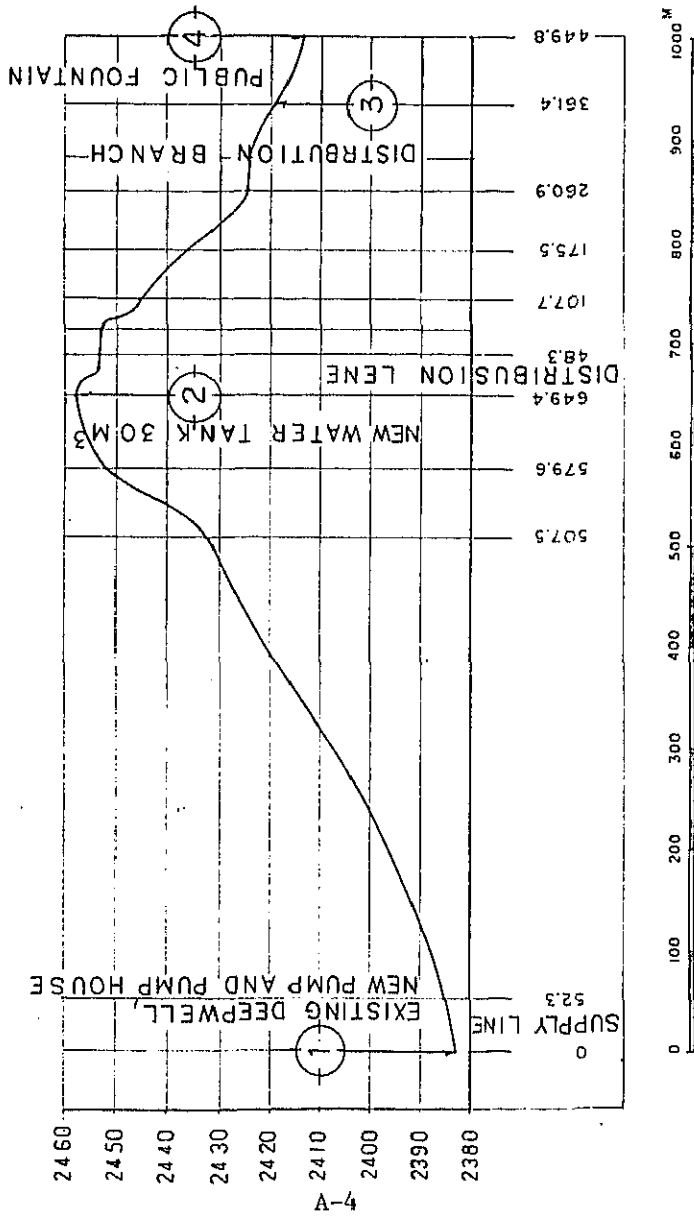
AL KHASHNA



YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
AL KHASHNA : SITE PLAN	
DATE: FEB. 1987	SCALE
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

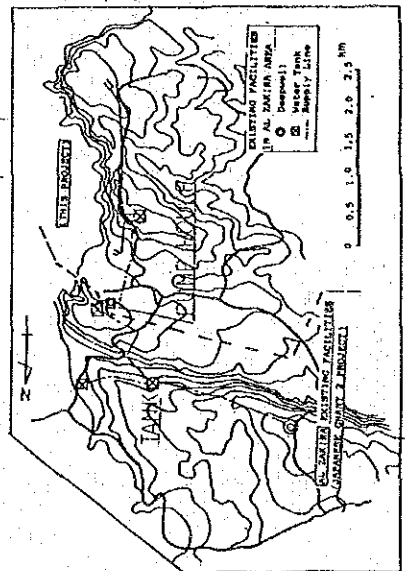
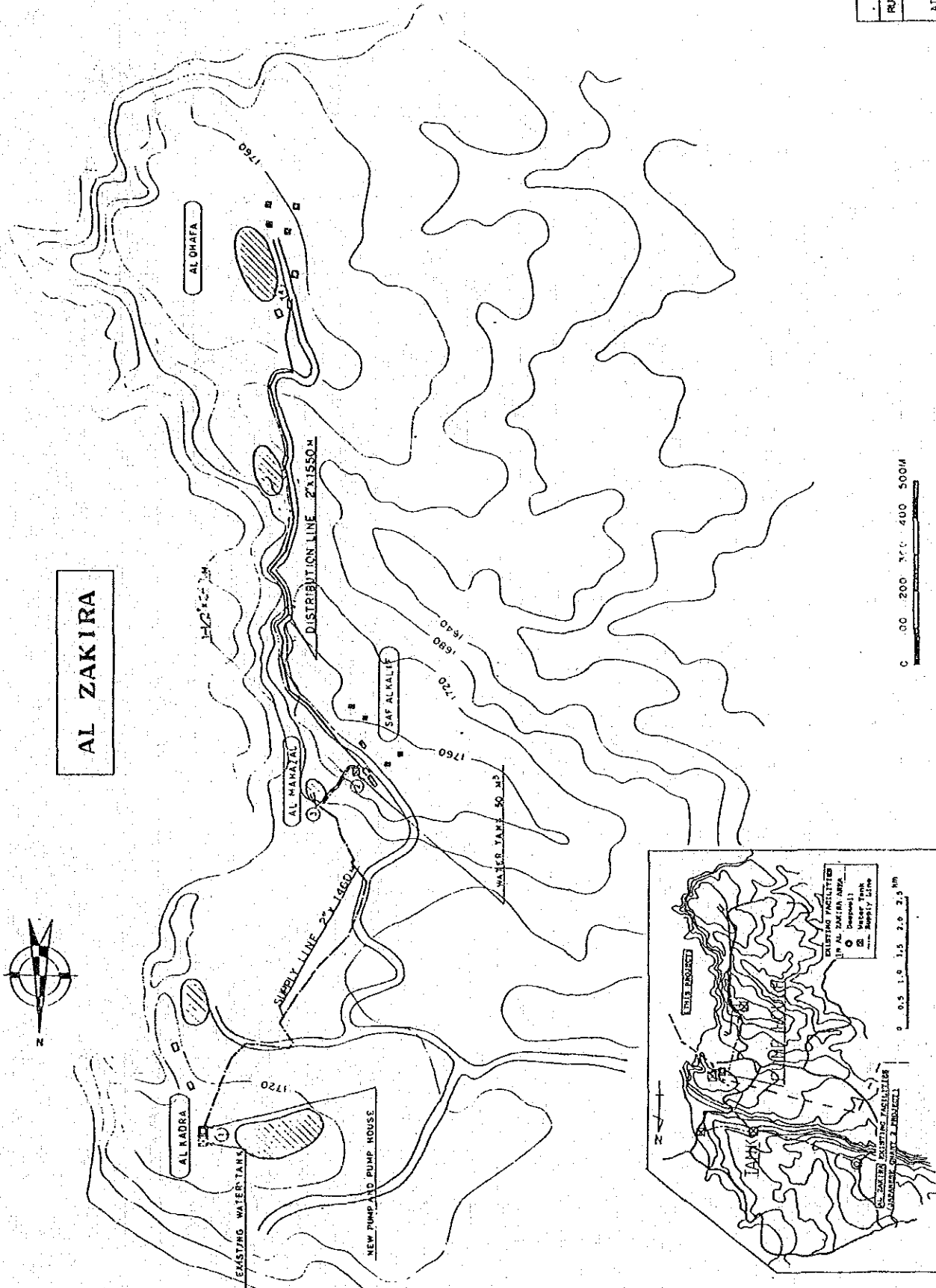


AL-KHASHNA



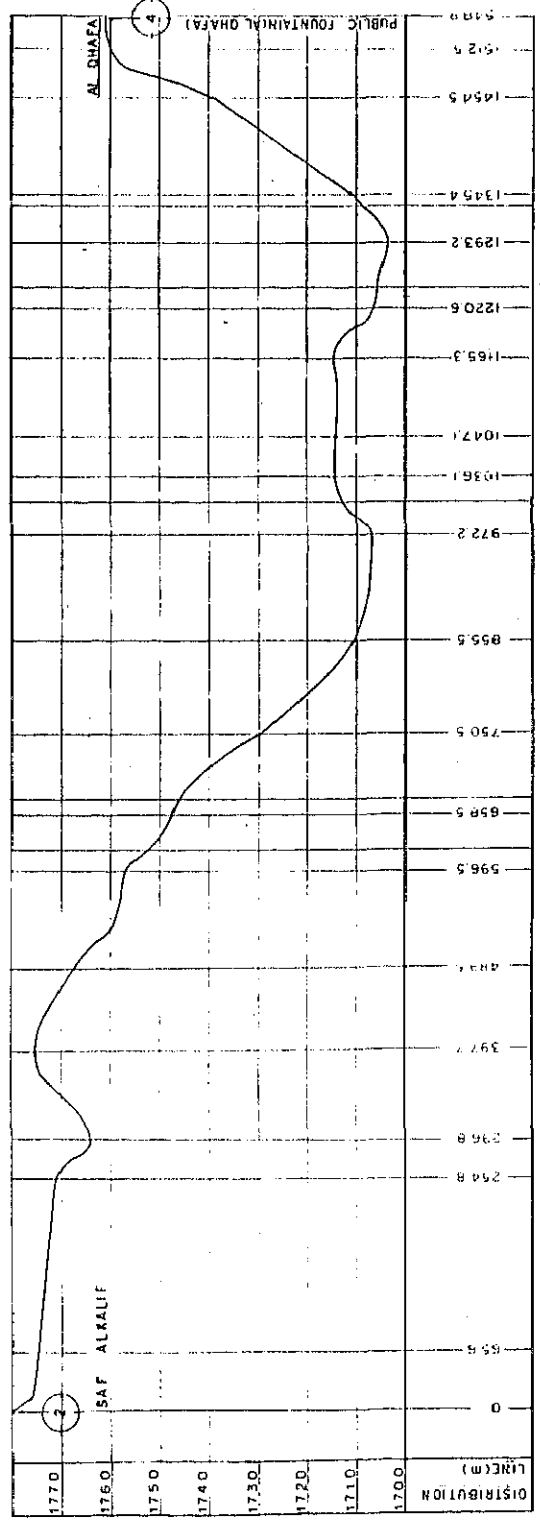
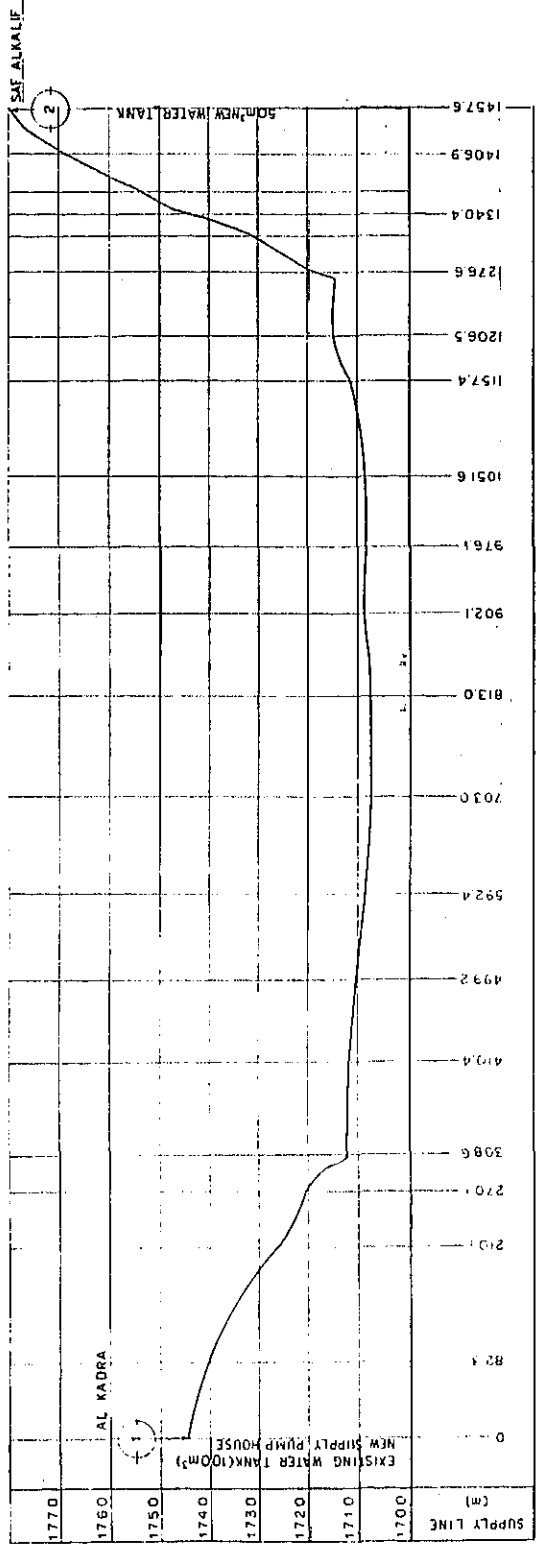
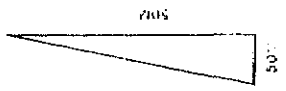
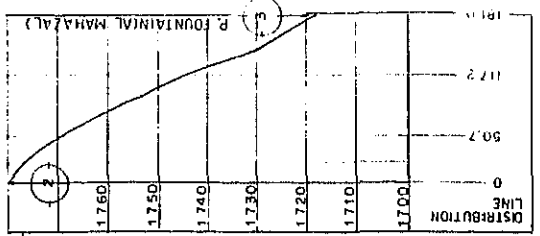
YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
AL KHASHNA : PROFILE	
DATE: FEB. 1987	SCALE
	DWG. NO.
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

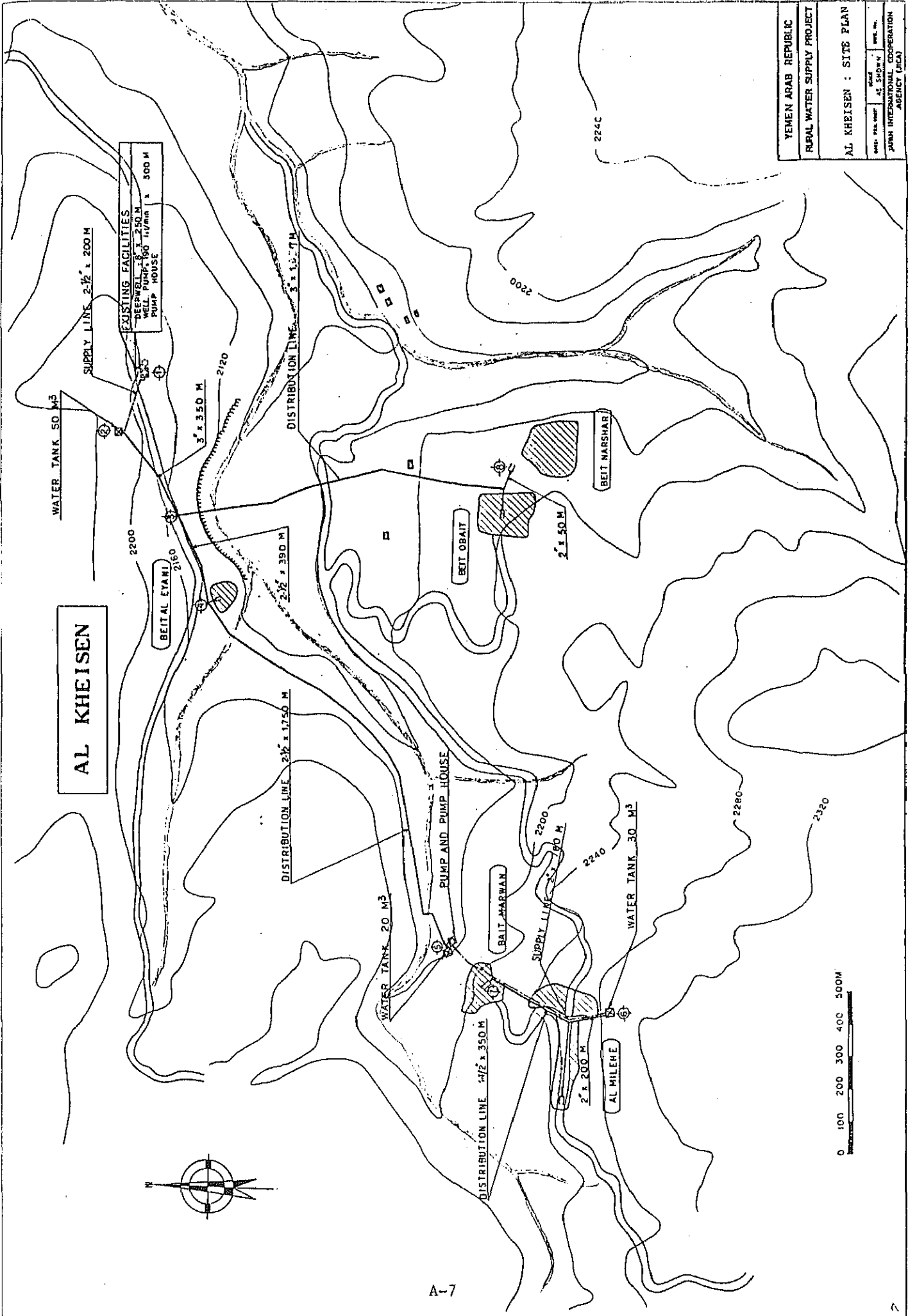
AL ZAKIRA



C 00 200 400 500M

YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
AL ZAKIRA : SITE PLAN	
DATE: FEB 1977	DRAWN BY: J.S. SUTTON
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

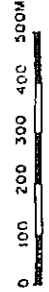
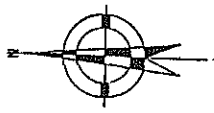




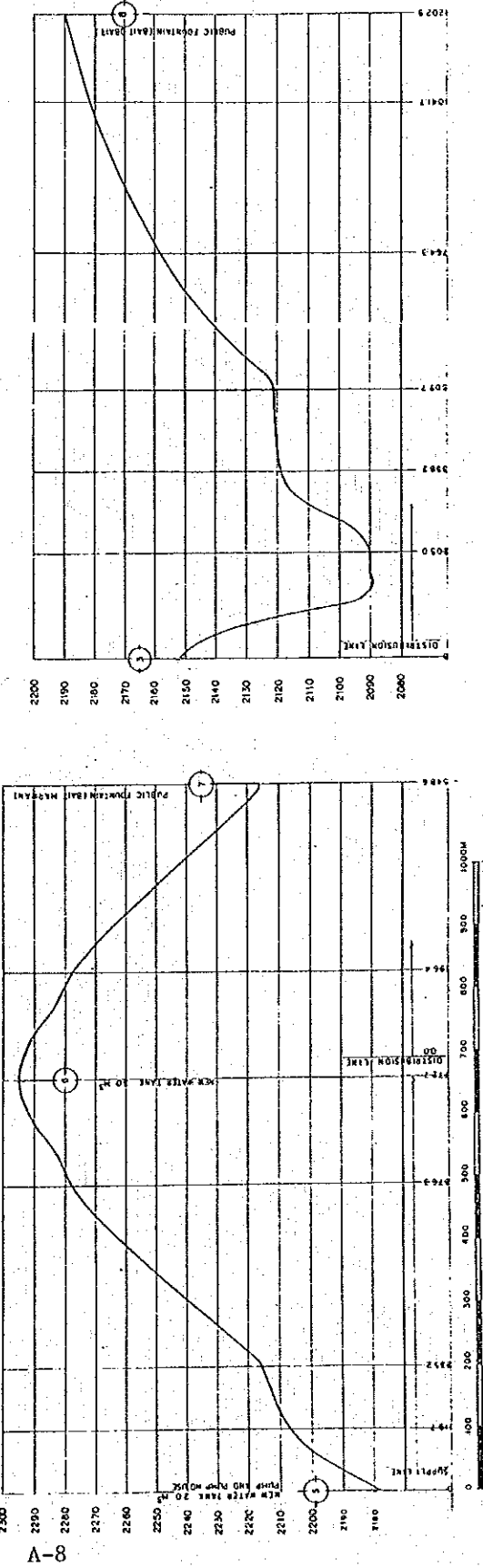
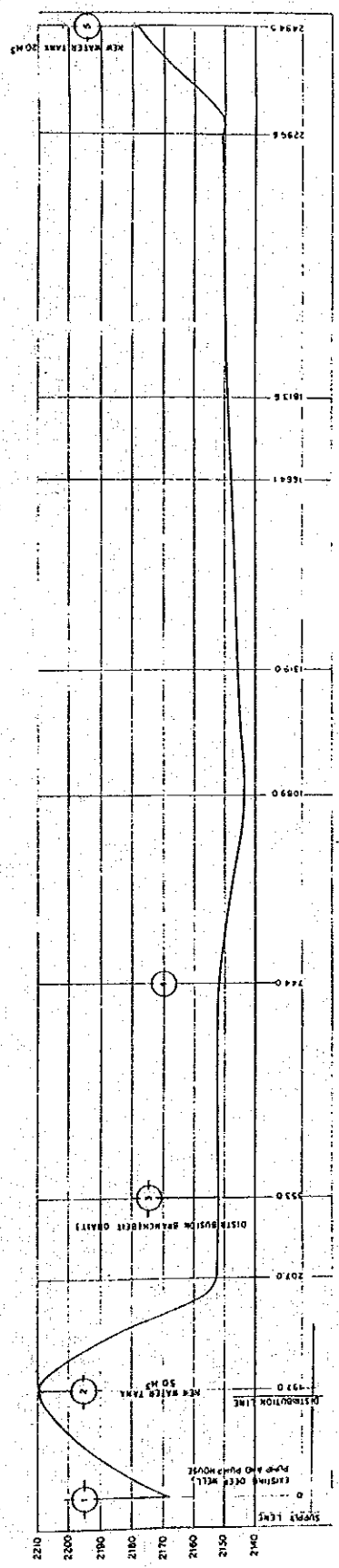
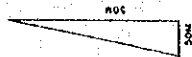
AL KHEISEN

EXISTING FACILITIES
 DEERWELL 8" x 250 M
 WELL PUMP 100 1 1/2 MIN
 PUMP HOUSE

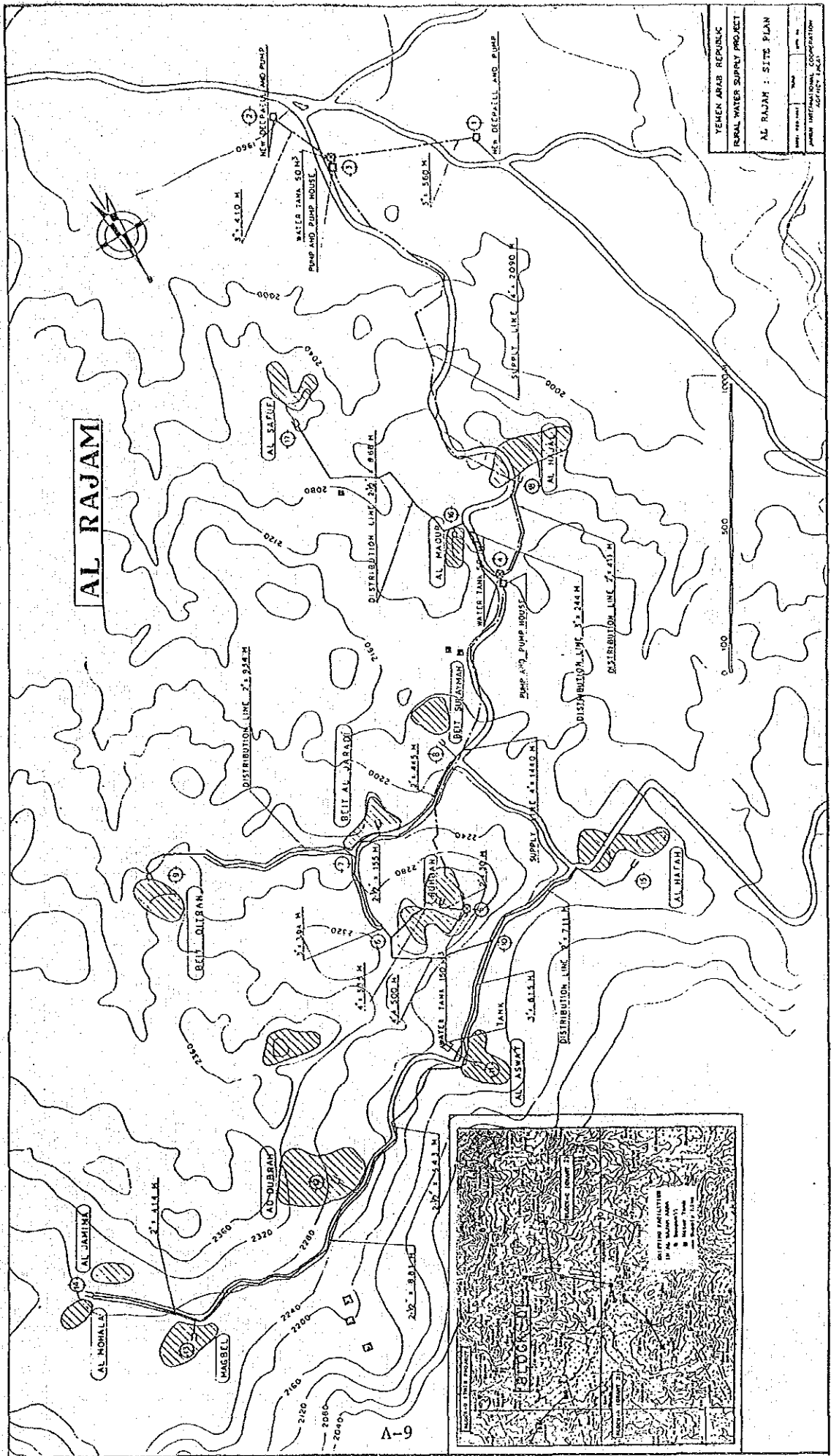
YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
AL KHEISEN : SITE PLAN	
DATE: FEB 1967	SHEET NO. 1
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	



YEMEN ARAB REPUBLIC
 RAHAL WATER SUPPLY PROJECT
 AL-SHEJEN
 : PROFILE
 Scale: 1:1000
 Date: 1980
 Author: [unclear]
 Check: [unclear]
 Drawn: [unclear]



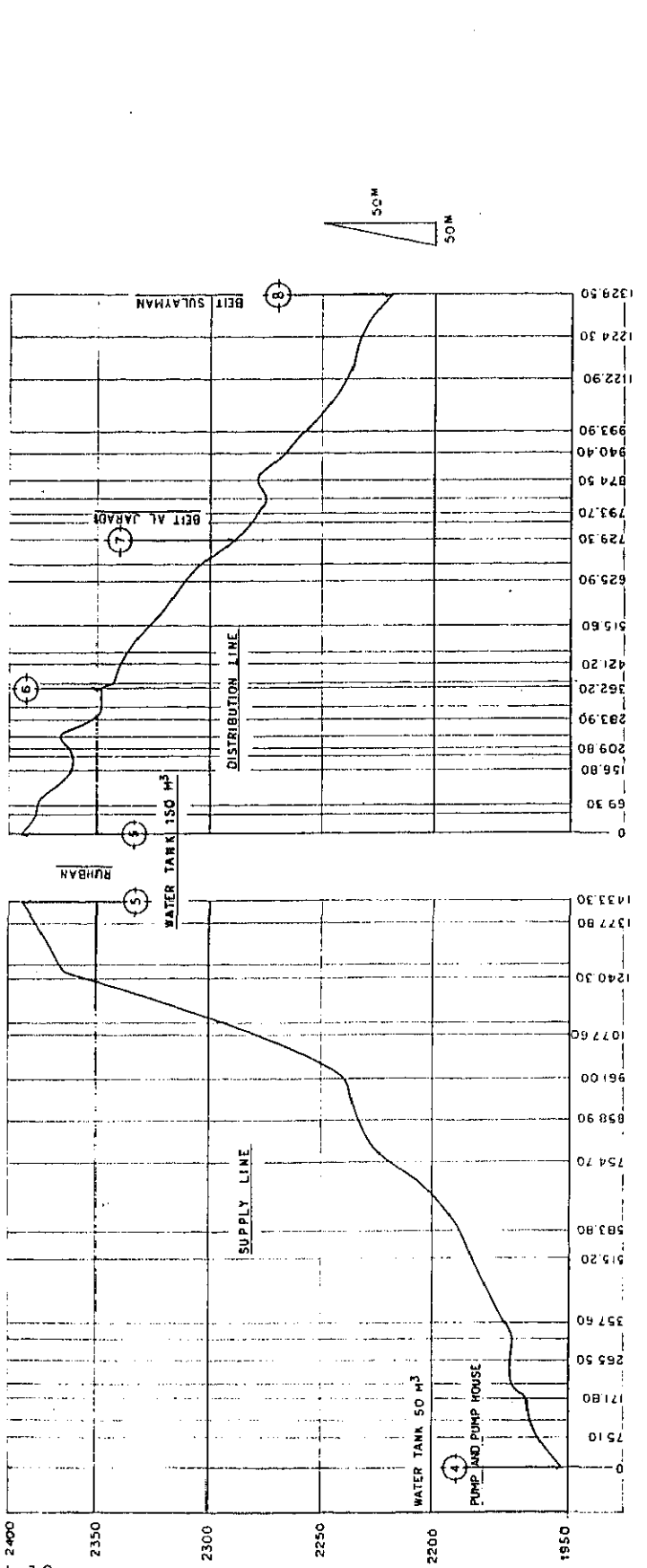
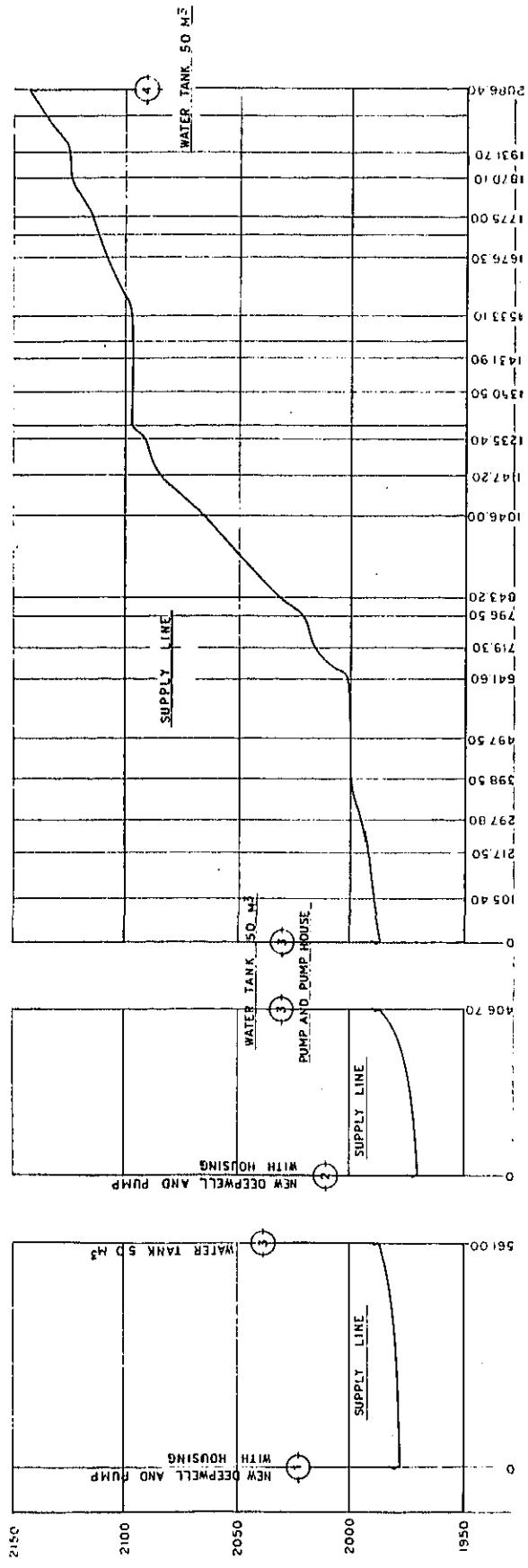
A-8



YEMEN ARAB REPUBLIC
 RURAL WATER SUPPLY PROJECT
 AL RAJAM : SITE PLAN
 SHEET: 100/1000
 DATE: 1/80
 DRAWN BY: J.M. COOPER
 CHECKED BY: J.M. COOPER
 APPROVED BY: J.M. COOPER

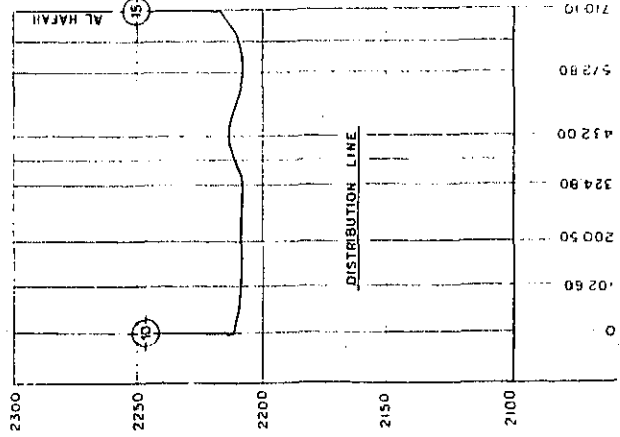
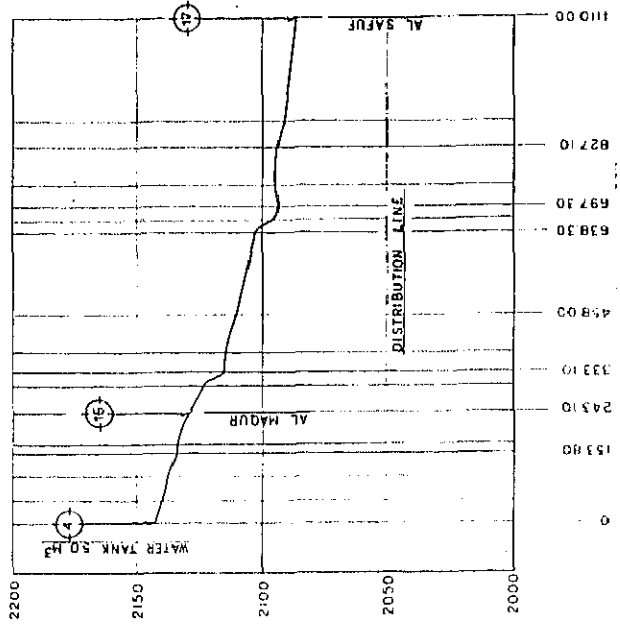
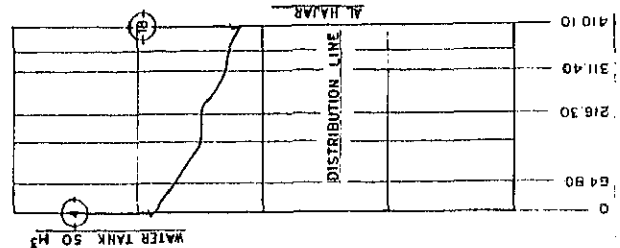
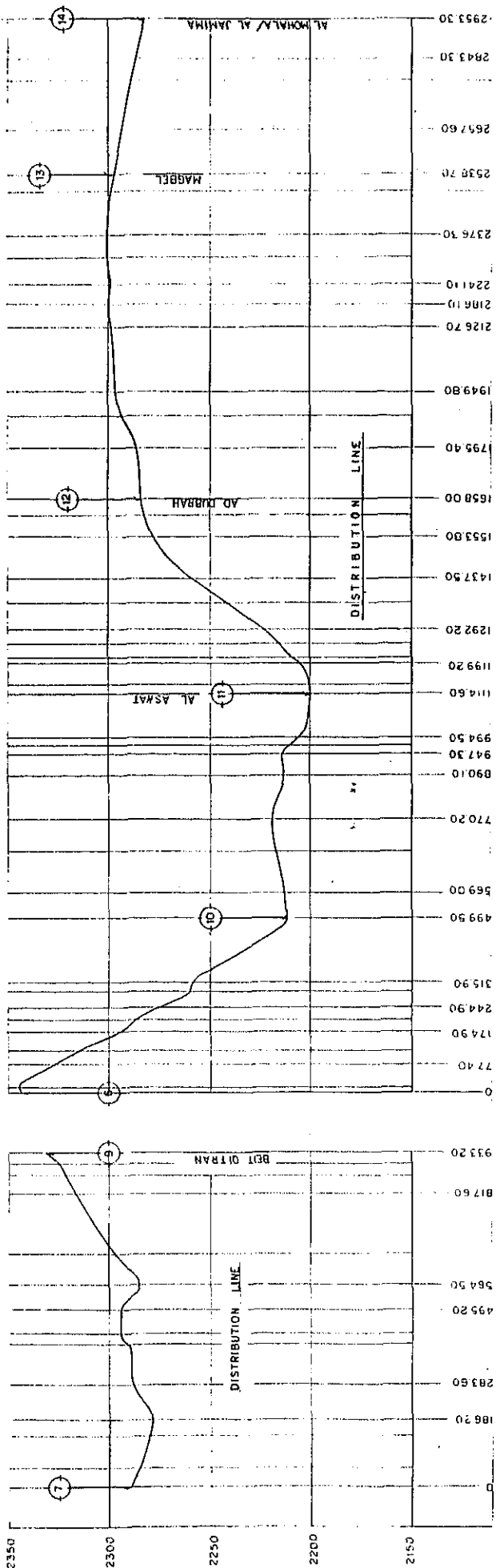
AL RAJAM

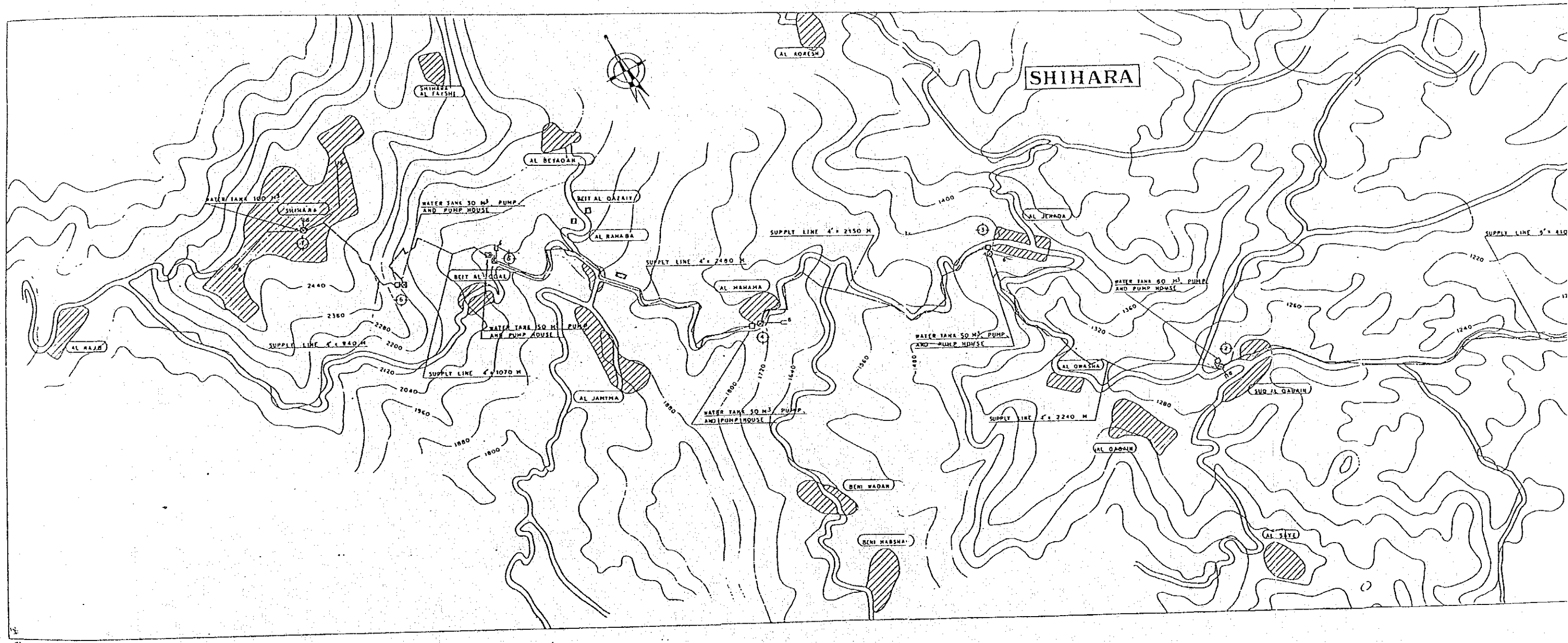
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A-10

YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
AL RAJAM : PROFILE (2)	
DATE: 1982-1983	SCALE: 1:1000
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	





SHIHARA

SHIHARA
AL FAISHI

AL BAYQAH

BEIT AL QAZAYT

AL RAHABA

AL MAHAMA

AL JAMMA

AL OMAISHA

AL QADISH

AL JERADA

AL SHI

BENI WADAN

BENI HARBHA

WATER TAKE 100 M³

WATER TAKE 30 M³ PUMP
AND PUMP HOUSE

WATER TAKE 50 M³ PUMP
AND PUMP HOUSE

WATER TAKE 30 M³ PUMP
AND PUMP HOUSE

WATER TAKE 50 M³ PUMP
AND PUMP HOUSE

WATER TAKE 50 M³ PUMP
AND PUMP HOUSE

SUPPLY LINE 4' x 740 M

SUPPLY LINE 4' x 1070 M

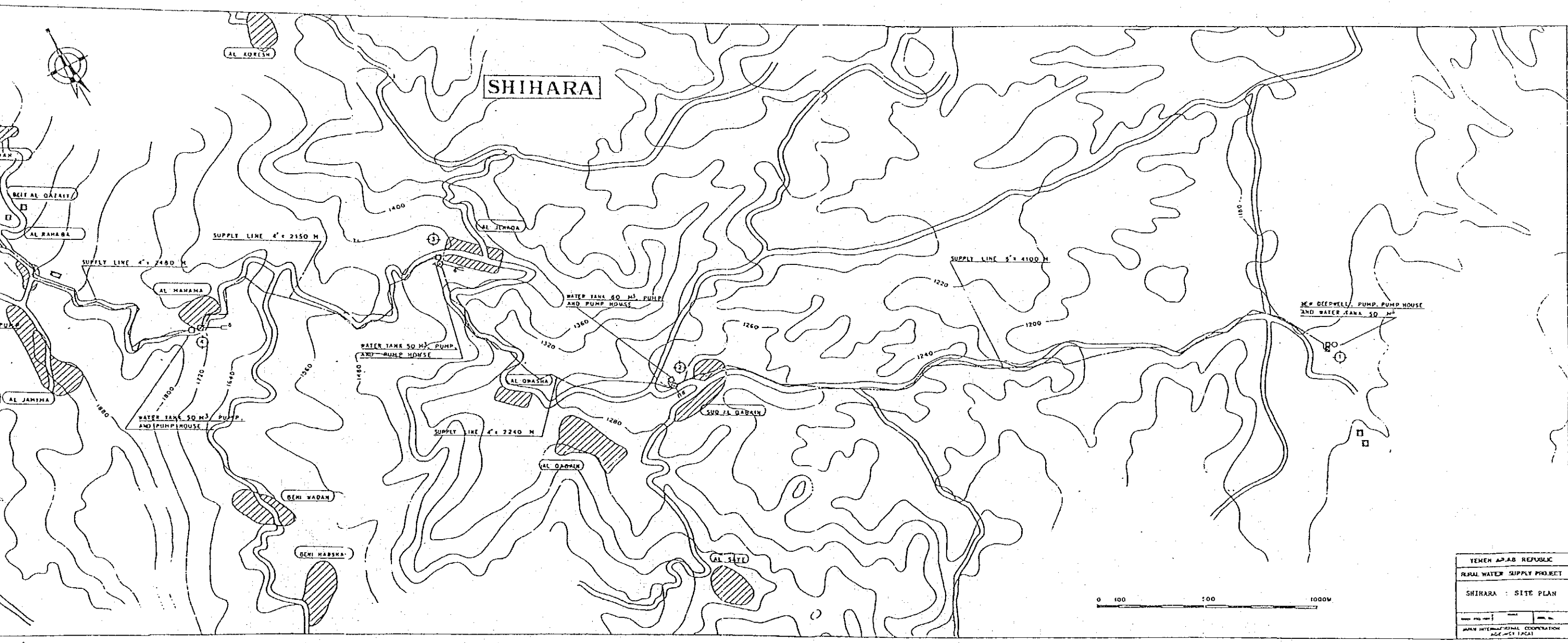
SUPPLY LINE 4' x 2480 M

SUPPLY LINE 4' x 2150 M

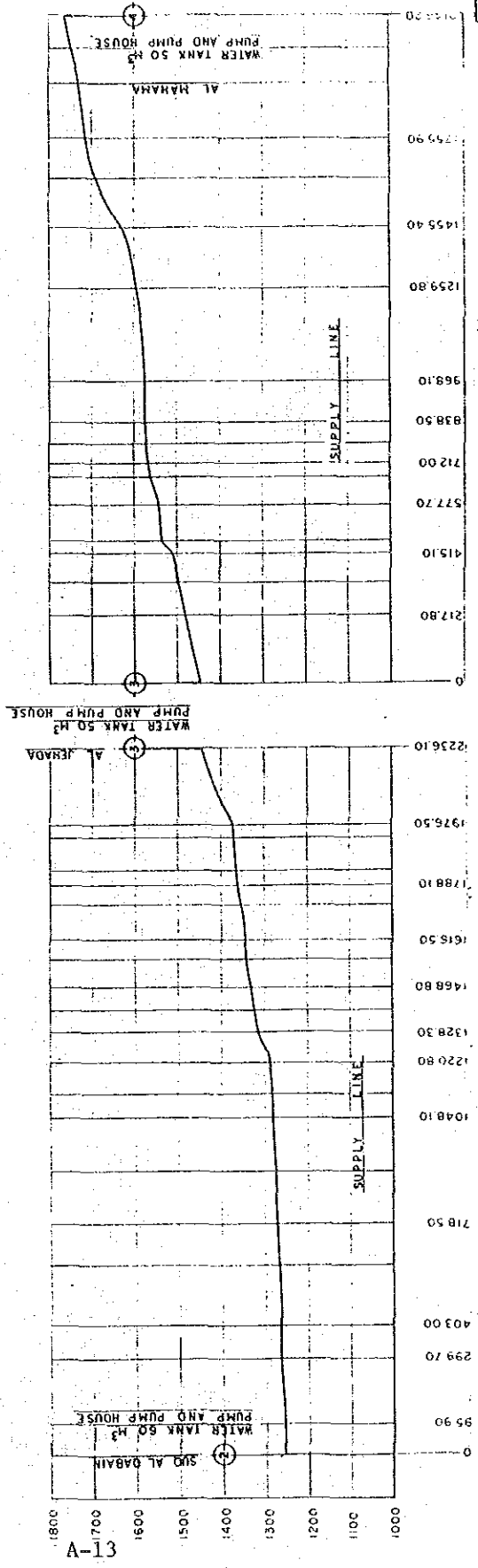
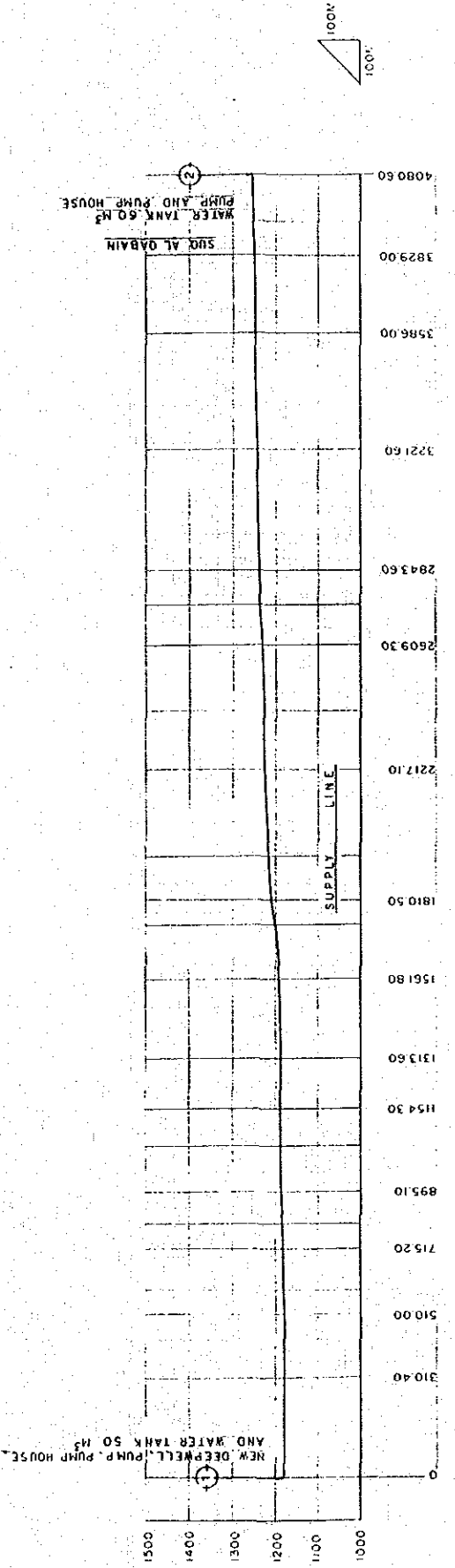
SUPPLY LINE 4' x 2240 M

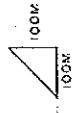
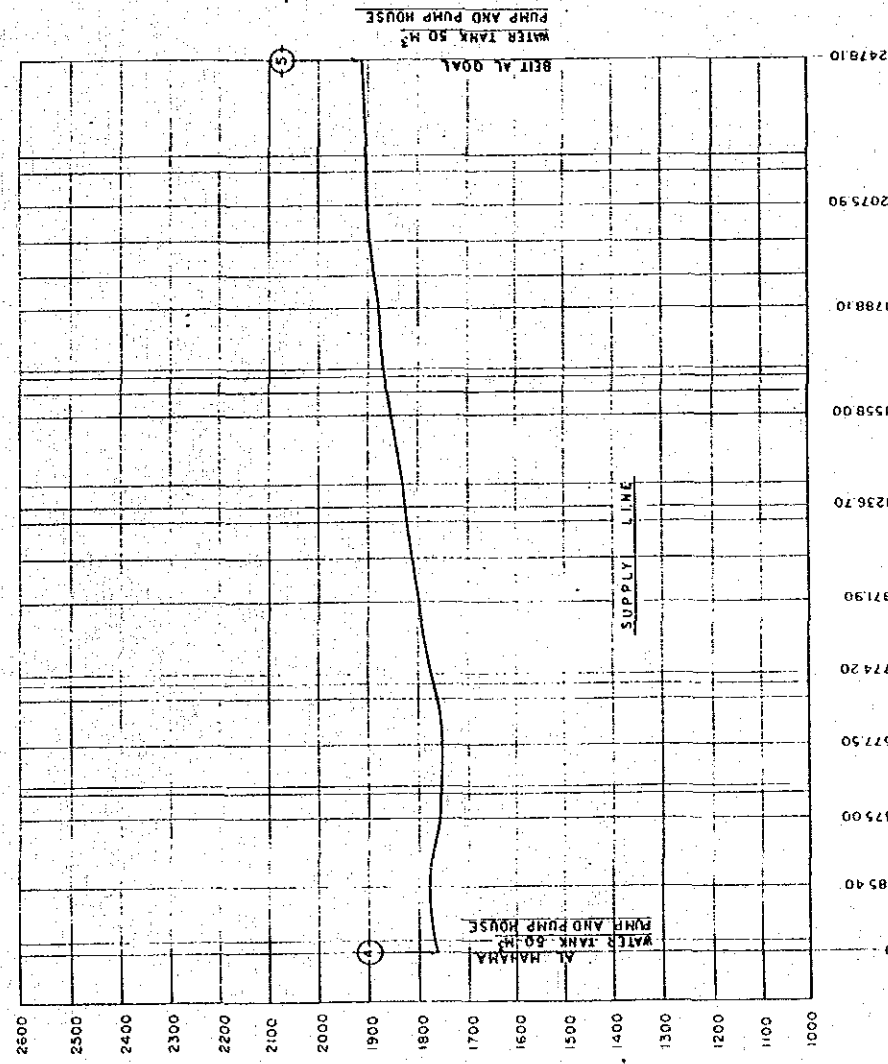
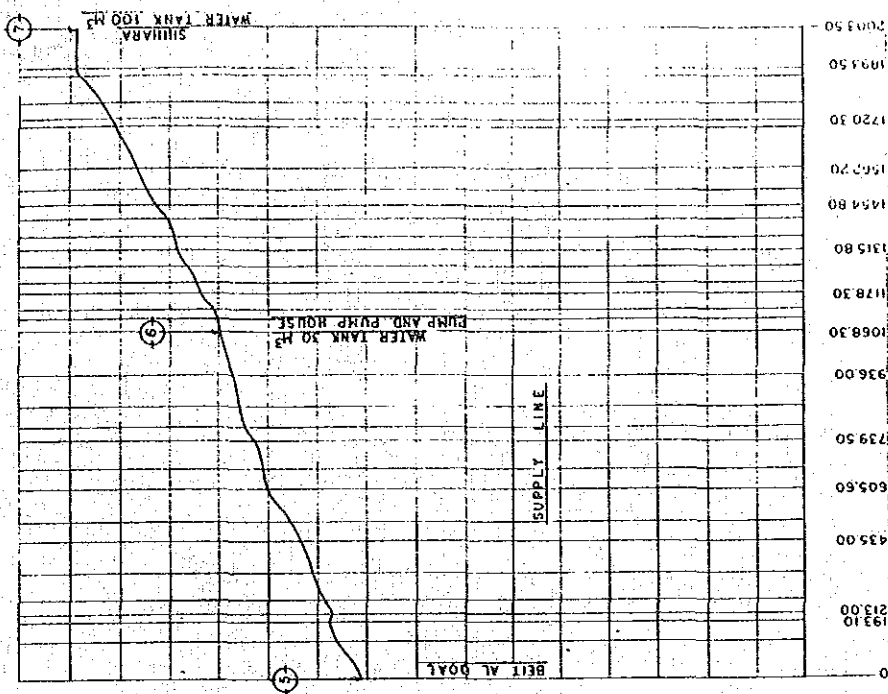
SUPPLY LINE 5' x 410 M





YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
SHIHARA : SITE PLAN	
DATE: 1981	SCALE: 1:25,000
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	





18



ADDABI



EXISTING FACILITIES
 DEEP WELL: 60 m x 1 DC
 DEEP WELL: 60 m x 1 DC
 DEEP WELL PUMP: 1
 PUMP HOUSE: 1 x 1 m

EXISTING DEEP WELL, NEW PUMP PUMP HOUSE AND NEW ELEVATED TANK 100 m³

EXISTING DEEP WELL PUMP WITH HOUSE AND NEW ELEVATED TANK 100 m³

PUBLIC FOUNTAIN WITH 2 TAPS

DISTRIBUTION NETWORK - 2

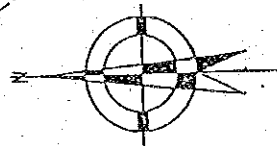
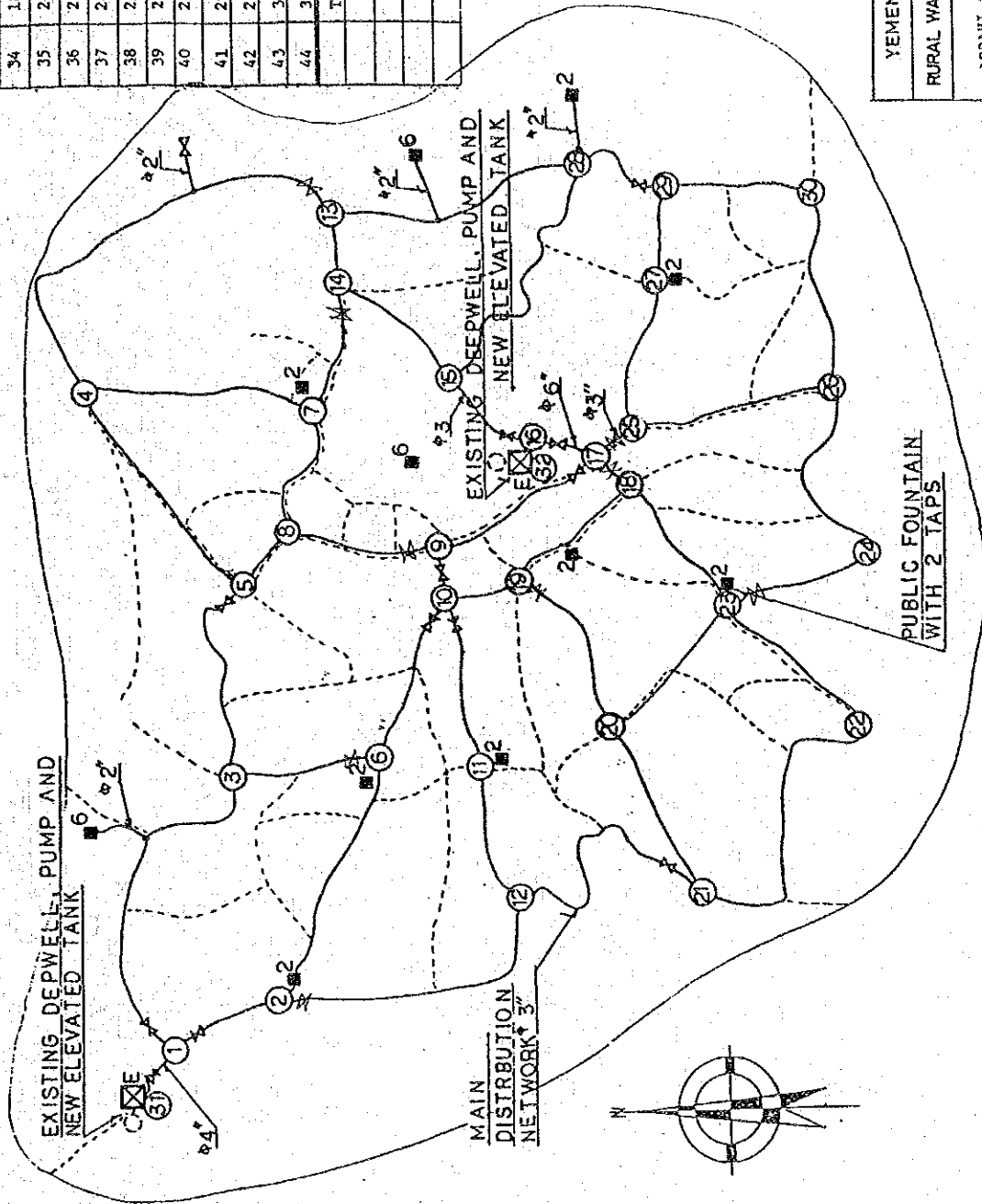
PUBLIC FOUNTAIN WITH 6 TAPS

MAIN DISTRIBUTION NETWORK - 3

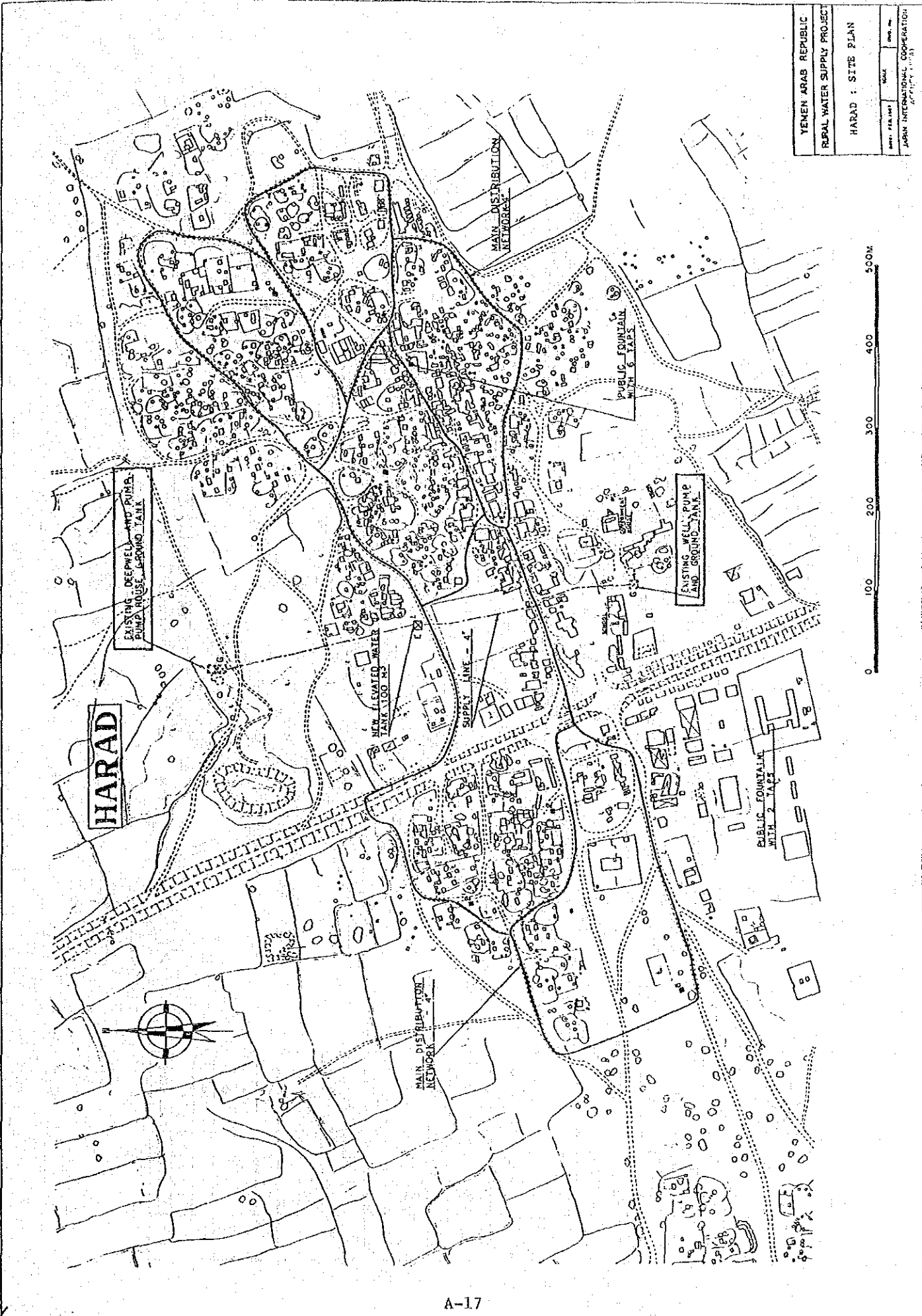


No.	SECTION	DISTANCE (m)
1	1 - 2	105
2	1 - 3	300
3	2 - 12	276
4	2 - 6	225
5	3 - 6	115
6	3 - 5	170
7	5 - 4	230
8	12 - 21	235
9	11 - 12	90
10	10 - 11	160
11	6 - 10	155
12	10 - 19	53
13	9 - 10	46
14	8 - 9	150
15	5 - 8	70
16	8 - 7	110
17	4 - 7	195
18	4 - 13	370
19	21 - 22	210
20	20 - 21	115
21	19 - 20	168
22	20 - 23	160
23	18 - 19	155
24	17 - 9	160
25	15 - 16	125
26	16 - 17	30
27	15 - 14	115
28	14 - 7	100
29	14 - 13	70
30	13 - 28	230
31	15 - 28	230
32	17 - 25	30
33	17 - 18	26

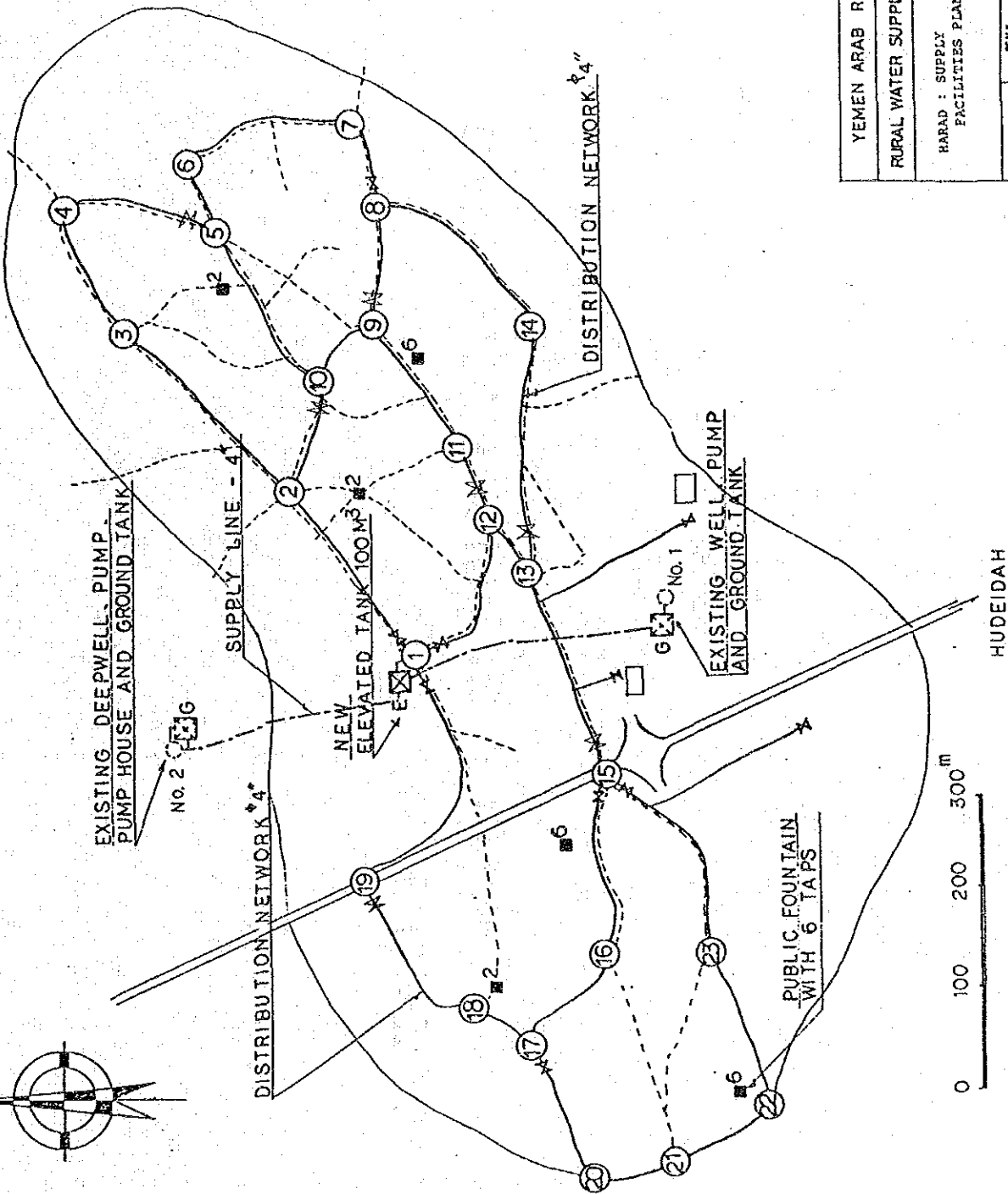
No.	SECTION	DISTANCE (m)
34	18 - 23	155
35	23 - 22	185
36	23 - 24	145
37	24 - 26	170
38	25 - 27	110
39	26 - 30	195
40	27 - 29	90
41	29 - 30	126
42	28 - 29	75
43	31 - 1	70
44	32 - 16	20
Total		6,320 (m)



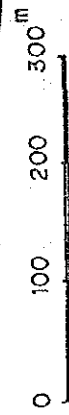
YEMEN ARAB REPUBLIC
 RURAL WATER SUPPLY PROJECT
 ADDAH : SUPPLY FACILITIES PLANNING
 DATE: FEB. 1987 SCALE: DWG. No.
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)



HARAD

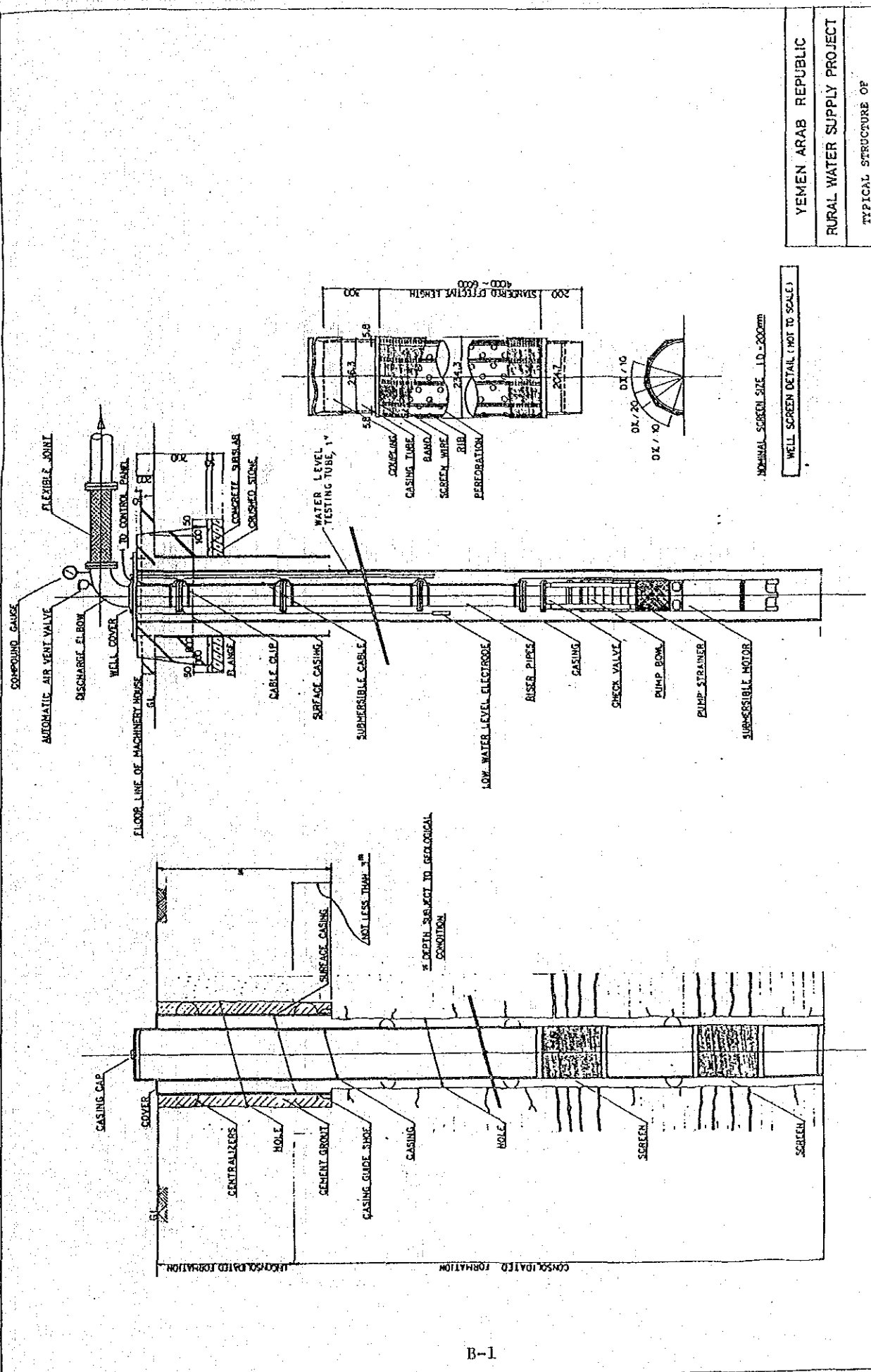


No.	SECTION	DISTANCE (m)
1	1 - 2	240
2	1 - 12	170
3	1 - 19	370
4	2 - 3	265
5	2 - 10	100
6	3 - 4	115
7	4 - 5	200
8	5 - 6	80
9	5 - 10	230
10	6 - 7	200
11	7 - 8	90
12	8 - 9	75
13	8 - 14	230
14	9 - 10	135
15	9 - 11	210
16	11 - 12	115
17	12 - 13	50
18	13 - 14	310
19	13 - 15	300
20	15 - 16	200
21	15 - 23	250
22	16 - 17	150
23	17 - 18	90
24	17 - 20	190
25	18 - 19	230
26	20 - 21	115
27	21 - 22	115
28	22 - 23	210
	Total	5,035 m



YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
HARAD : SUPPLY FACILITIES PLANNING	
DATE: FEB. 1977	SCALE
	DWG. No.
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

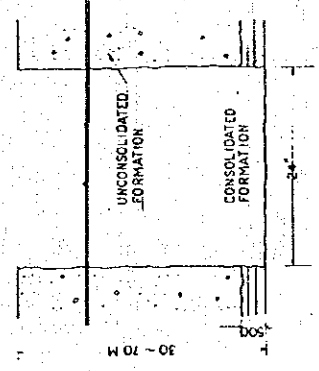
**B. DETAILS OF
WATER SUPPLY FACILITIES**



YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
TYPICAL STRUCTURE OF WELL : AL RAJAM	
DATE: FEB 1987	SCALE
DWG. No.	JABRI INTERNATIONAL COOPERATION AGENCY (JICA)

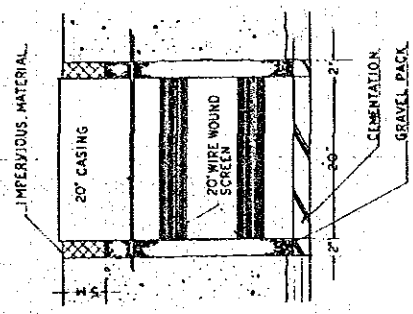
STEP 1

DRILL 24" HOLE THRU
UPPERMOST UNCONSOLIDATED
FORMATIONS



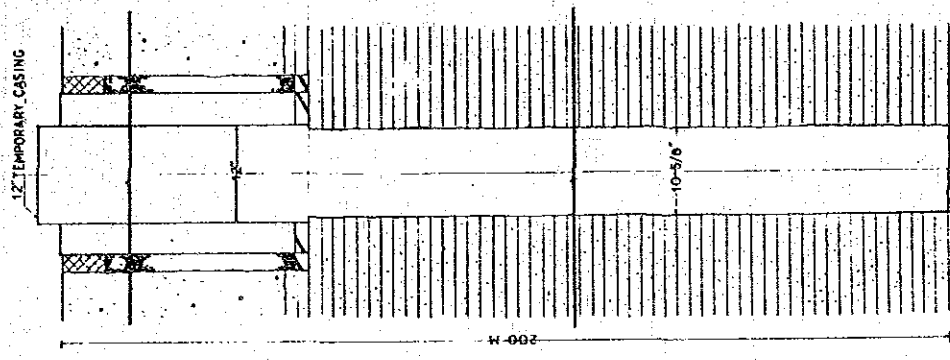
STEP 2

INSTALL 20" CASING
AND SCREENS WITH
GRAVEL PACK



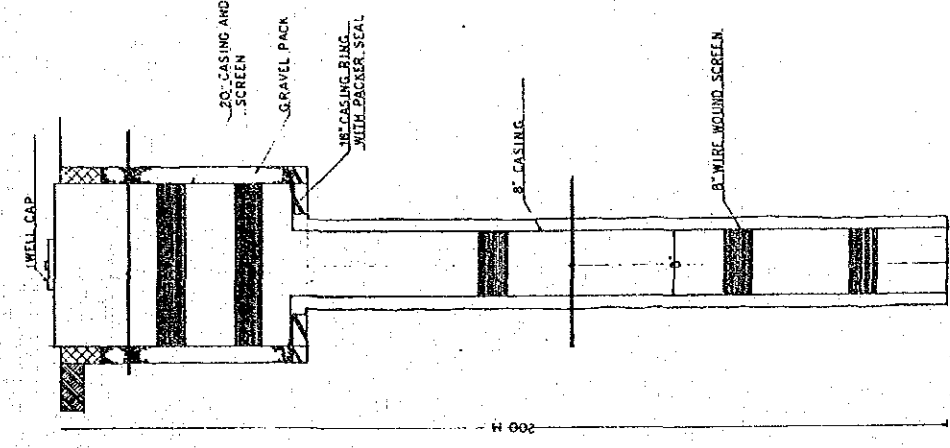
STEP 3

RESUME DRILLING 10-5/8"
HOLE UP TO 200 M THRU
CONSOLIDATED FORMATIONS

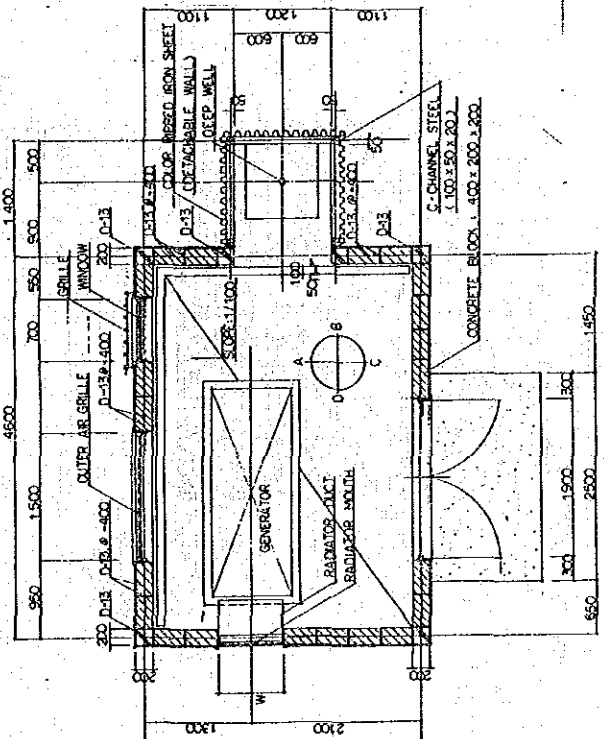
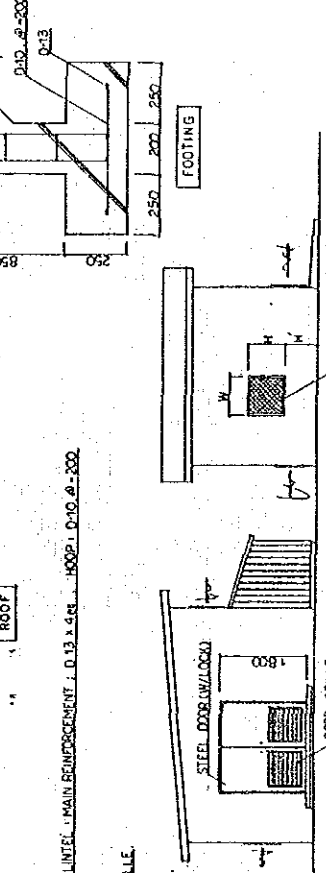
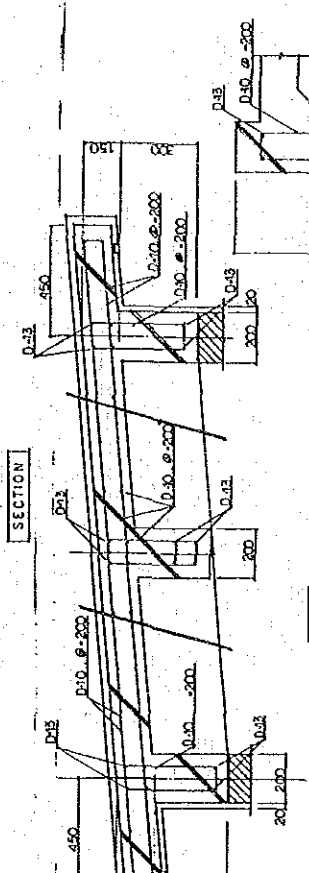
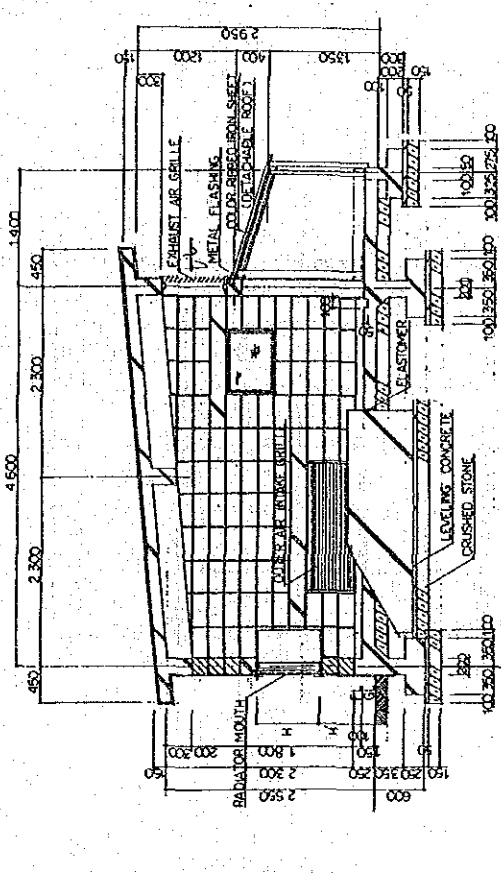


STEP 4

COMPLETE THE WELL
INSTALLING 8" CASING
AND SCREENS



YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
TYPICAL STRUCTURE OF	
WELL : SHIBARA AND	
WADI ASFAN	
DATE: FEB 1971	SCALE:
PROJECT NO.	DRAWING NO.
JABH INTERNATIONAL COOPERATION AGENCY (JICA)	

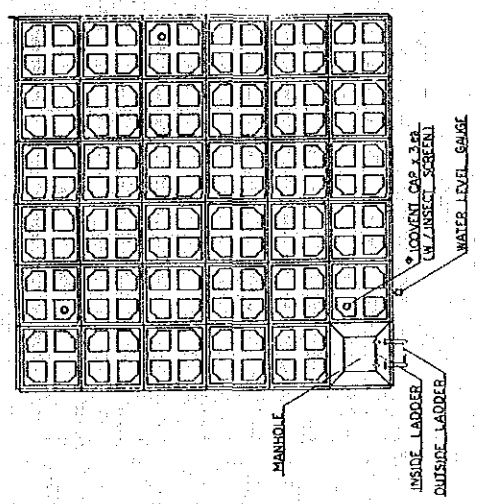
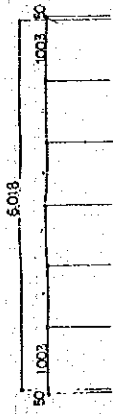


PLAN

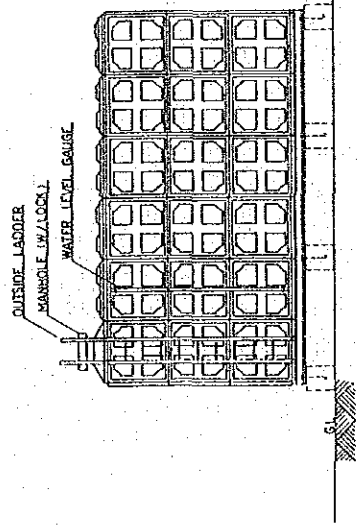
OUTER AIR INTAKE GRILLE : 1.500 x 500 (W. INSECT SCREEN)
 DOOR GRILLE : 700 x 700 x 2 sp. L. d110
 EXHAUST AIR GRILLE : 1.500 x 700 C. d110
 RADIATOR MOUTH : STEEL NET, W. P. AND W. SHALL BE FITTED IN THE RADIATOR OF GENERATORS ENGINE
 RADIATOR DUCT : SAME SIZE AS RADIATOR MOUTH
 WINDOW (FIXED FITTINGS) : WIRED GLASS 6.61 (W/ GRILLE) 700 x 500
 ROOF : WATERPROOF MORTAR FINISH 30 L.
 EXTERIOR : MORTAR BROOM FINISH 20 L.

LIMIT. MAIN REINFORCEMENT : D.13 x 400 - HOOP : D.10 @ 200

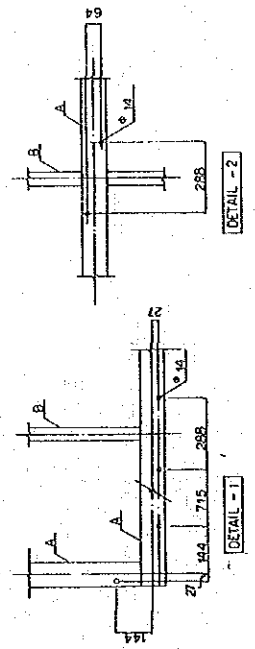
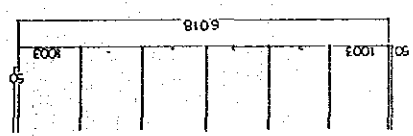
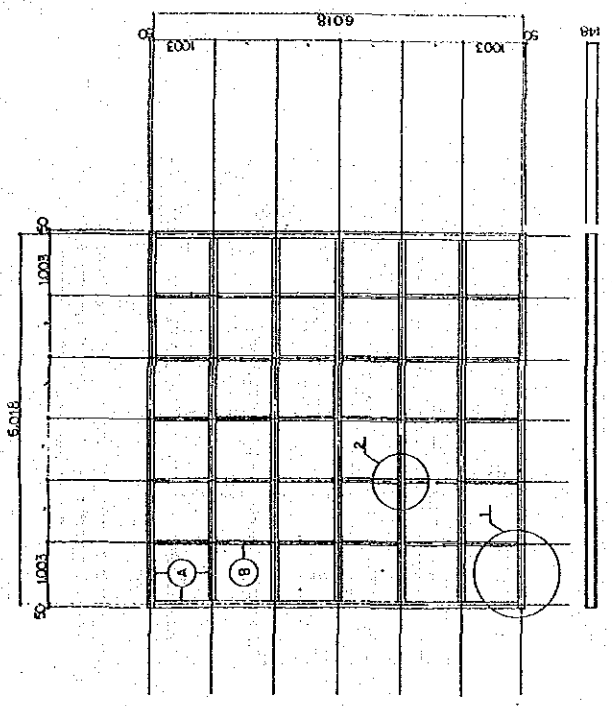
MACHINERY HOUSE : TYPE - A



PLAN



SIDE VIEW



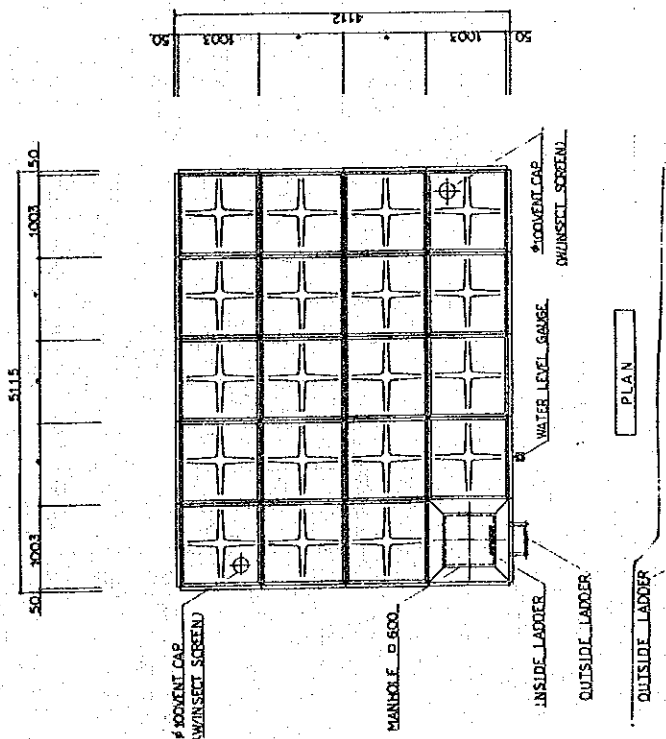
A.H. = 148 x 100 x 5 x 9 B.H. = 100 x 50 x 5 x 7

DETAIL OF CHANNEL BASE

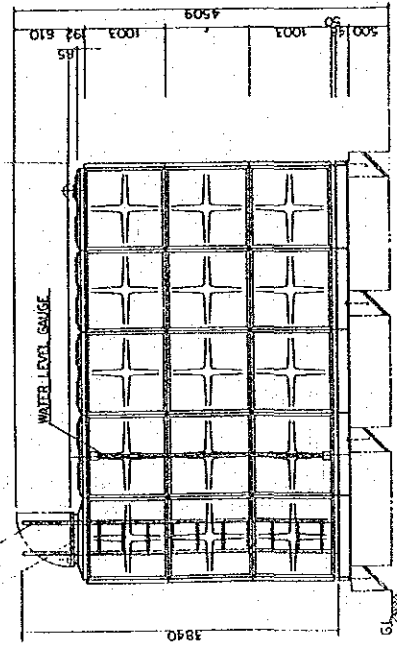
TYPE OF TANK : SITE FABRICATED TANK
EFFECTIVE CAPACITY : 100.0 m³

DETAIL OF SERVICE TANK (100 m³)

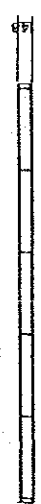
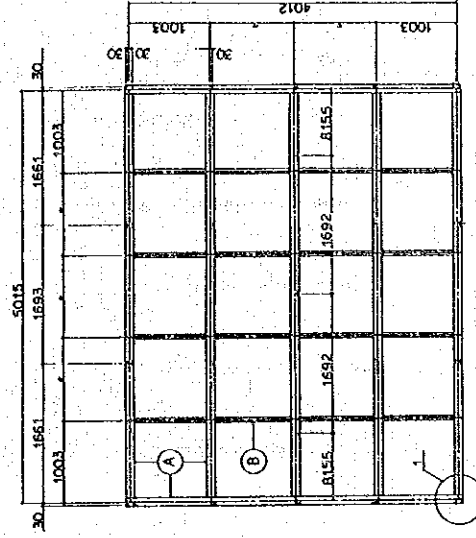
YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
WATER TANK DETAILS :	
100m ³ GROUND TANK	
DATE: 22-1-1981	SCALE: 1/20
DRAWN BY: JICA	
CHECKED BY: JICA	



PLAN



SIDE VIEW



DETAIL - 1

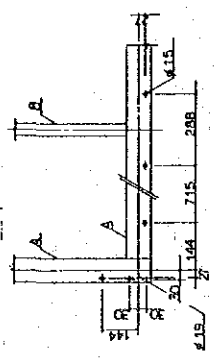
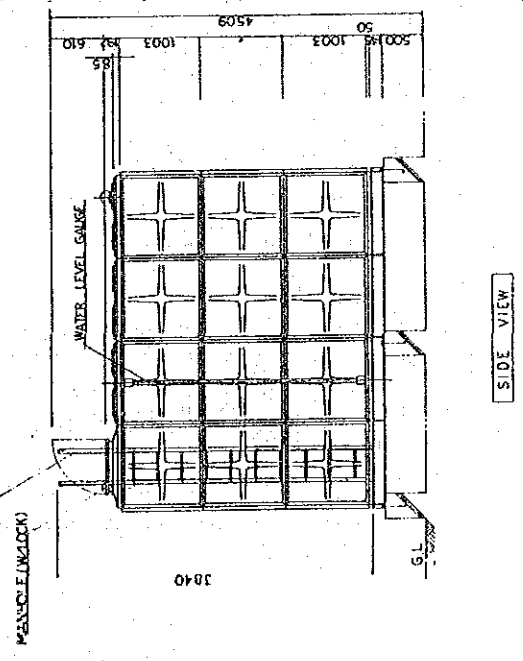
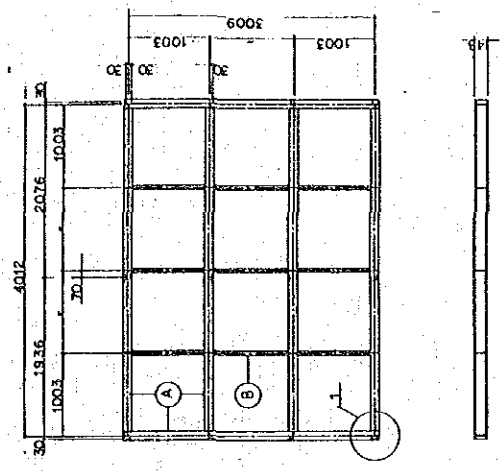
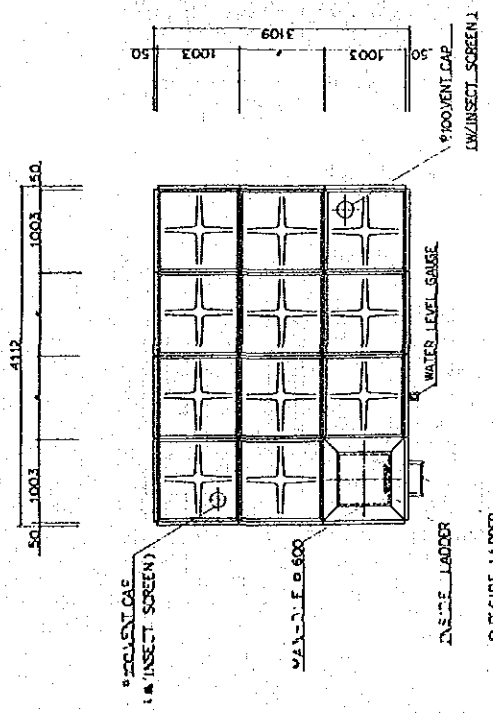
A.H. - 14 02 1002859 ... B.H. - 1001501557

DETAIL OF CHANNEL BASE

TYPE OF TANK: STEEL PREFABRICATED TANK
EFFECTIVE CAPACITY: 500 m³

DETAIL OF SERVICE TANK (50 m³)

YEMEN ARAB REPUBLIC		DATE	DRAWING NO.
RURAL WATER SUPPLY PROJECT		SCALE	REV. NO.
WATER TANK DETAILS :		JAMA INTERNATIONAL CORPORATION AGENCY (YAG)	
50 M ³ GROUND TANK			



A.H-148 X 100 X 6.9 S.H-100 X 50 X 5.7

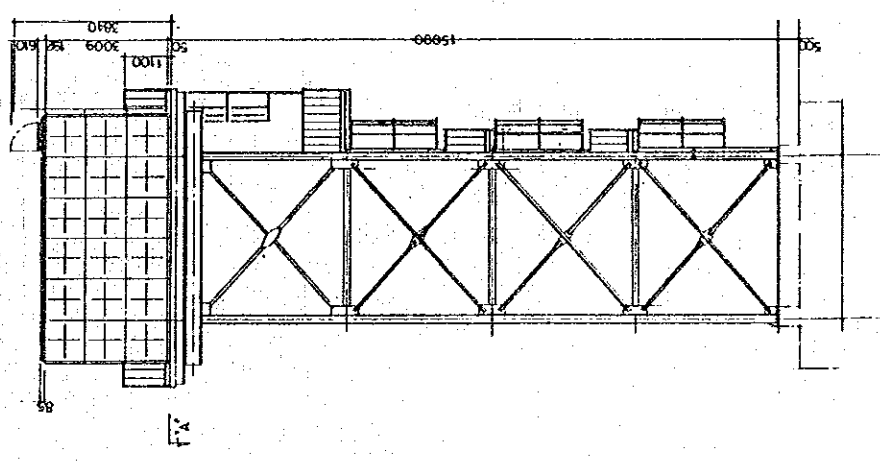
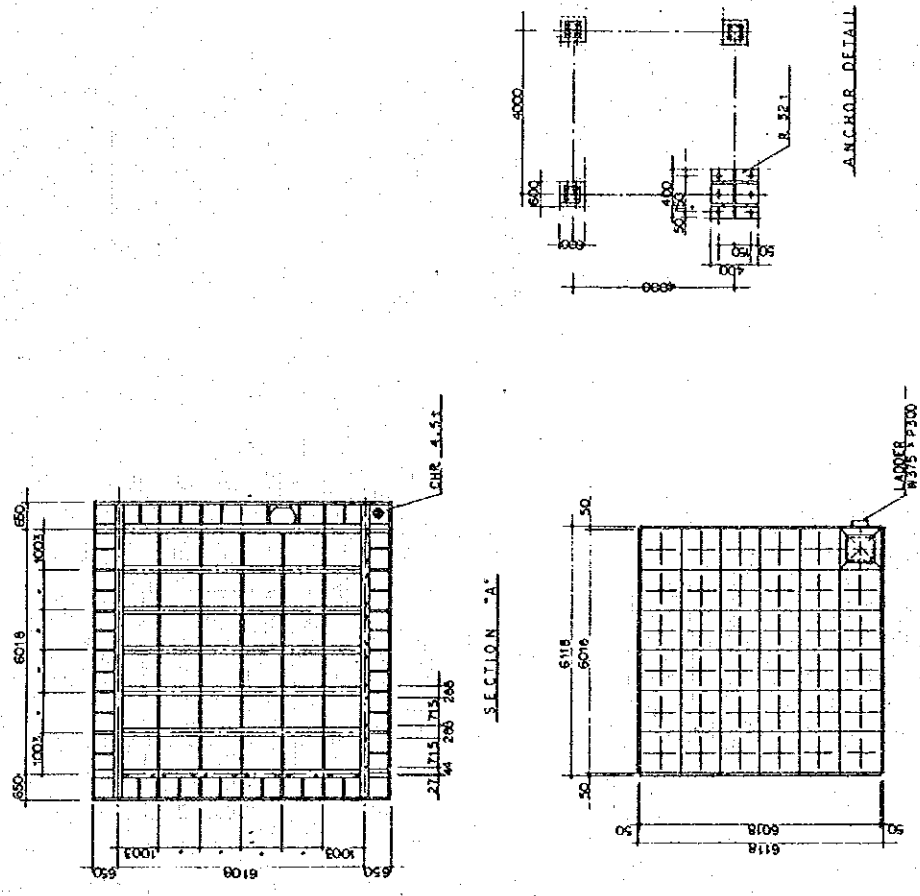
DETAIL OF CHANNEL BASE

TYPE OF TANK : STEEL PREFABRICATED TANK
EFFECTIVE CAPACITY : 30.0 M³

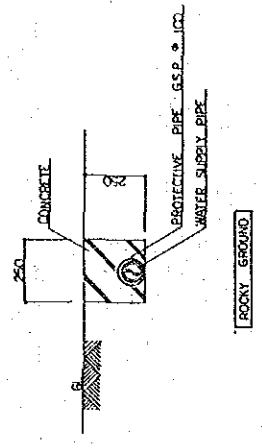
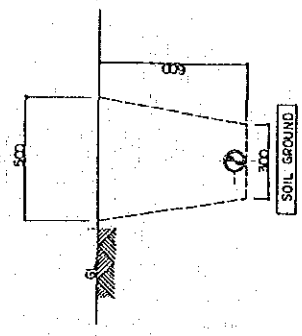
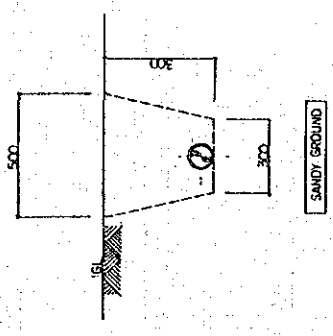
DETAIL OF SERVICE TANK (30 m³)

YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
WATER TANK DETAILS : 30 M ³ GROUND TANK	
DATE: 1984.10.18	SCALE: 1/20
DRAWN BY: M. ALI	
CHECKED BY: M. ALI	
APPROVED BY: M. ALI	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

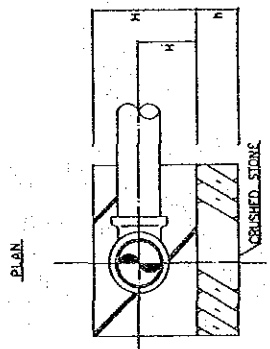
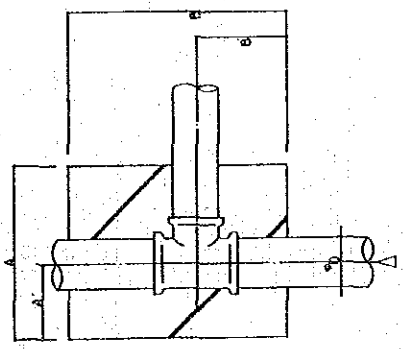
YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
WATER TANK DETAILS :	
100 M ³ ELEVATED TANK	
DATE: FEB. 1977	SCALE:
JAWN INTERNATIONAL COOPERATION AGENCY (JICA)	DRW. NO.:



B-7



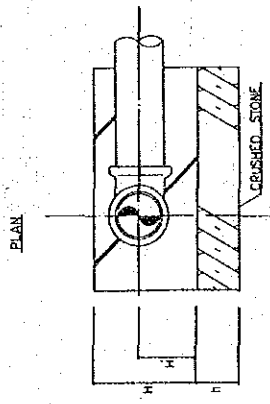
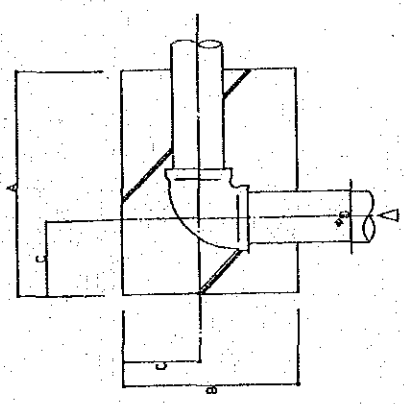
UNDERGROUND PIPE - LINE



SECTION

φD	A	A'	B	B'	H	H'	h
100	400	200	500	200	310	200	150
150	370	190	460	180	290	190	150
200	360	190	440	170	280	190	150
250	340	180	420	160	270	180	100

TEE



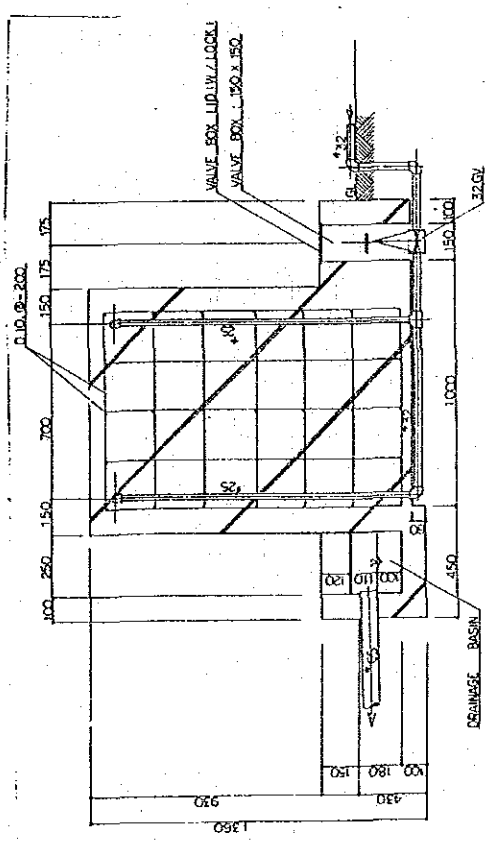
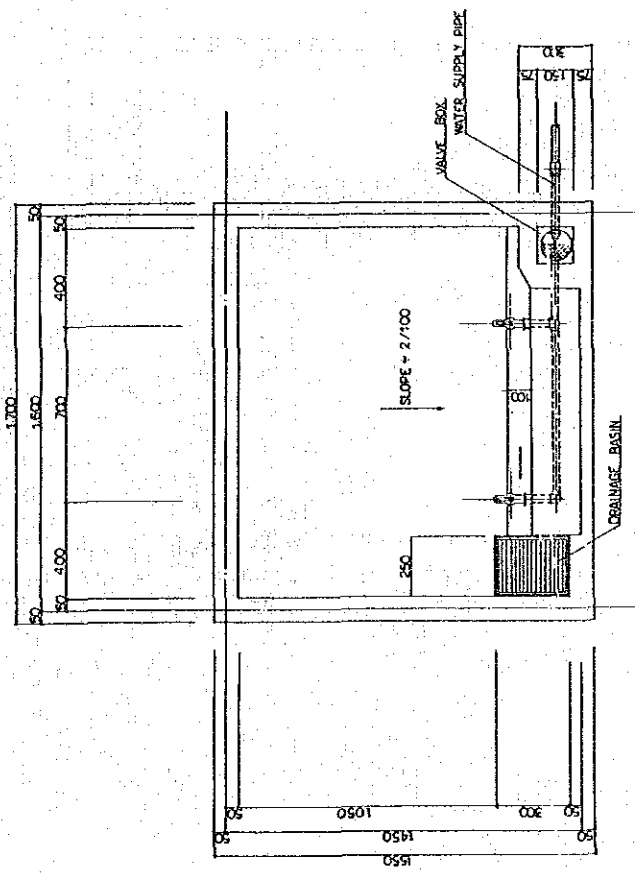
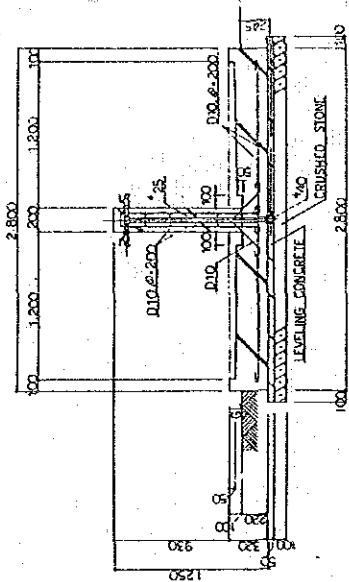
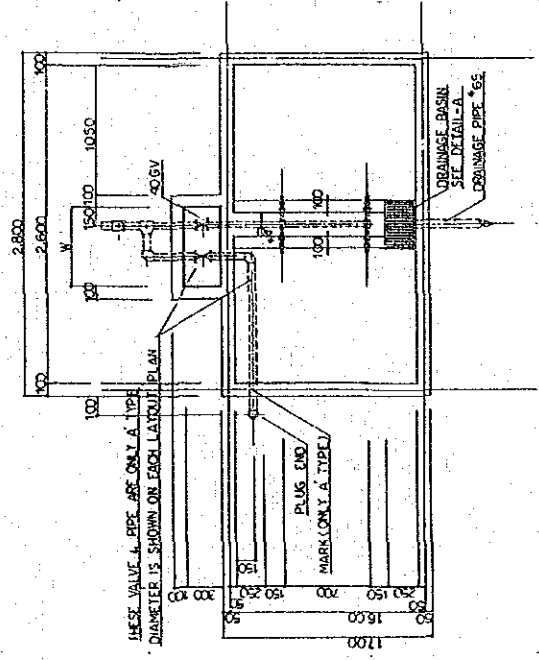
SECTION

φD	A	B	C	H	H'	h
100	500	400	200	310	200	150
150	470	370	190	290	190	150
200	460	360	190	280	190	150
250	440	340	180	270	180	100

ELBOW

TYPICAL CONCRETE THRUST BLOCK

DETAIL OF PUBLIC FAUCET

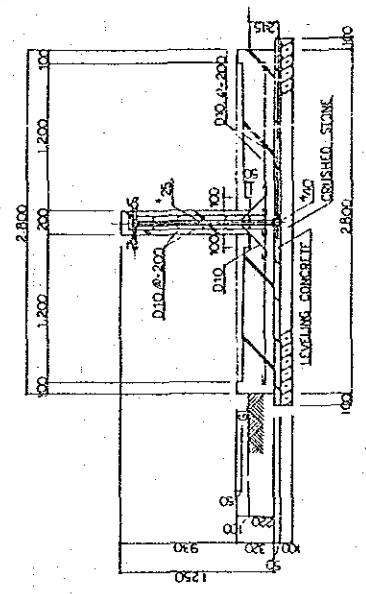
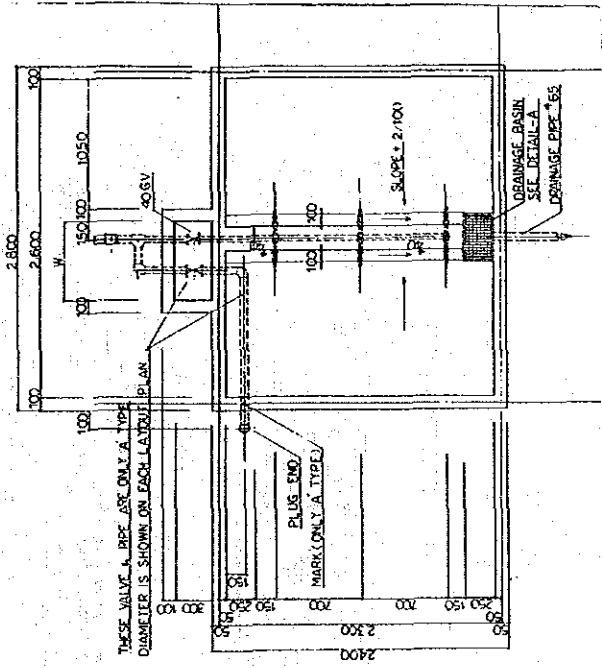


YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
PUBLIC FOUNTAIN (1)	
DATE: FEB 1987	SCALE: 1:5
JAWAH INTERNATIONAL COOPERATION AGENCY (JICA)	

A - Y A F

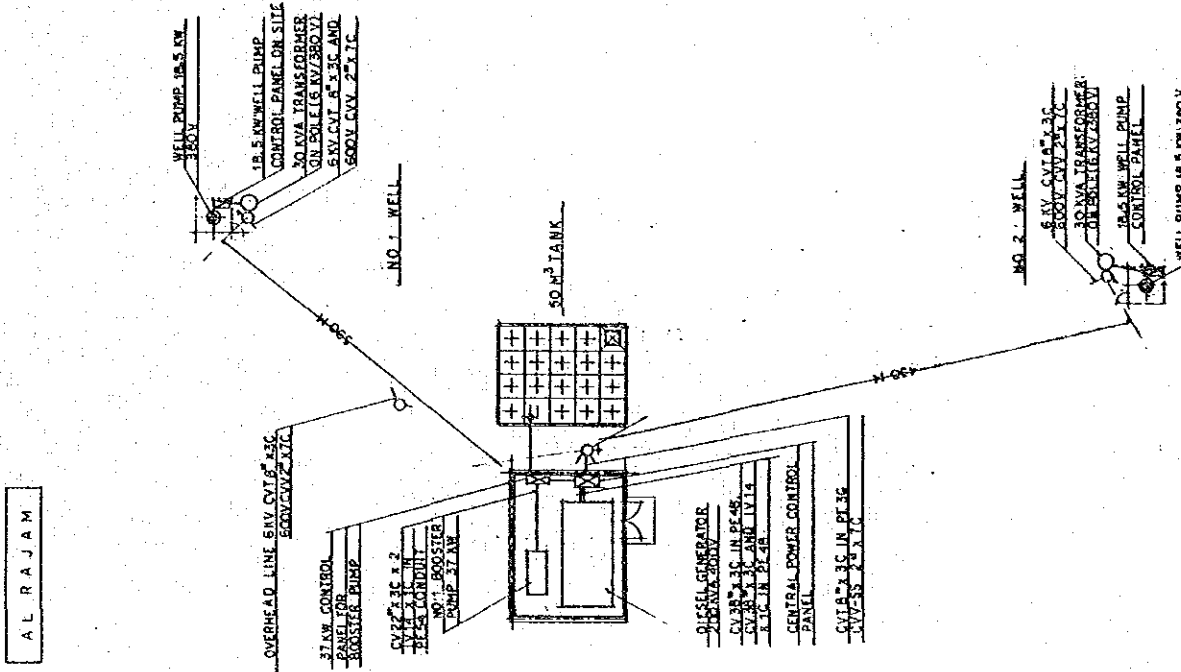
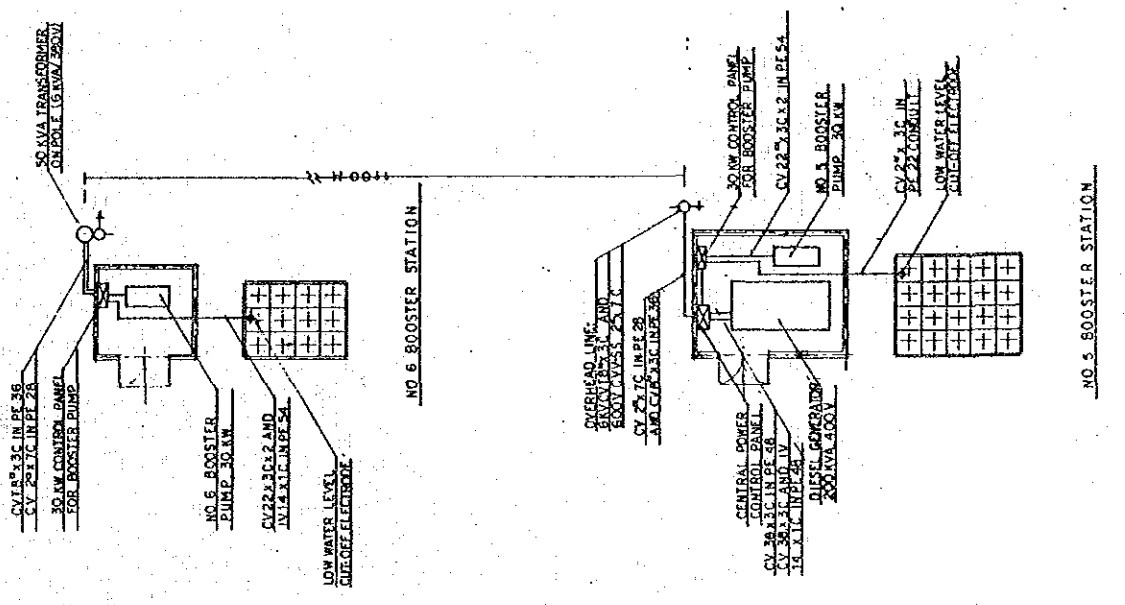
2 - T A P

DETAIL OF PUBLIC FAUCET



AL RAJAM

SHIHARA



YEMEN ARAB REPUBLIC	
RURAL WATER SUPPLY PROJECT	
ELECTRIC WORKS	
DATE	SCALE
NO. 107	1:100
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

