

x. List of Collected Data and Information

- 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-Year Plan
- (1984) : Statistical Year book
- (1986) : Population Report (in arabic)
- Dirk C. Van Enk (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,
Desitin Criteria for Rural Water Supplies
- MPW (1984) : Rural Water Supply Project,
Deepwell Drilling Report
- RWSO, MPW : Summary of the Project
- RWSO, MPW : Project Activity Report and Design Transmittal for
the Project Site
- World Bank (1986) : World Development Report
- YAR : Republican Decree No.5 for 1970
in relation to the Labour Ordinance
- Survey Authority : The Topographical 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 |
| A | LEGEND | 0 - 3 | B | DETAILS OF WATER SUPPLY FACILITIES | |
| | 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 ZAKIRA : 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 | |
| | BLOCK (1) | A - 10 | | : 30 m3 GROUND TANK | B - 6 |
| | : PROFILE (1) | A - 11 | | WATER TANK DETAILS | |
| | : PROFILE (2) | A - 12 | | : 100 m3 ELEVATED TANK | B - 7 |
| | SHIHARA : SITE PLAN | A - 13 | | PLUMBING WORK DETAILS | B - 8 |
| | : PROFILE (1) | A - 14 | | PUBLIC FOUNTAIN (1) | B - 9 |
| : PROFILE (2) | A - 15 | | PUBLIC FOUNTAIN (2) | B - 10 | |
| ADDAHI : SITE PLAN | A - 16 | | ELECTRIC WORKS | B - 11 | |
| : SUPPLY FACILITIES PLANNING | | | | | |

YEMEN ARAB REPUBLIC

RURAL WATER SUPPLY PROJECT

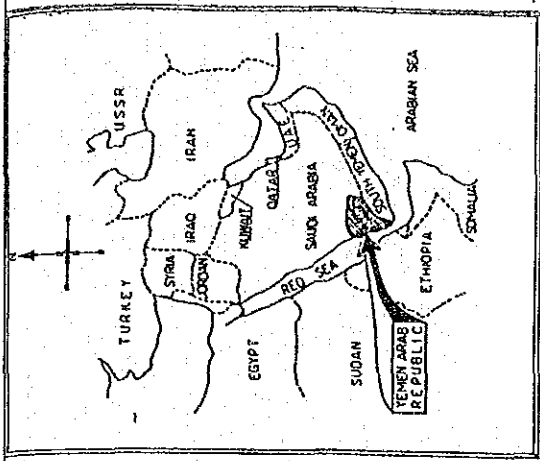
LIST OF DRAWINGS

DATE: FEB 1987

SCALE

DWG. No.

JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)



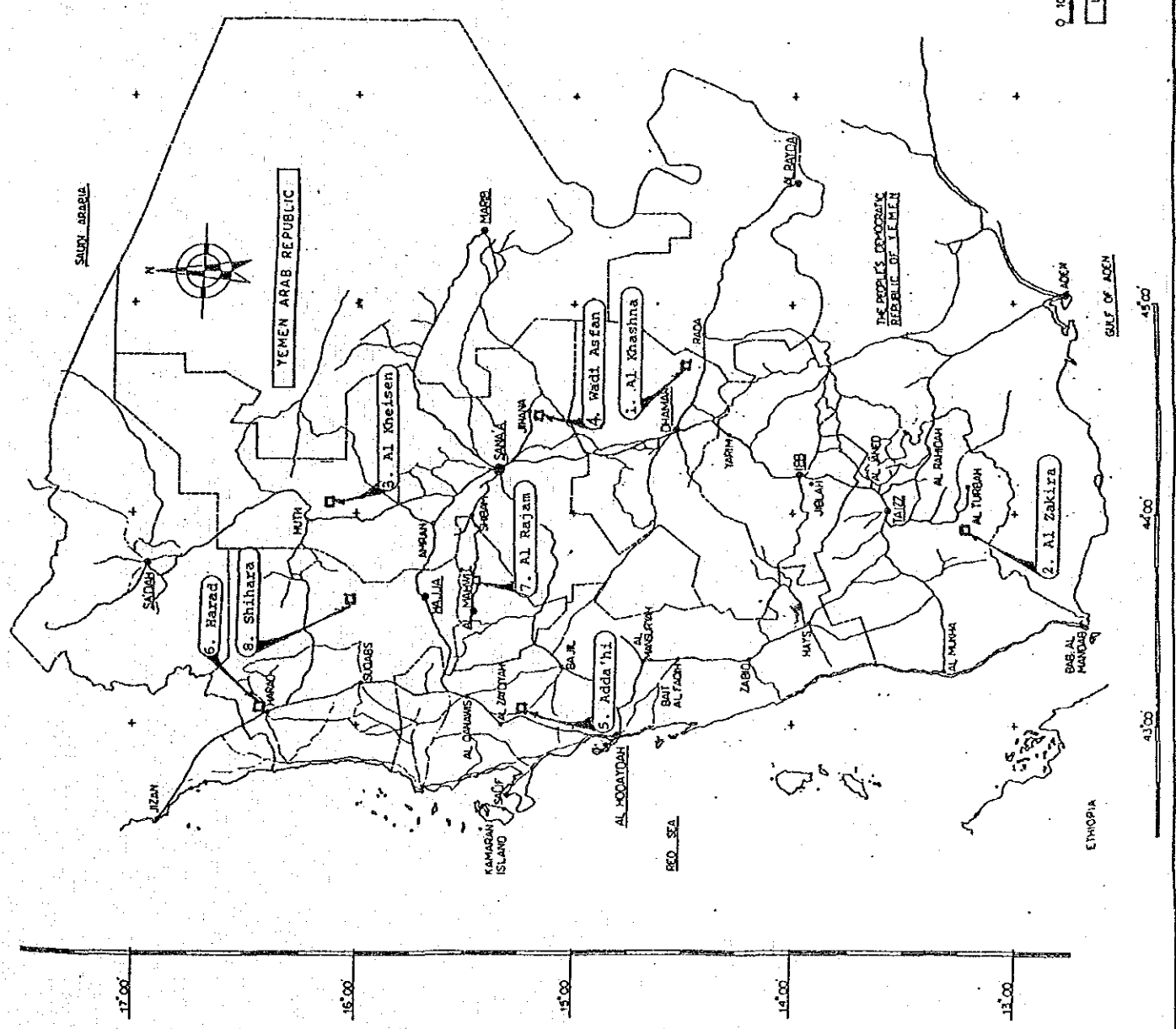
| PROJECT PHASE | PROJECT No. | PROJECT SITE | GOVERNORATE |
|---------------|-------------|--------------|-------------|
| I | 1 | Al Khashna | DHAMAR |
| I | 2 | Al Zakira | TAIZZ |
| I | 3 | Al Kheisen | SANA'A |
| II | 4 | Wadi Asfan | SANA'A |
| II | 5 | Adda'hi | HODAYDAH |
| II | 6 | Harad | HAJJA |
| 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: 1:100,000 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 | 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

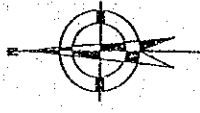
LEGEND

DATE: FEB. 1981

SCALE

DWG. No.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

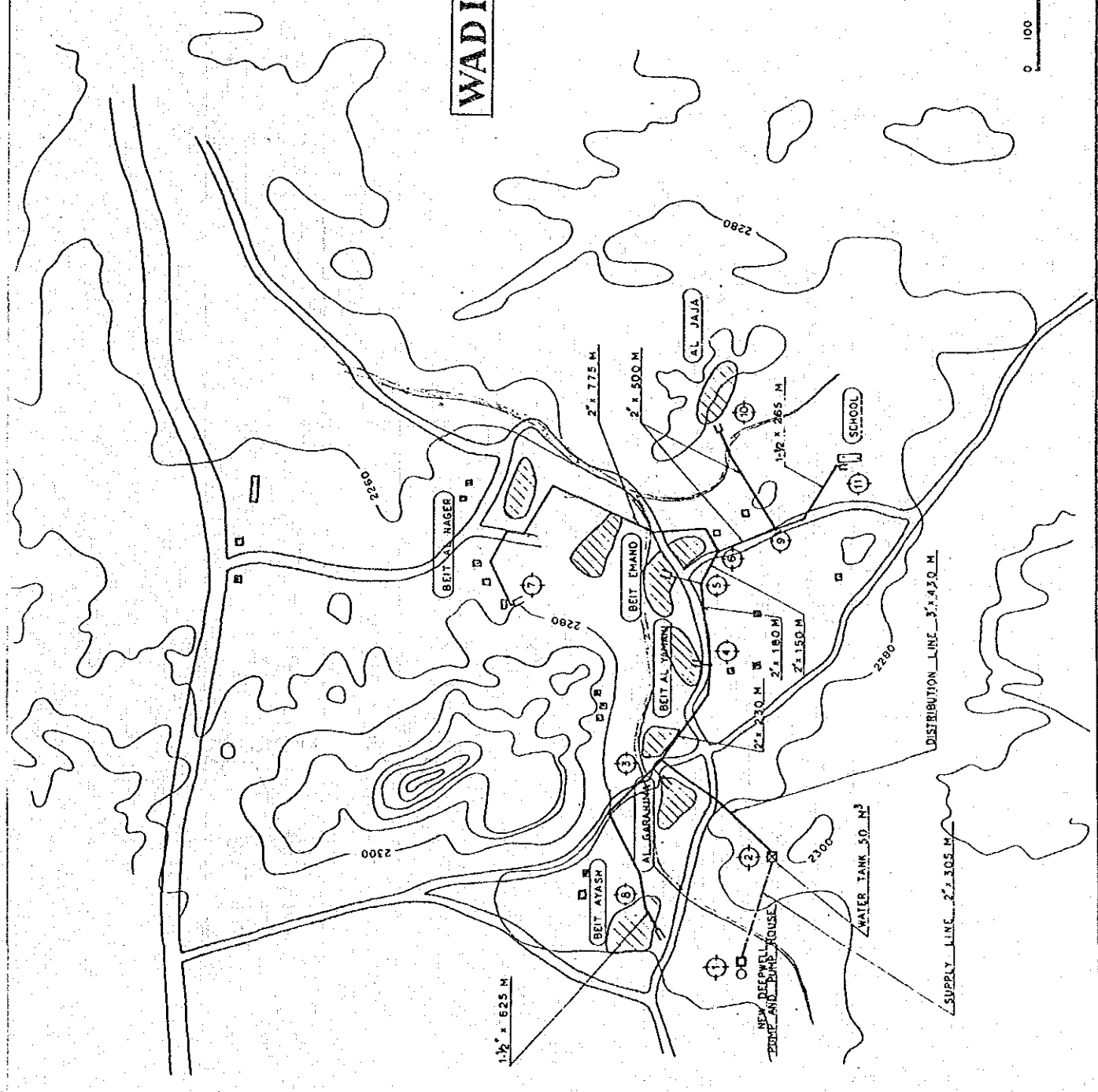
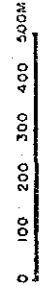


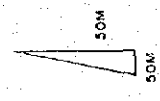
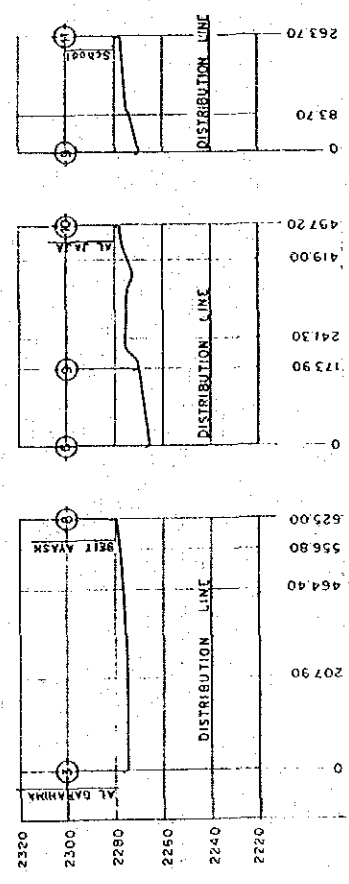
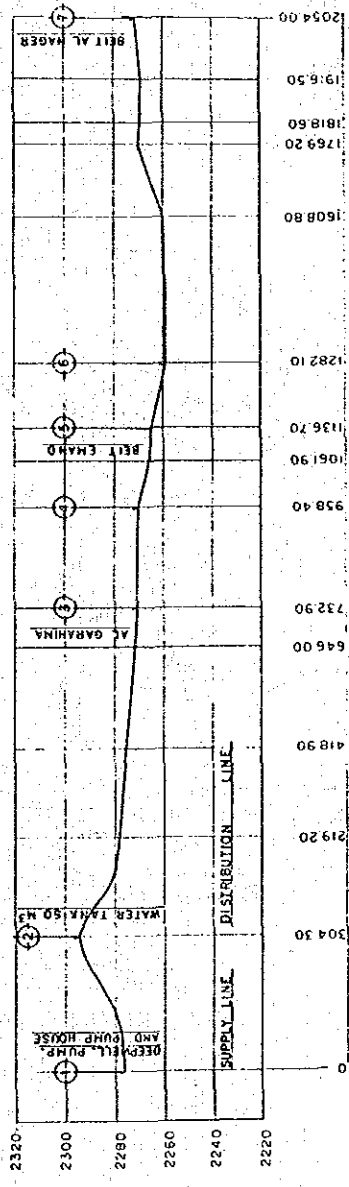
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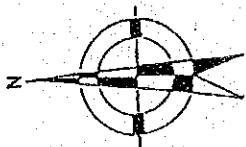
YEMEN ARAB REPUBLIC
 RURAL WATER SUPPLY PROJECT
 WADI ASFAN : SITE PLAN

| | | |
|------|-------|----------|
| DATE | SCALE | DWG. NO. |
| | | |

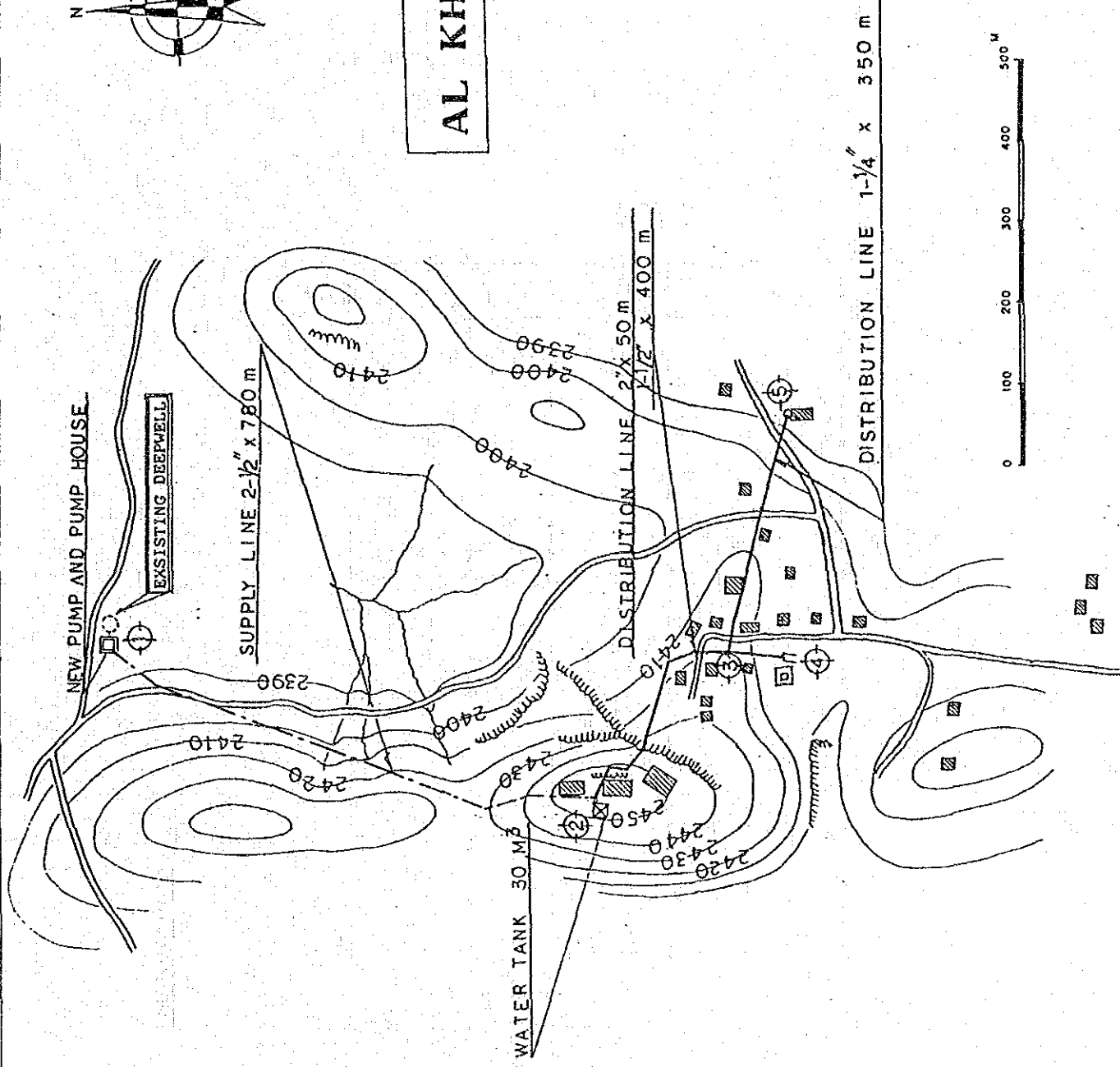
JAWN INTERNATIONAL COOPERATION AGENCY (JICA)







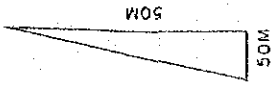
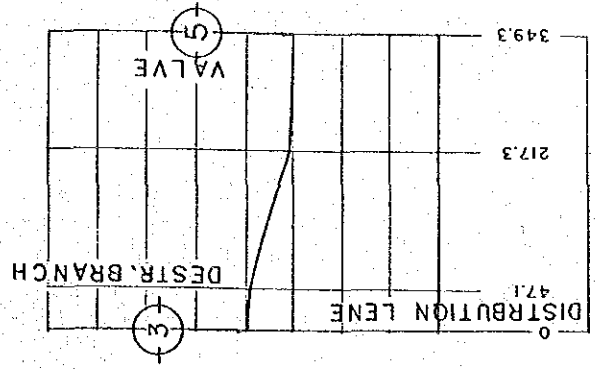
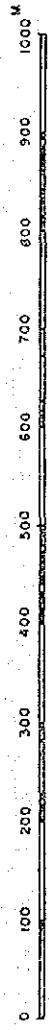
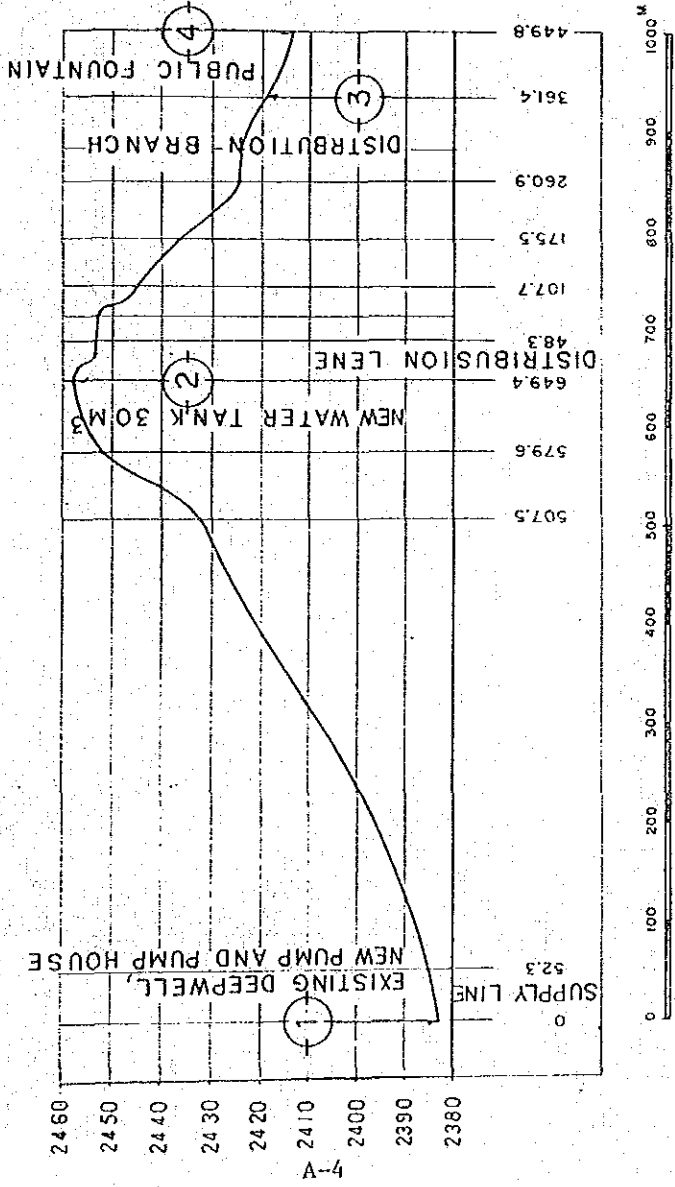
AL KHASHNA



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

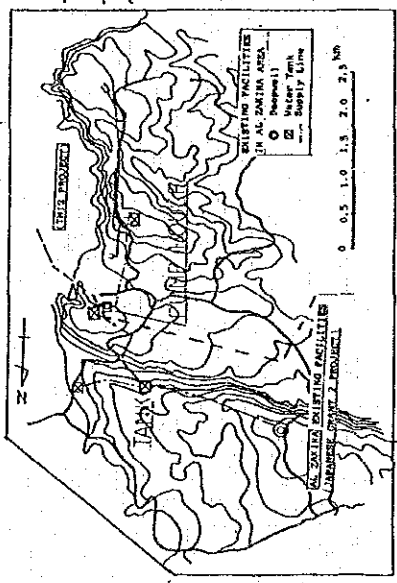
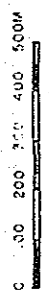
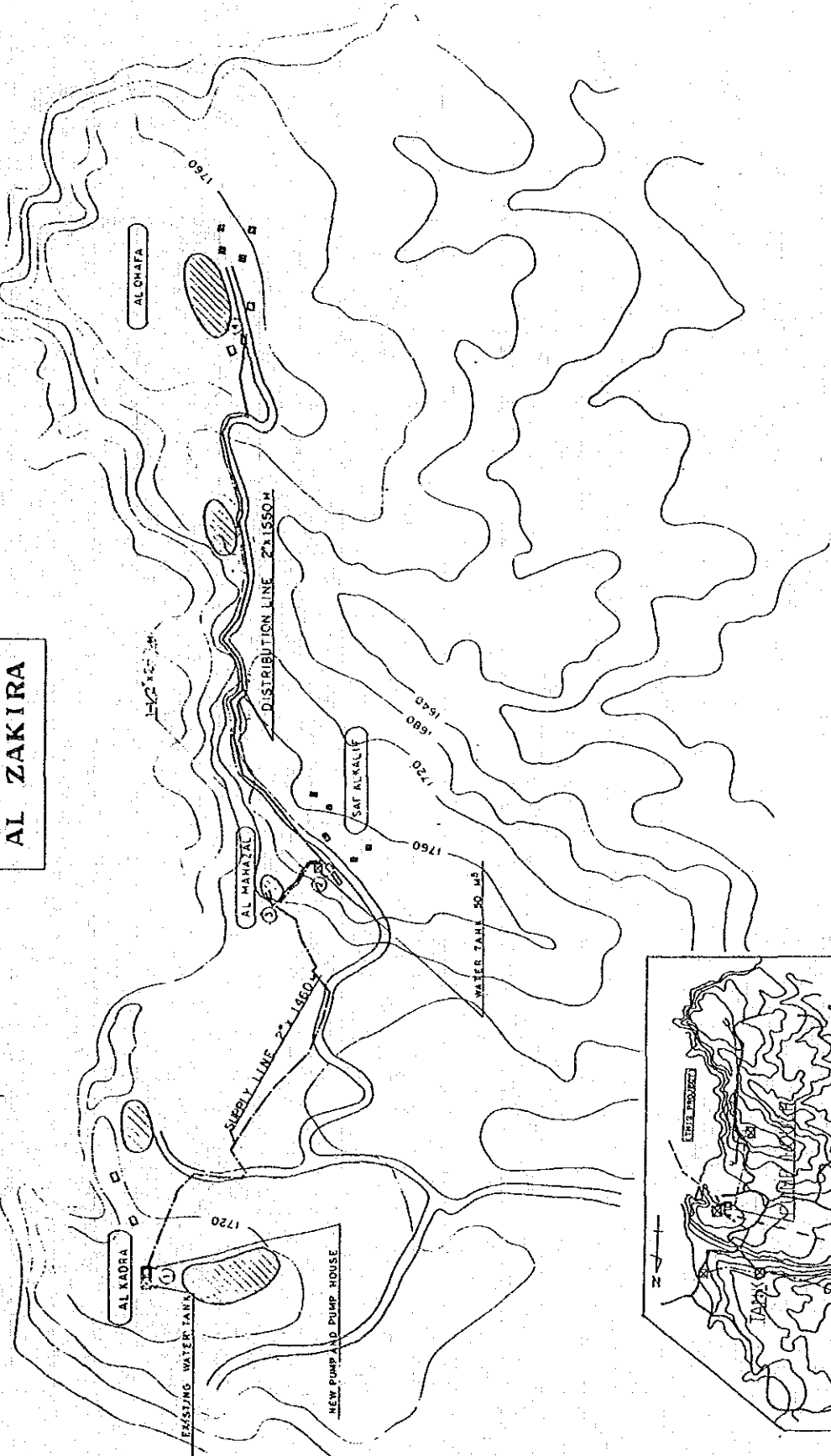


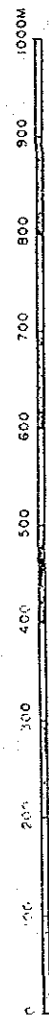
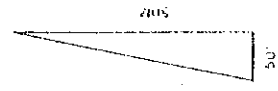
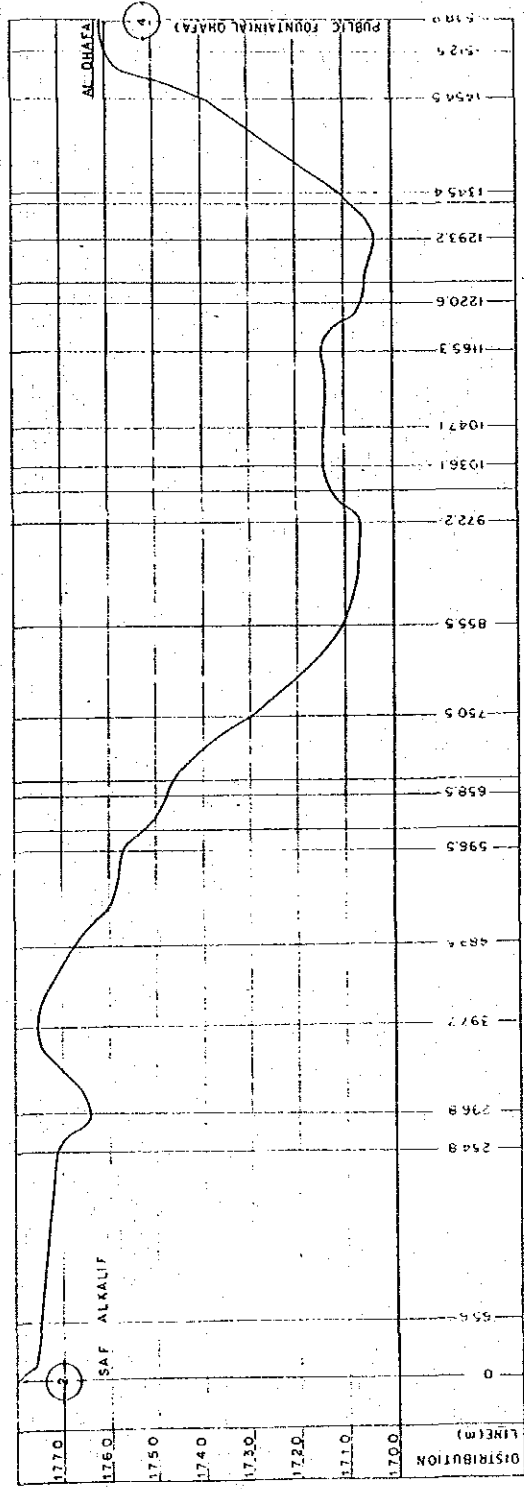
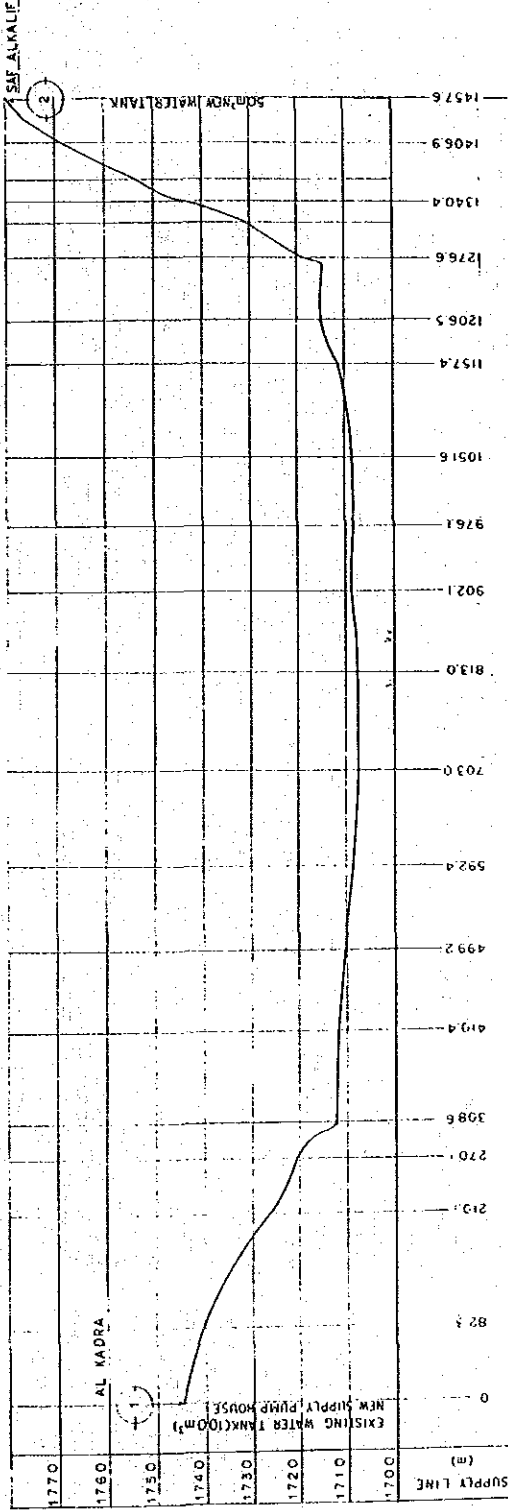
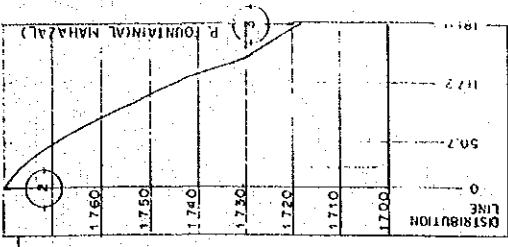
AL-KHASHNA



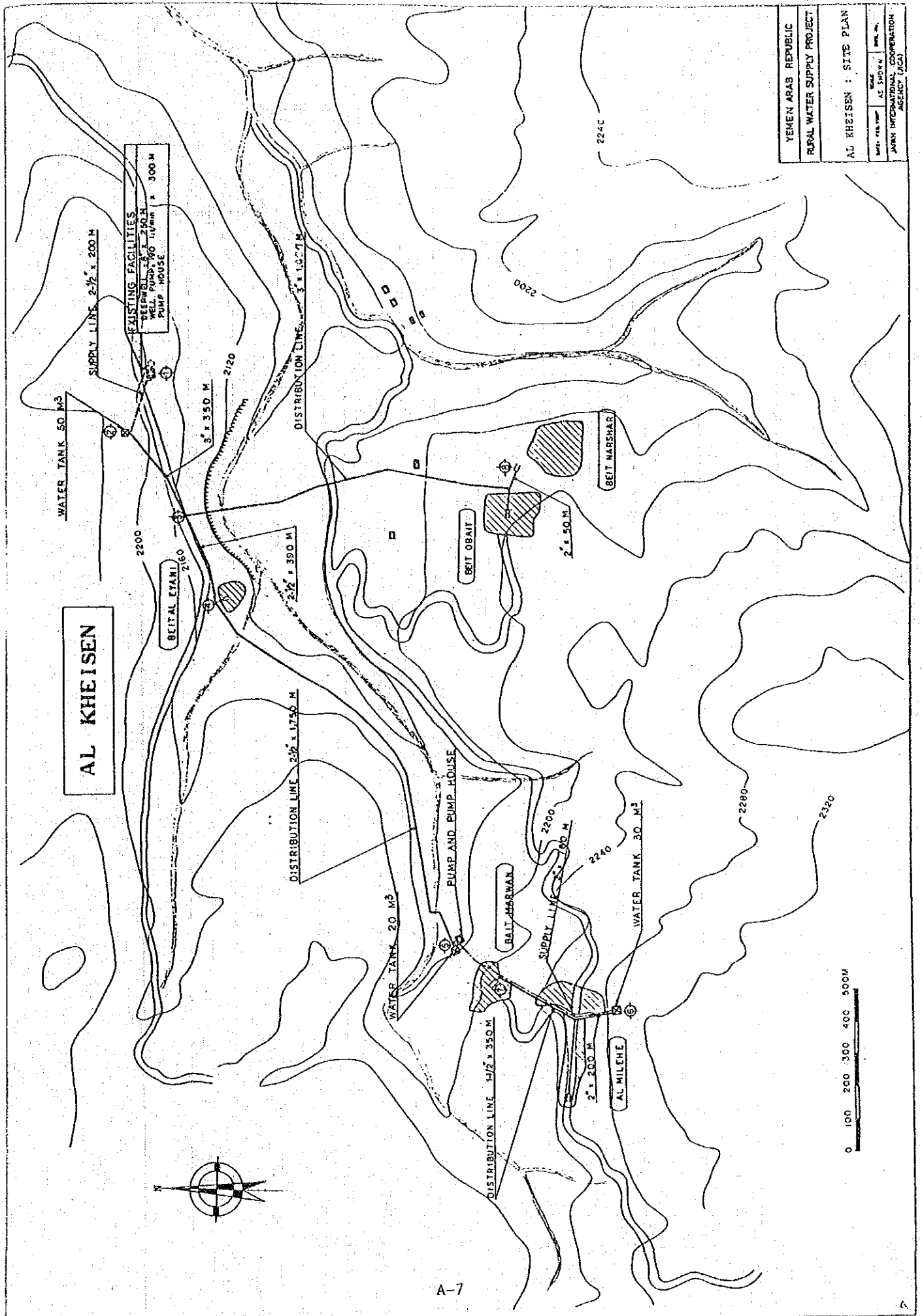
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| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| AL KHASHNA : PROFILE | |
| DATE: FEB. 1987 | SCALE |
| DWG. NO. | |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | |

AL ZAKIRA



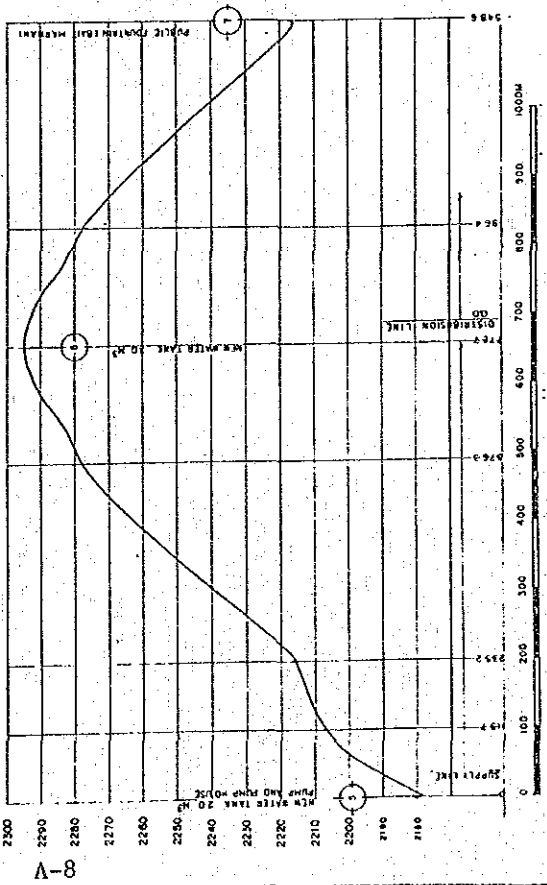
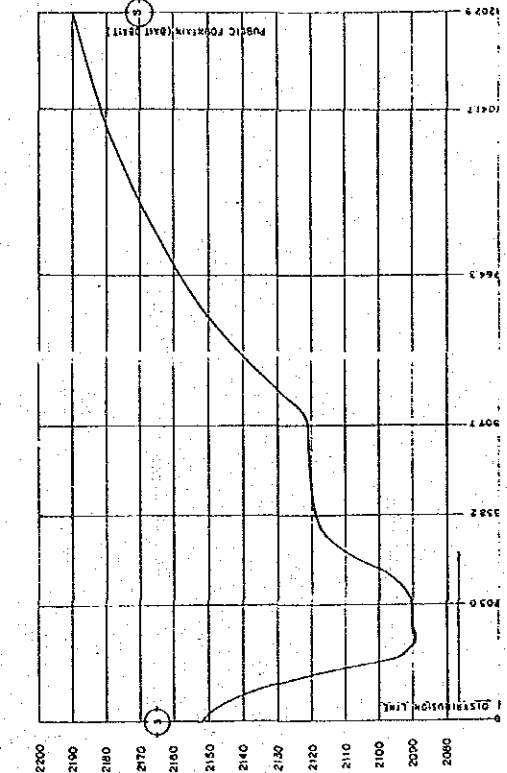
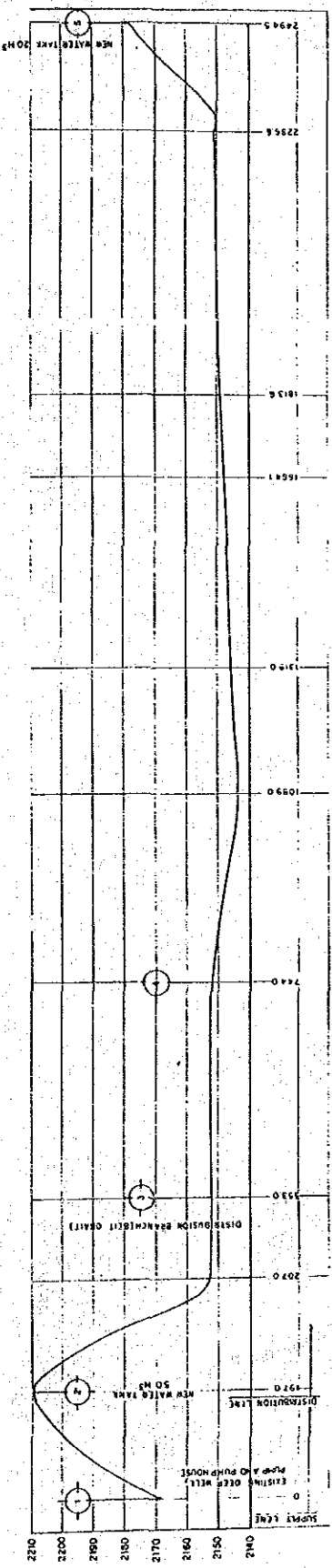
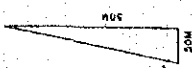


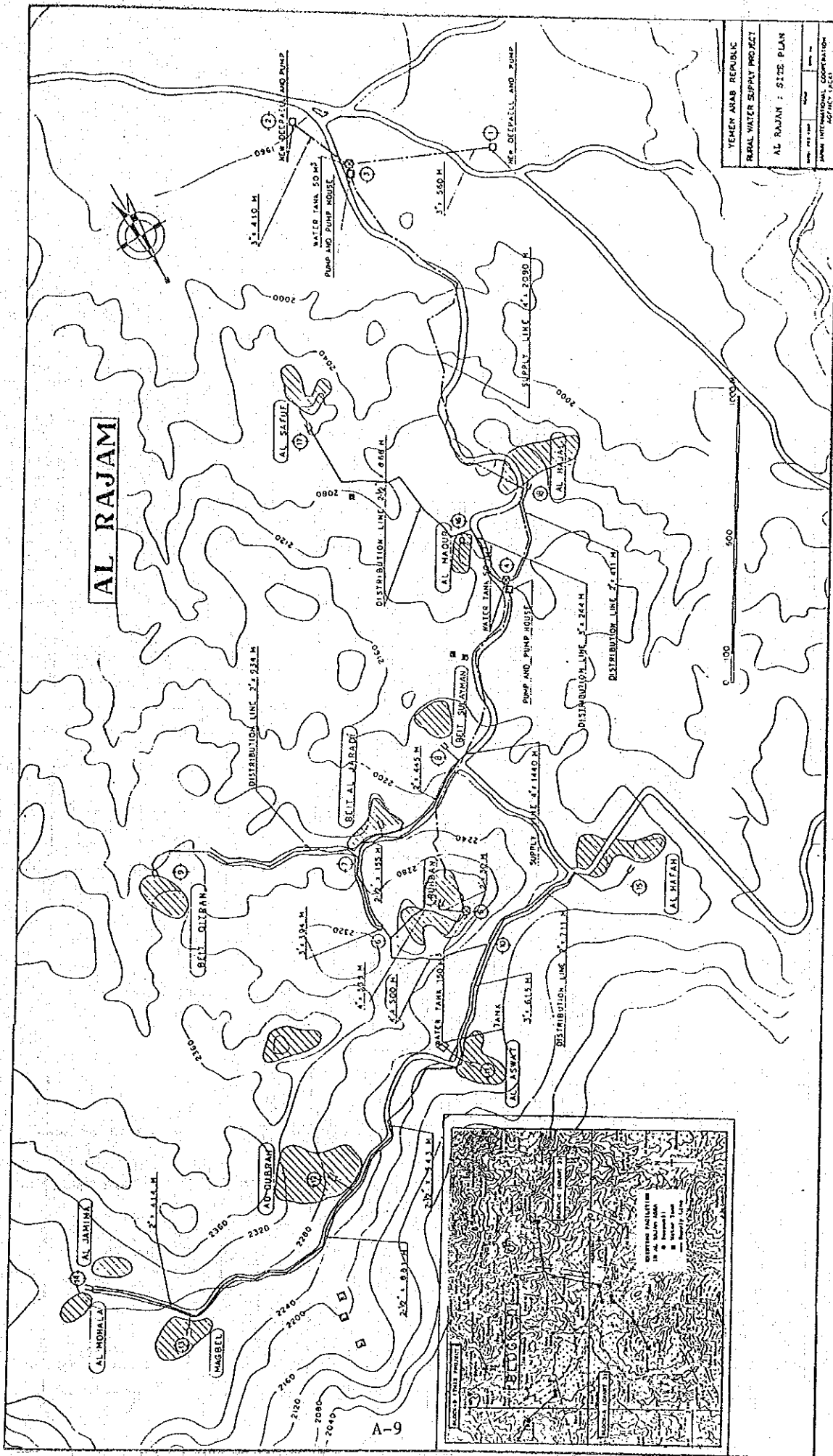
YEMEN ARAB REPUBLIC
 RURAL WATER SUPPLY PROJECT
 AL ZAKIRA : PROFILE
 JARKH INTERNATIONAL COOPERATION AGENCY (JICA)



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|---|----------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| AL KHEISEN : SITE PLAN | |
| DATE PREPARED | SCALE |
| BY | AC SHOWN |
| JAWAH INTERNATIONAL COOPERATION AGENCY (JICA) | |

TEMEN ANAS REPUBLIC
 RURAL WATER SUPPLY PROJECT
 AL REISEH
 1 PROFILE
 Scale: 1:5000
 DATE: 1/1/2000
 DRAWN BY: [Name]
 CHECKED BY: [Name]

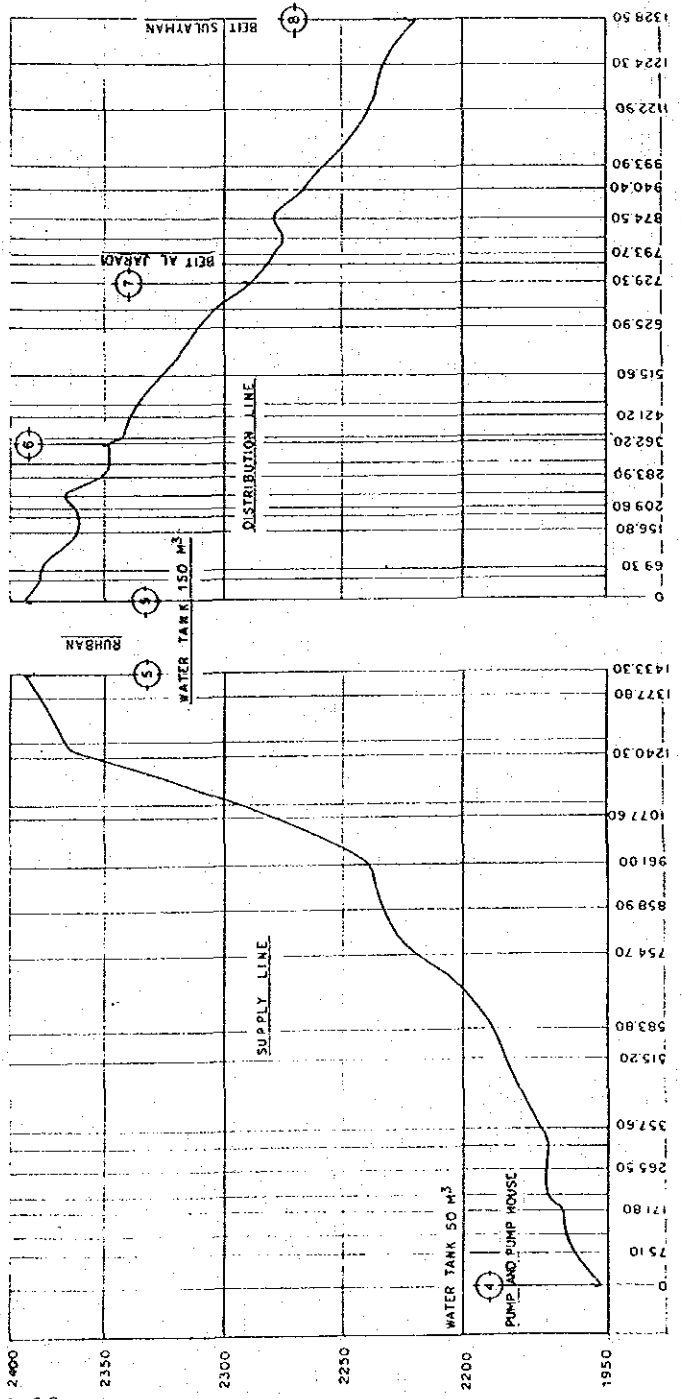
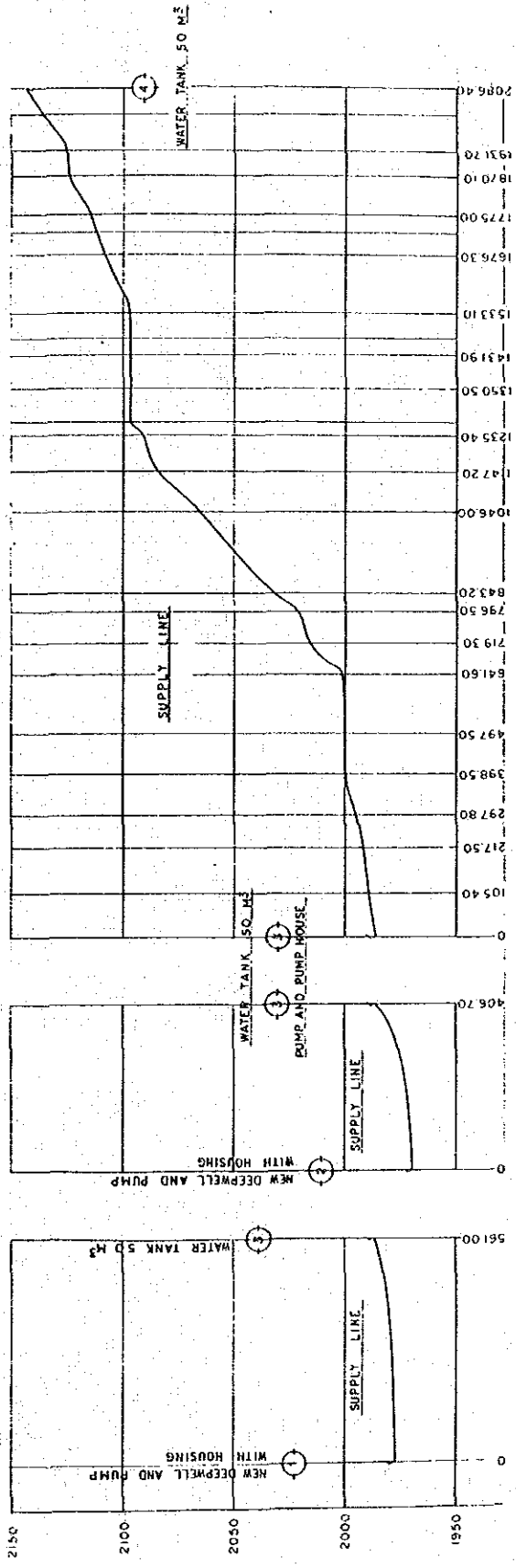


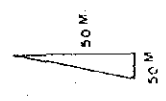
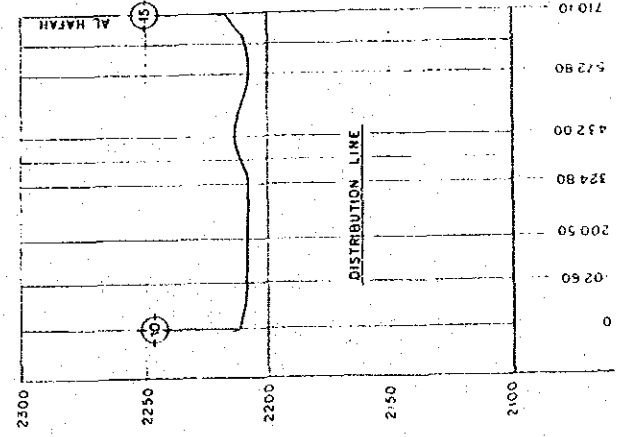
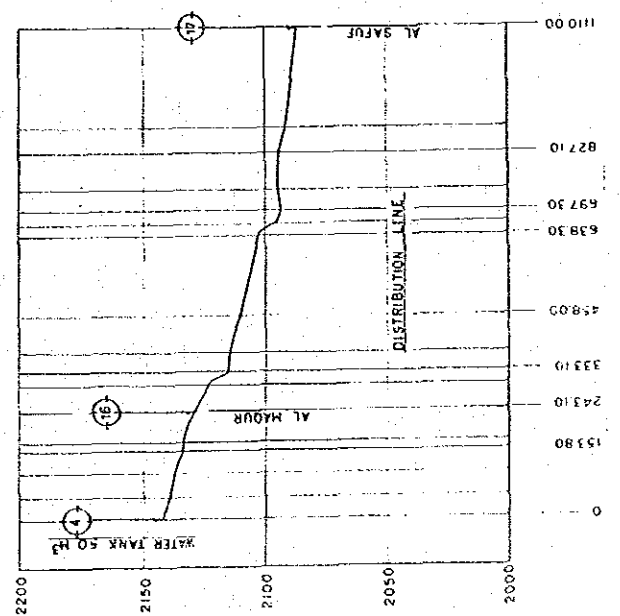
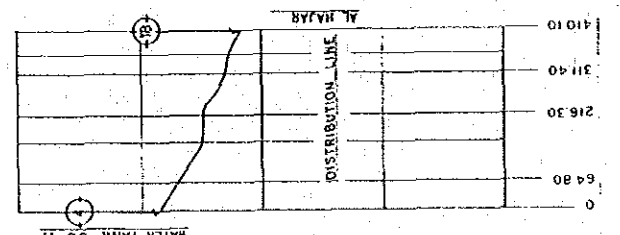
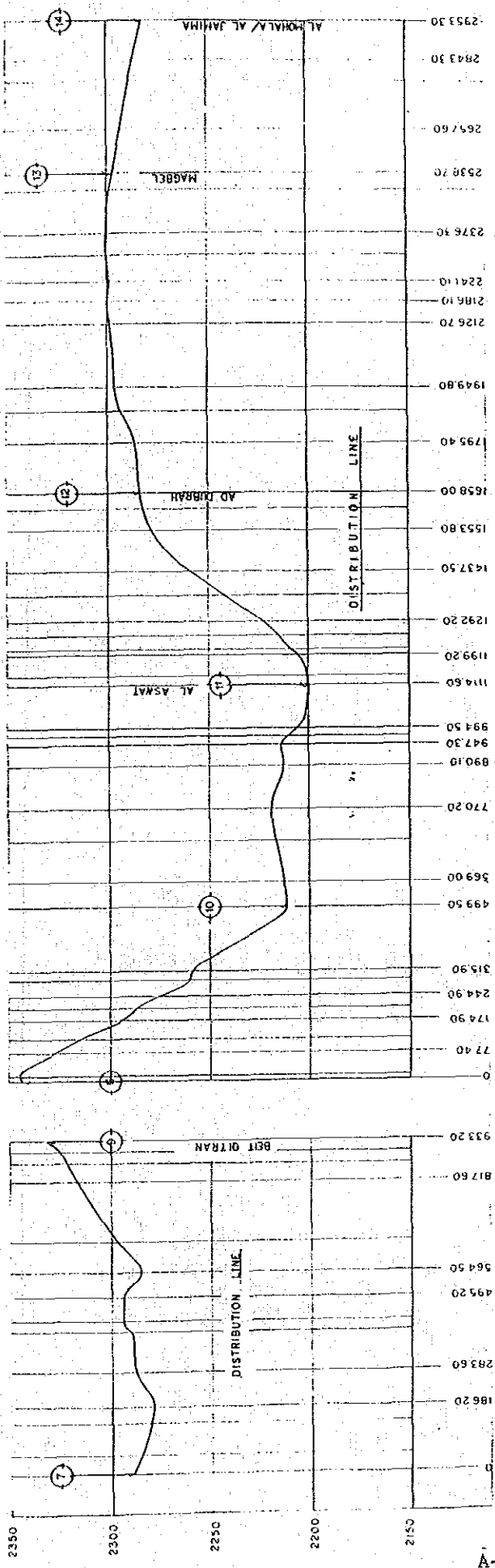


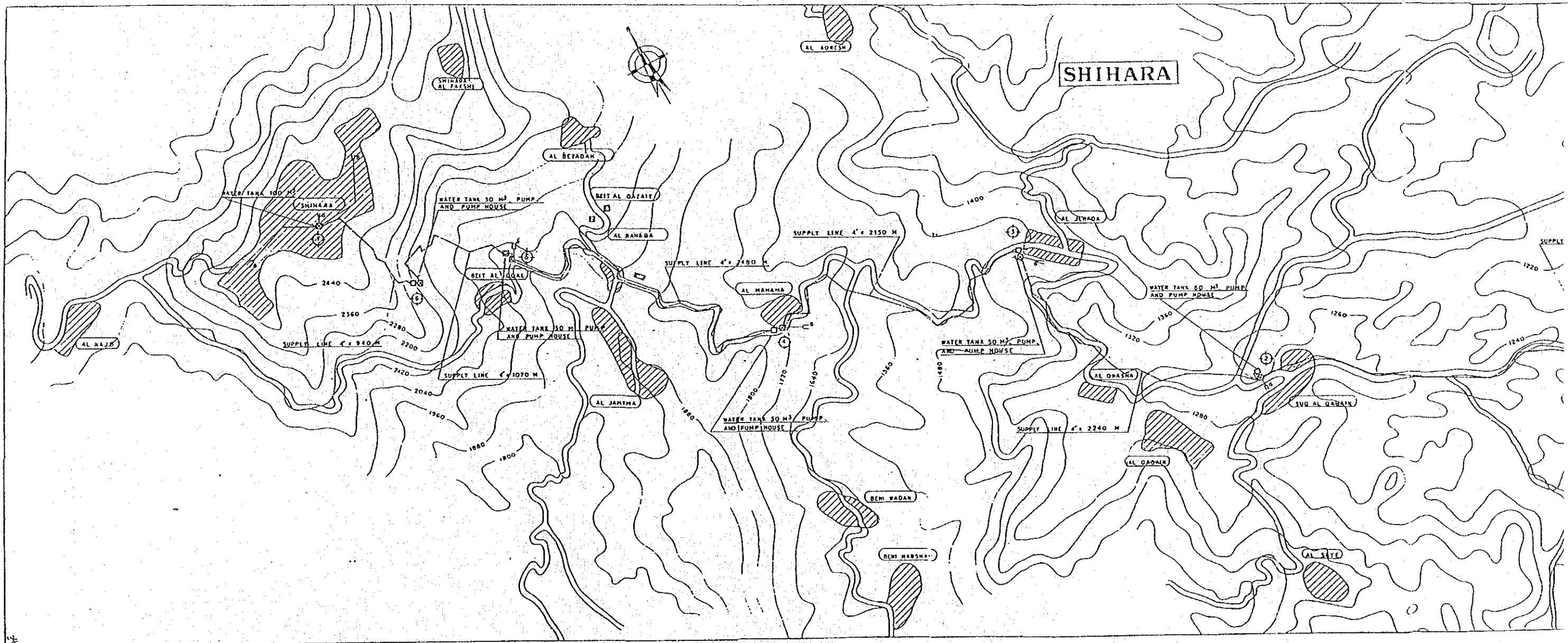
YEMEN ARAB REPUBLIC
 RURAL WATER SUPPLY PROJECT
 AL RAJAM : SITE PLAN
 DRAWN BY: []
 CHECKED BY: []
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

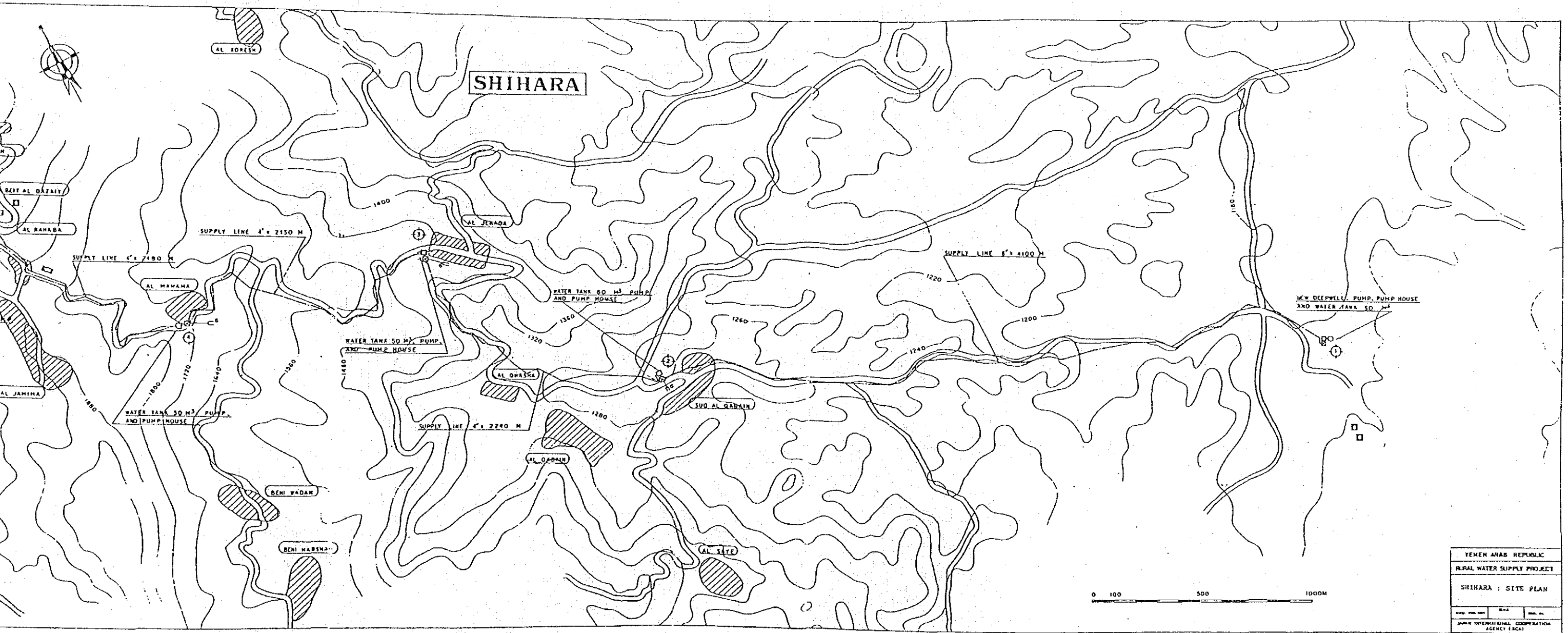
AL RAJAM

3

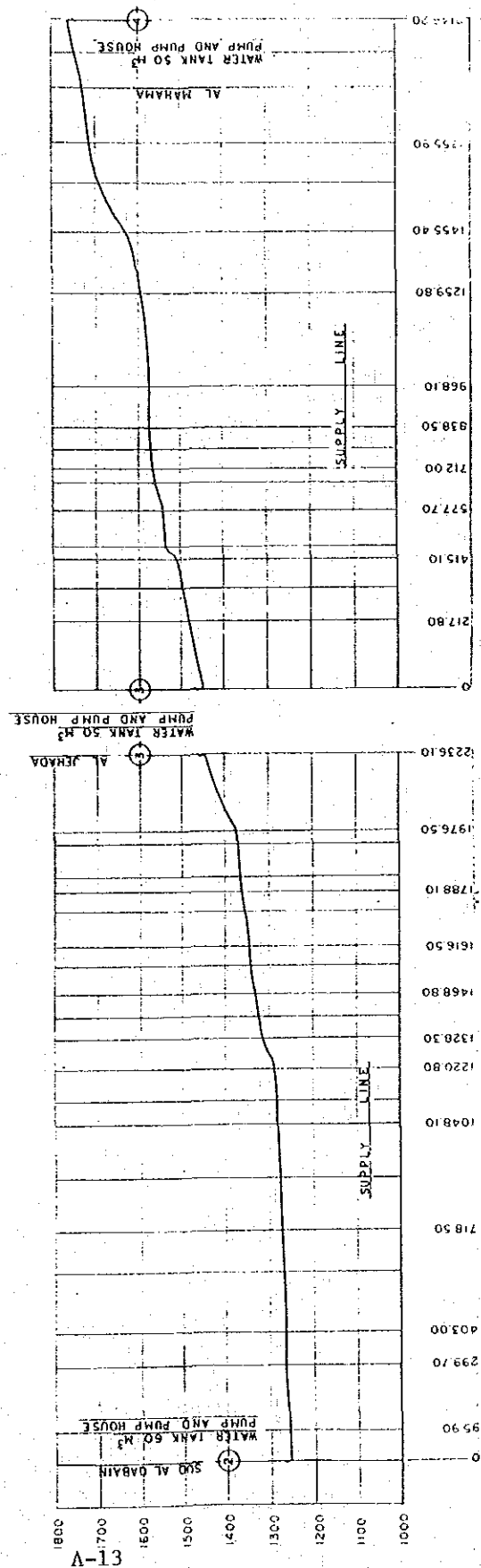
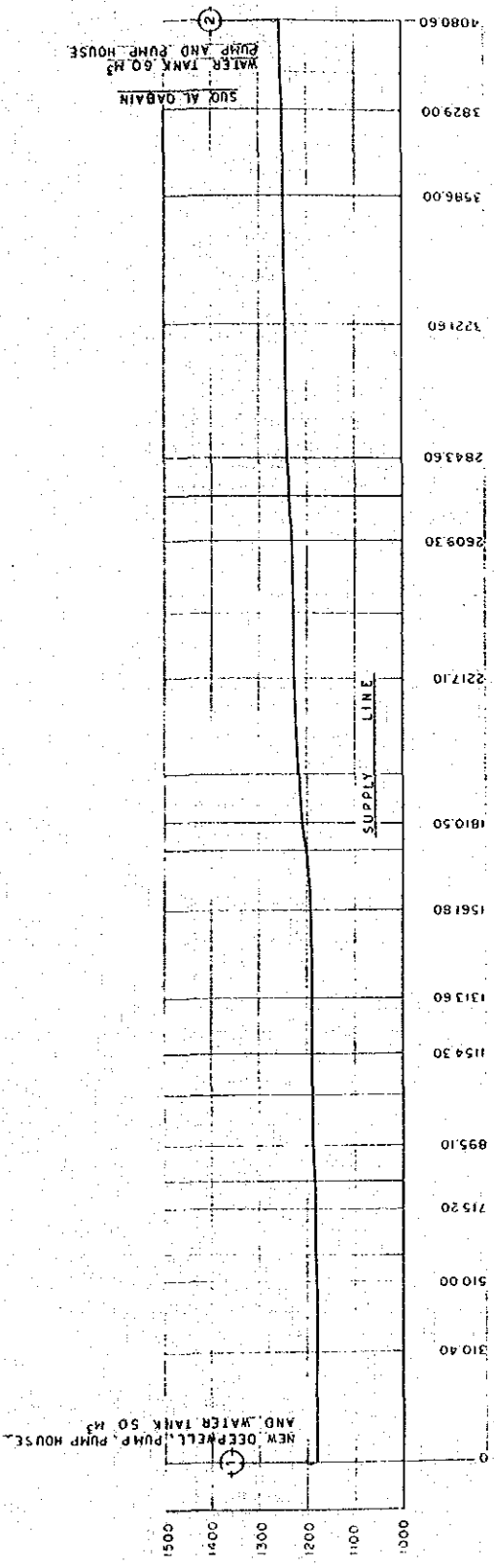






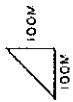
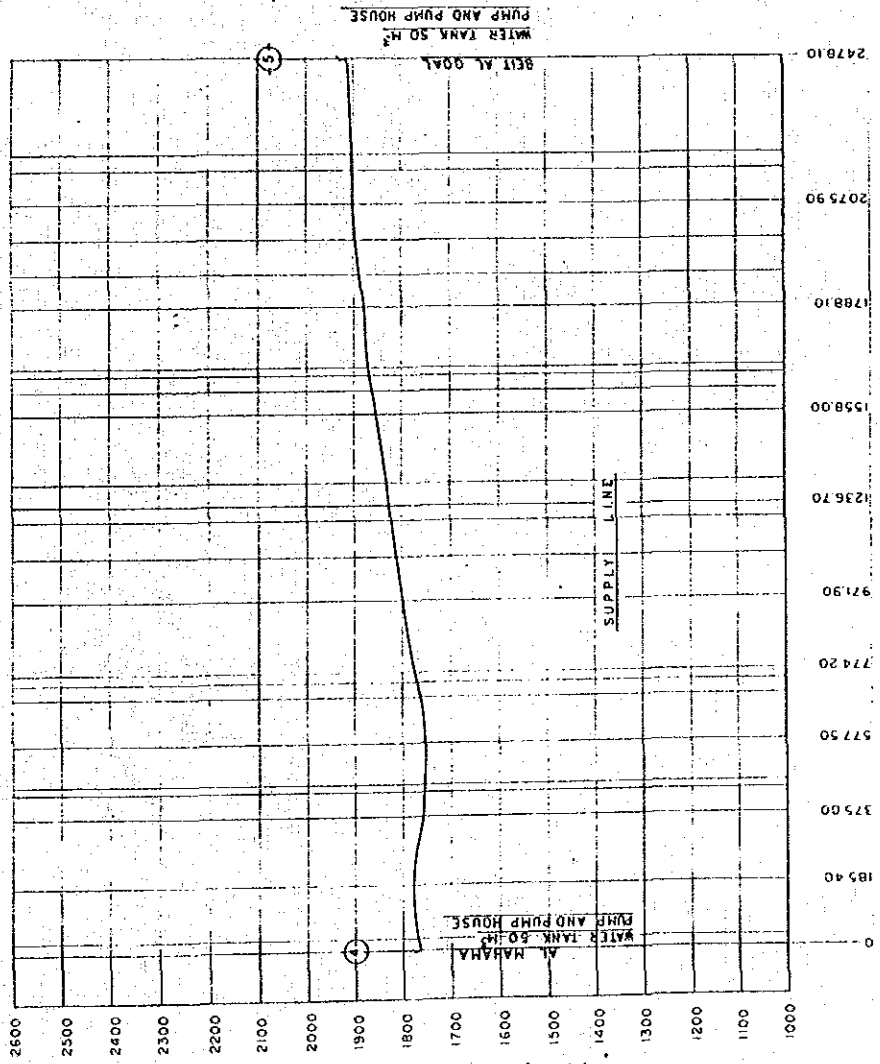
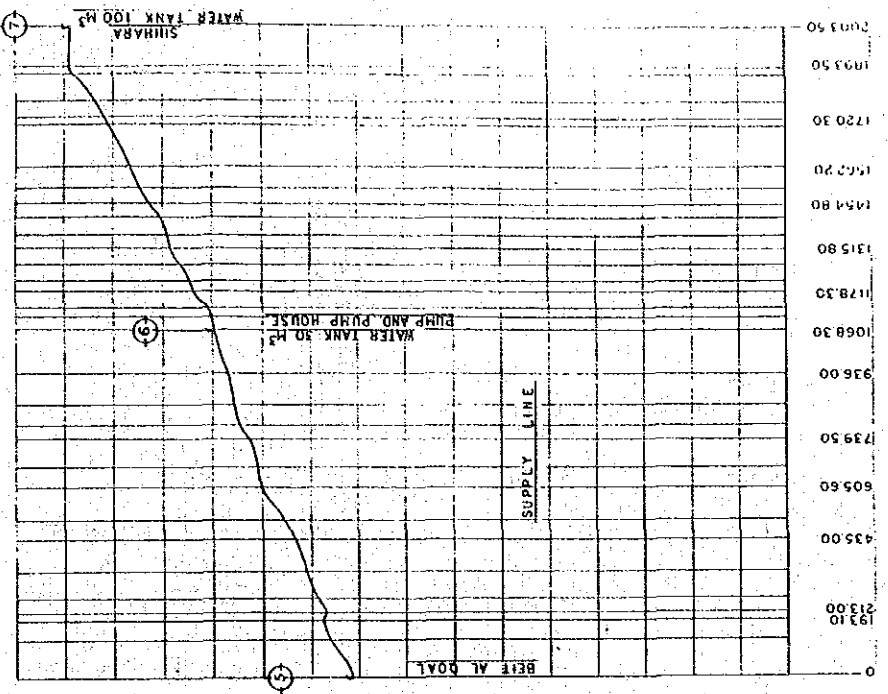


| | | |
|---|---------------|---------|
| YEMEN ARAB REPUBLIC | | |
| RURAL WATER SUPPLY PROJECT | | |
| SHIHARA : SITE PLAN | | |
| DATE: 1980 | SCALE: 1:5000 | NO. 101 |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | | |



YEMEN ARAB REPUBLIC
 RURAL WATER SUPPLY PROJECT
 SHIHARA : PROFILE (1)
 DATE: 1981
 SCALE: 1:5000
 DRAWN BY: [unintelligible]
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

| | |
|---|-------------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| SRIBARA : | |
| PROFILE (2) | |
| DATE FOR DRAWING | DRAWING NO. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | |



18



ADDAHI

EXISTING DEEPLY NEW PUMP PUMP HOUSE AND
NEW ELEVATED TANK 100 M³

EXISTING DEEPLY NEW PUMP PUMP HOUSE AND
NEW ELEVATED TANK 100 M³

EXISTING FACILITIES

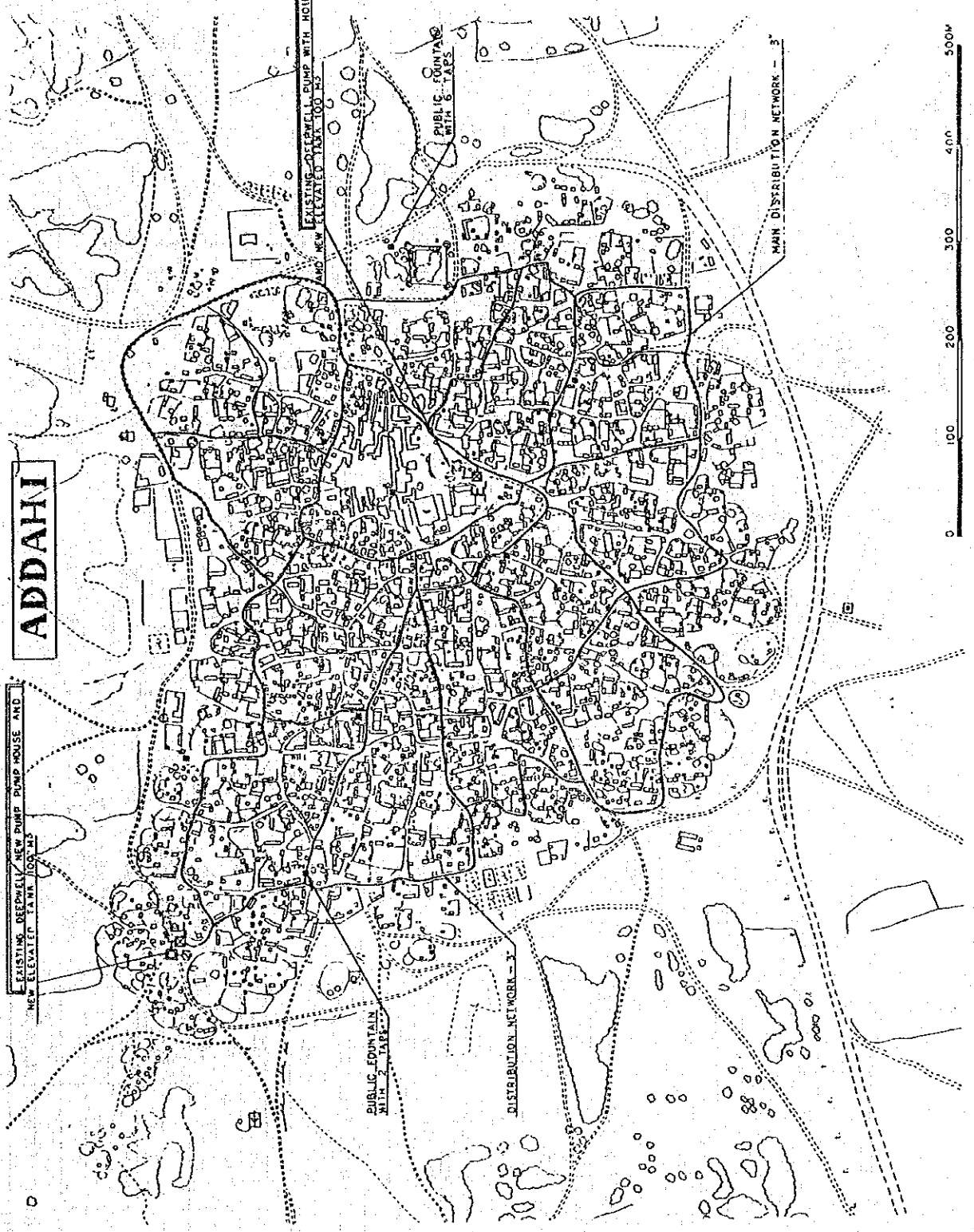
- DEEP WELL: 60M x 1 m
- DEEPLY NEW PUMP: 50M x 1 m
- DEEPLY NEW PUMP: 90 m³ x 64 m x 23 ps x 1 m
- PUMP HOUSE: 3 x 1 m

PUBLIC FOUNTAIN
WITH 5 TAPS

PUBLIC FOUNTAIN
WITH 2 TAPS

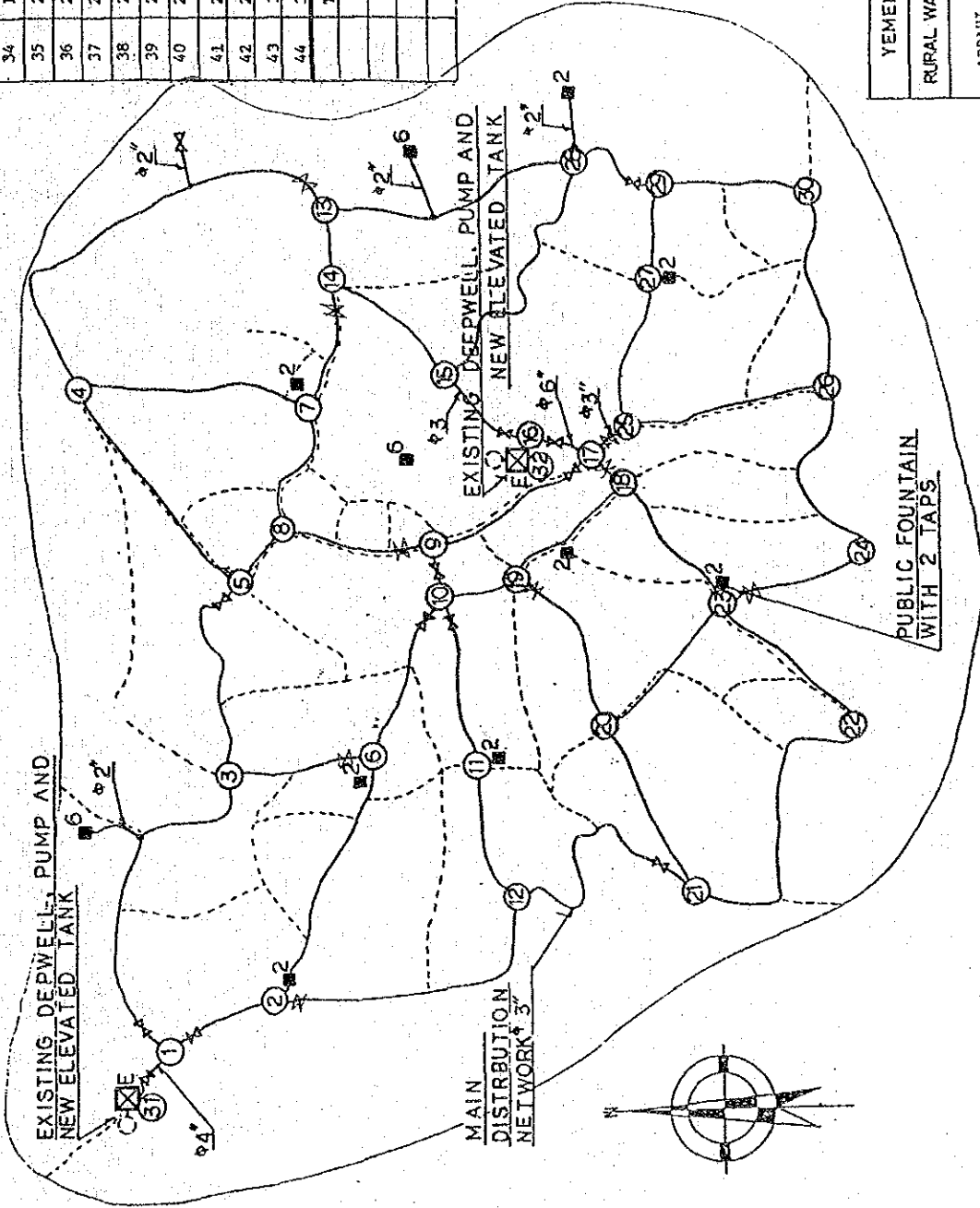
DISTRIBUTION NETWORK - 3'

MAIN DISTRIBUTION NETWORK - 3'

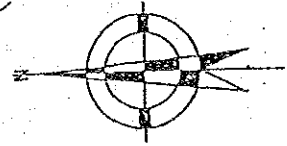


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| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| ADDAHI : SITE PLAN | |
| DATE: 1978/08/17 | SCALE: |
| DRAWN BY: | CHK. BY: |
| JAPAN INTERNATIONAL COOPERATION PROJECT (JICA) | |

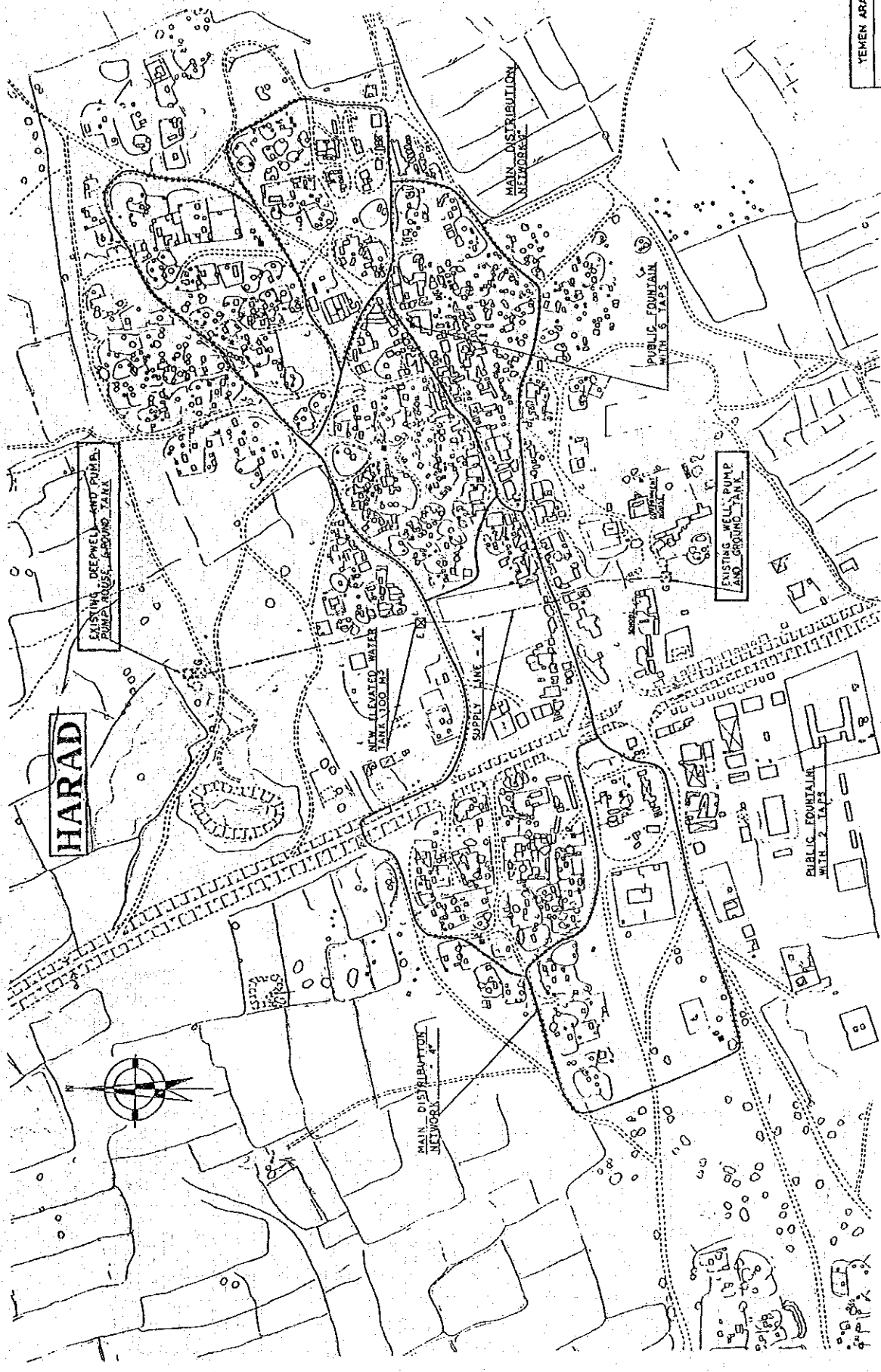
| No. | SECTION | DISTANCE (m) |
|-----|---------|--------------|
| 1 | 1 - 2 | 105 |
| 2 | 1 - 3 | 300 |
| 3 | 2 - 12 | 276 |
| 4 | 2 - 6 | 225 |
| 5 | 3 - 6 | 115 |
| 6 | 3 - 5 | 170 |
| 7 | 5 - 4 | 230 |
| 8 | 12 - 21 | 235 |
| 9 | 11 - 12 | 90 |
| 10 | 10 - 11 | 160 |
| 11 | 6 - 10 | 155 |
| 12 | 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 | 300 |
| 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
 ADDAHI : SUPPLY FACILITIES PLANNING
 DATE: FEB. 1987
 SCALE: 1:50,000
 DWG. No. 101
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)



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|---|---------------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| HARAD : SITE PLAN | |
| DATE: FEB 1984 | SCALE: 1:5000 |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | |



HARAD

EXISTING DEEP WELL AND PUMP, PUMP HOUSE, AND GROUND TANK

NEW ELEVATED WATER TANK 100 M³

SUPPLY LINE - 4"

MAIN DISTRIBUTION NETWORK

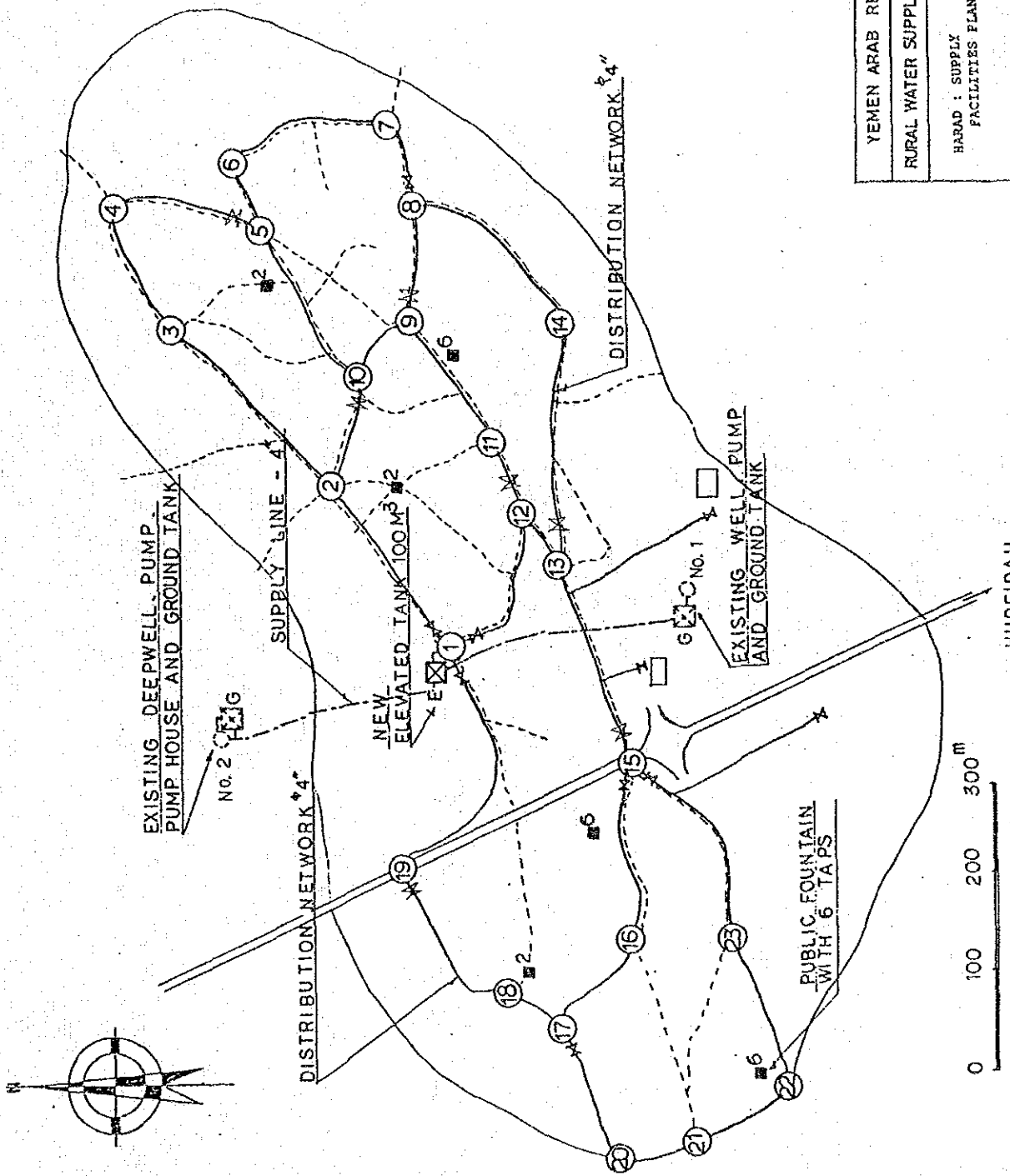
PUBLIC FOUNTAIN WITH 6 TAPS

EXISTING WELL, PUMP AND GROUND TANK

PUBLIC FOUNTAIN WITH 2 TAPS

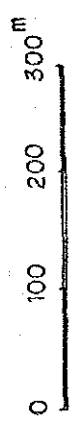
MAIN DISTRIBUTION NETWORK



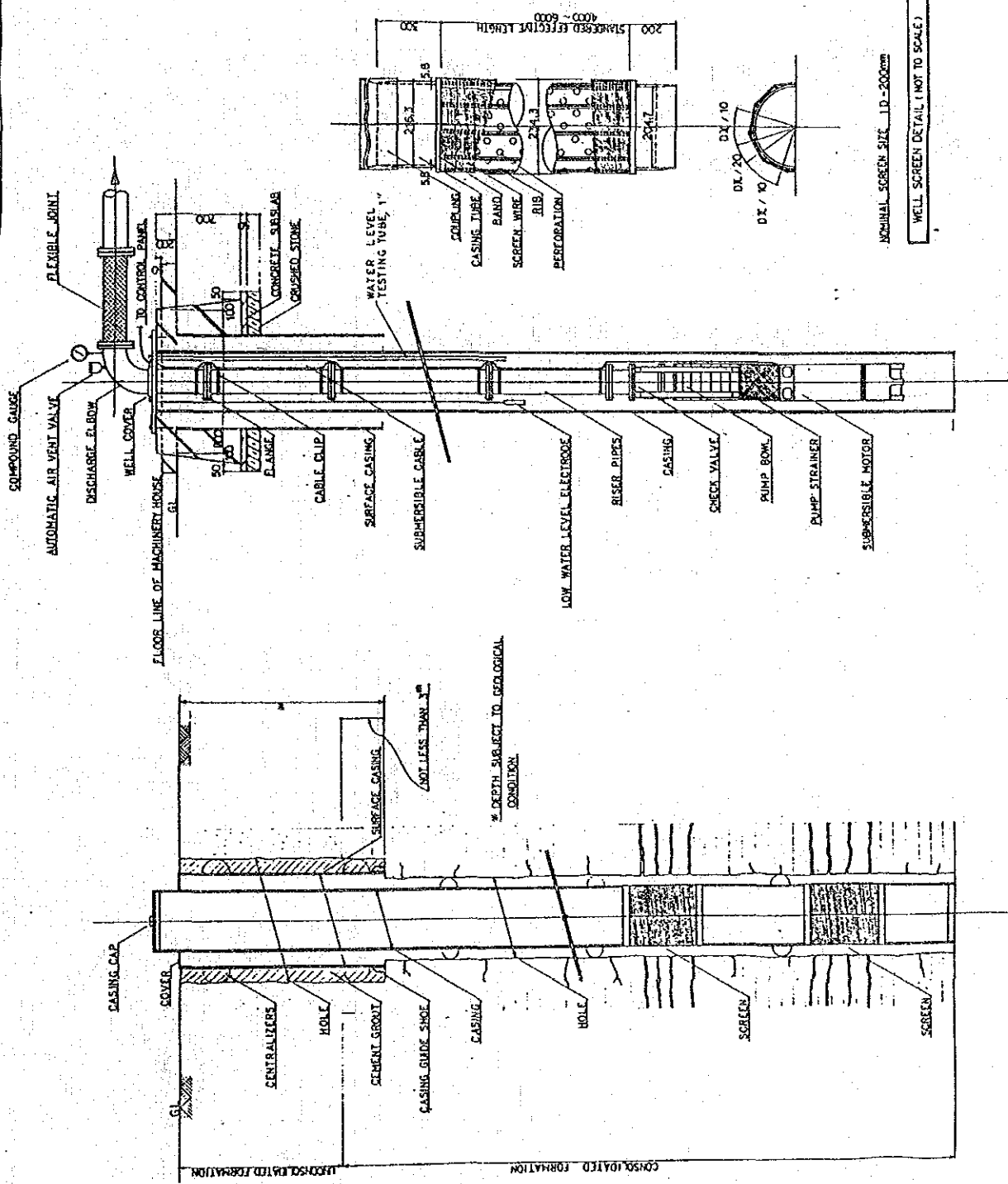


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| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| HARAD : SUPPLY FACILITIES PLANNING | |
| DATE: PER. 1987 | SCALE |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | |

| 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 |



**B. DETAILS OF
WATER SUPPLY FACILITIES**

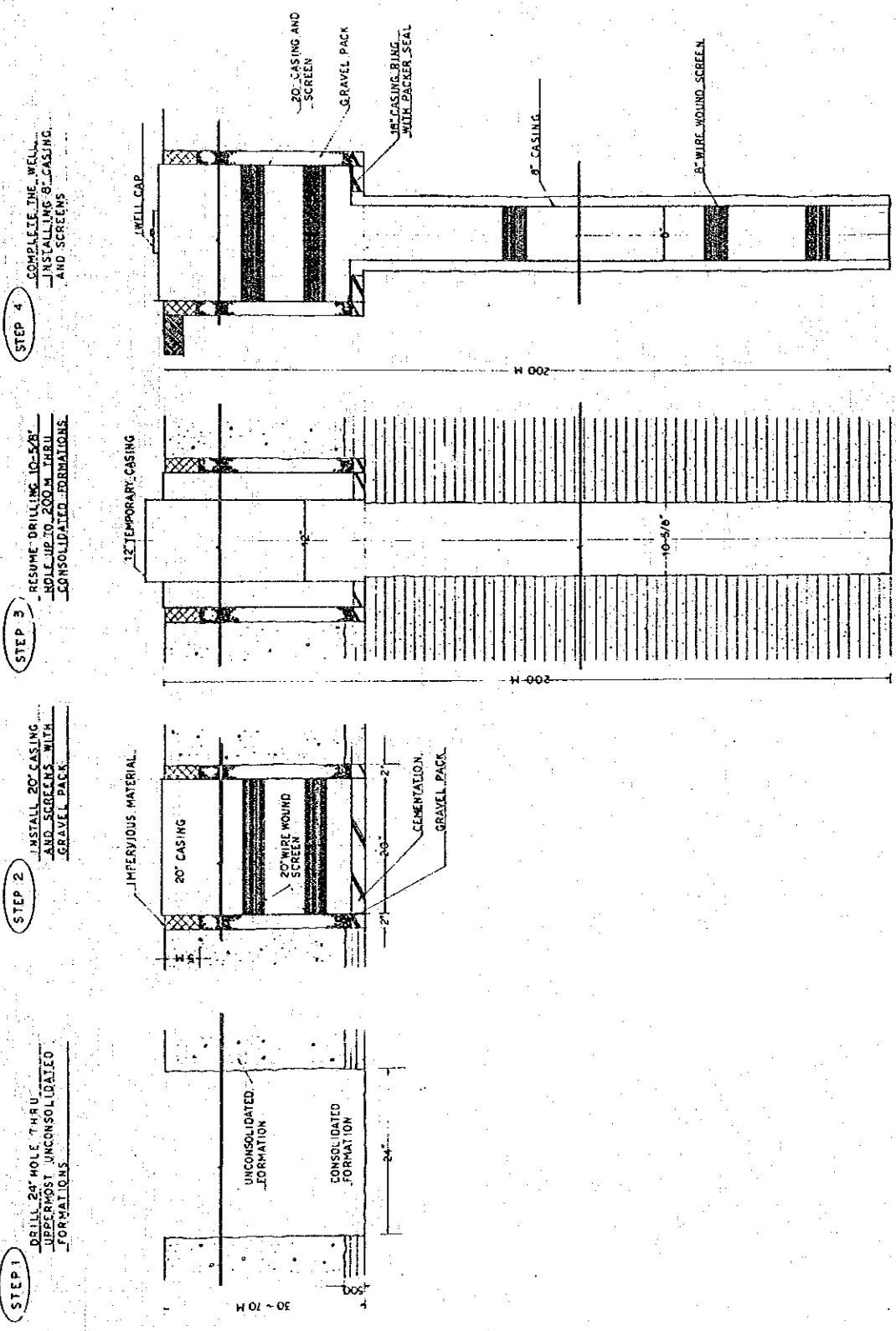


| | |
|--------------------------------------|---|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| TYPICAL STRUCTURE OF WELL : AL RAJAH | |
| DATE: PER. 1987 | SCALE |
| DWG. NO. | JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) |

DETAIL OF SUBMERSIBLE PUMP INSTALLATION (NOT TO SCALE)

TYPICAL SECTION OF WATER WELL (NOT TO SCALE)

WELL SCREEN DETAIL (NOT TO SCALE)



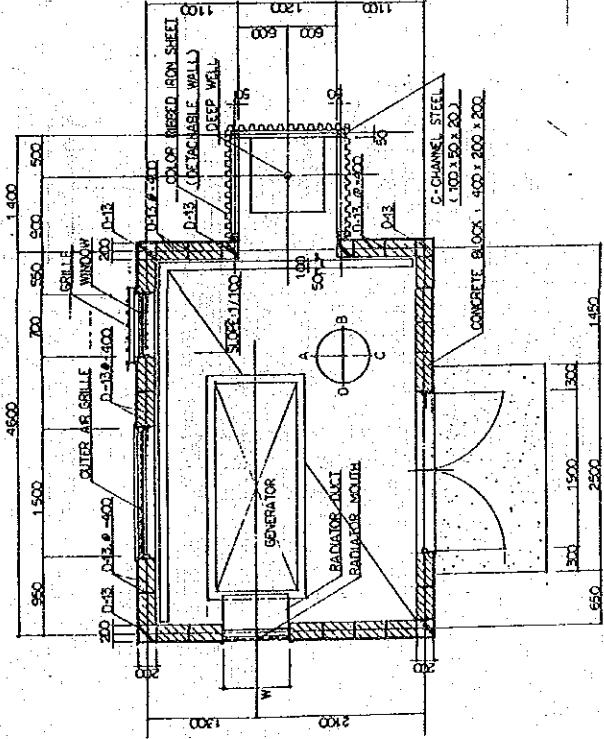
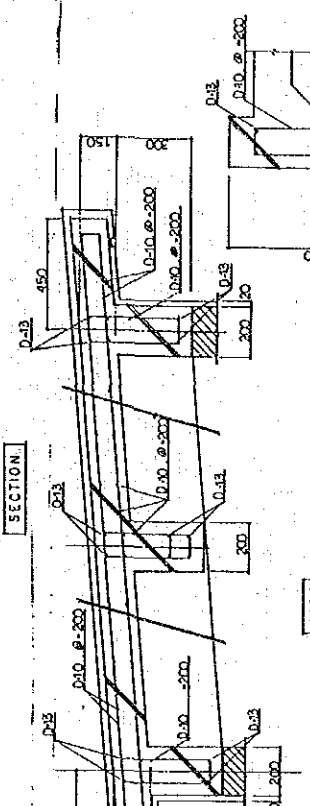
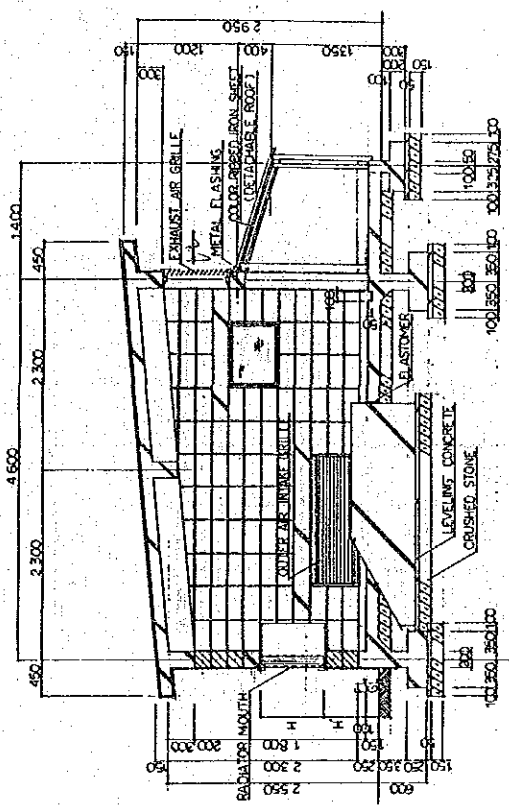
STEP 1
 DRILL 30" HOLE THRU
 DEEPEST UNCONSOLIDATED
 FORMATIONS

STEP 2
 INSTALL 20' CASING
 AND SCREENS WITH
 GRAVEL PACK

STEP 3
 RESUME DRILLING TO 12'
 AND UP TO 200 M THRU
 CONSOLIDATED FORMATIONS

STEP 4
 COMPLETE THE WELL
 INSTALLING 8" CASING
 AND SCREENS

24

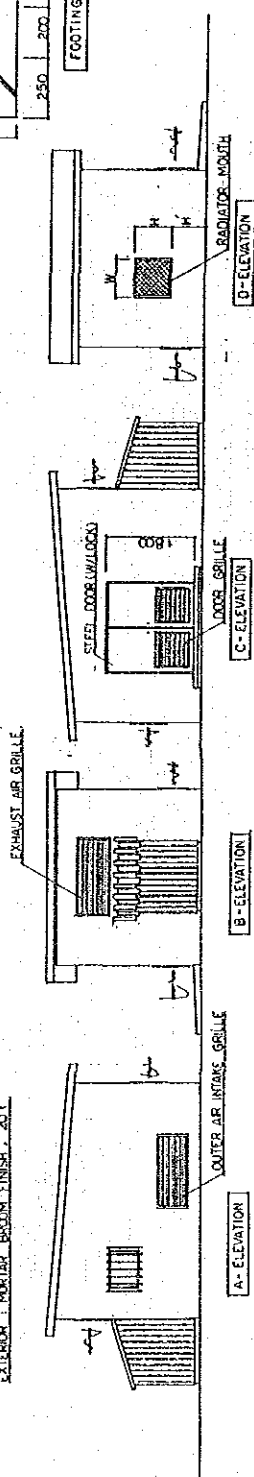


PLAN

- OUTER AIR INTAKE GRILLE : 1500 x 500 (W/ INSECT SCREEN)
- DOOR GRILLE : 700 x 700 x 2 Sp. (ditto)
- EXHAUST AIR GRILLE : 1500 x 700 (ditto)
- RADIATOR MOUTH : STEEL NET, W/ H AND H' SHALL BE FITTED IN THE RADIATOR OF GENERATOR ENGINE
- RADIATOR DUCT : SAME SIZE AS RADIATOR MOUTH
- WINDOW (EXPOSED FITTINGS) : W/ BLD GLASS 663 (W/ GRILLE), 700 x 500
- ROOF : WATERPROOF MORTAR FINISH, 30L
- EXTERIOR : MORTAR BROOM FINISH, 20L

ROOF

LIMIT MAIN REINFORCEMENT : D-13 x 4-φ8 - ROOF, D-10, φ-200



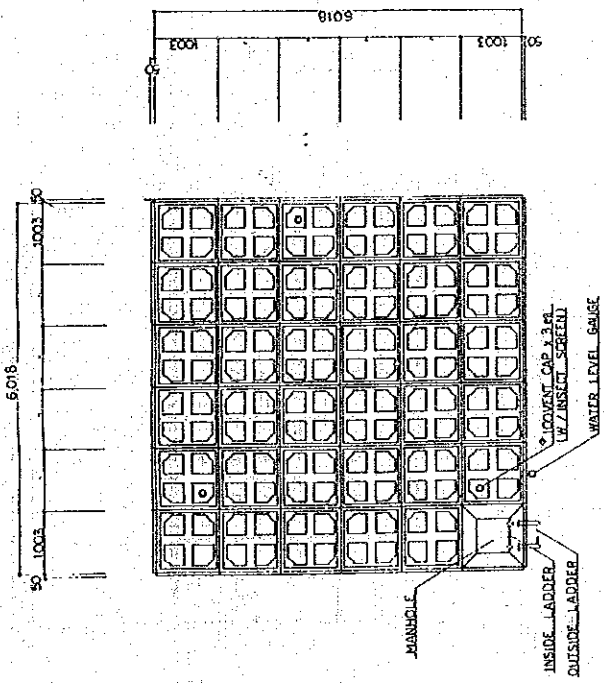
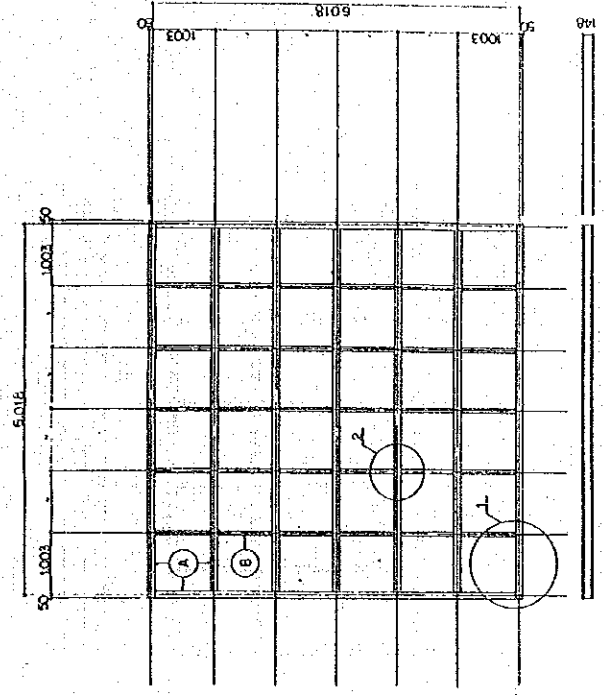
A-ELEVATION

B-ELEVATION

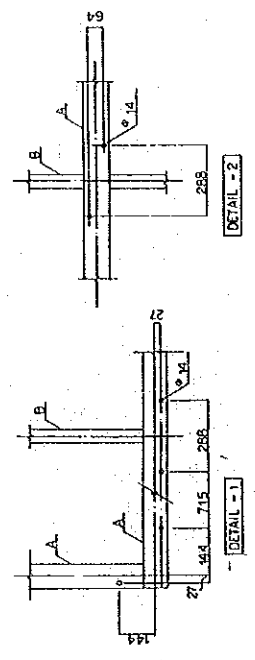
C-ELEVATION

D-ELEVATION

MACHINERY HOUSE : TYPE - A

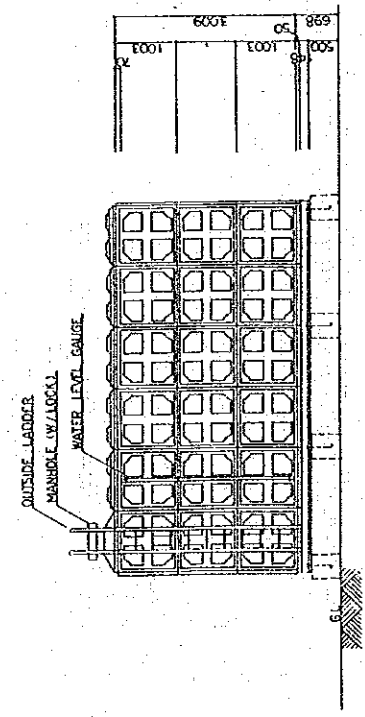


PLAN



A: H-148 x 100 x 6 x 9 B: H-100 x 50 x 5 x 7

DETAIL OF CHANNEL BASE

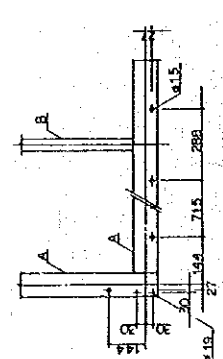
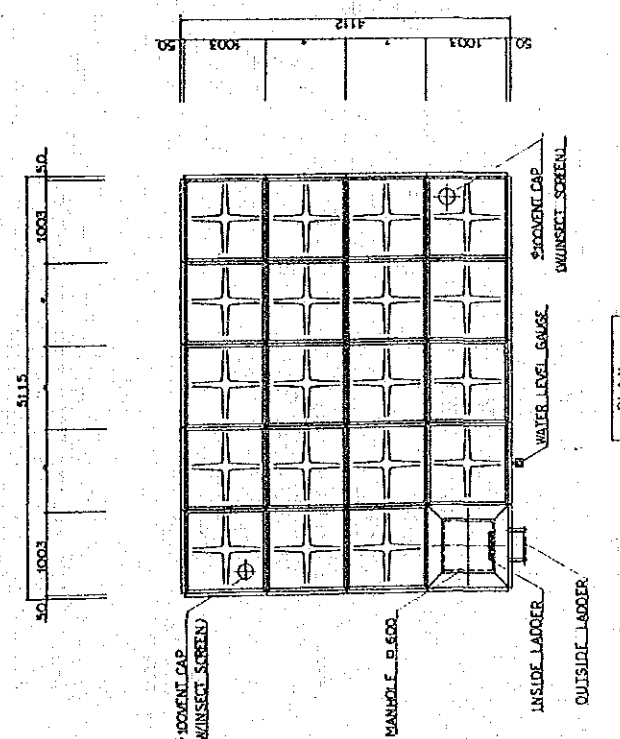
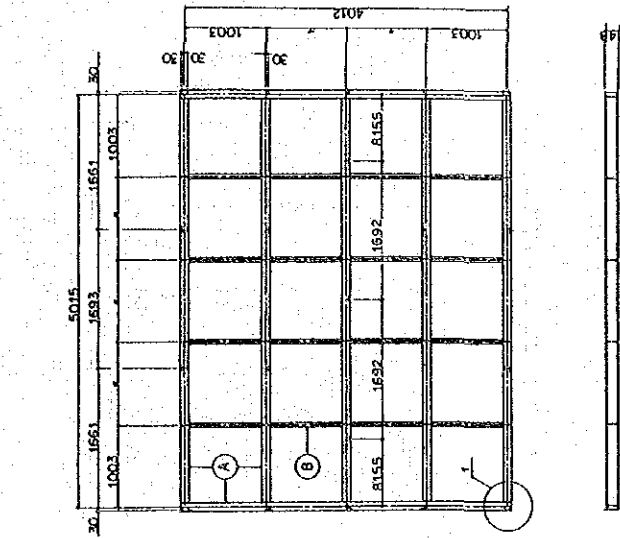


SIDE VIEW

TYPE OF TANK: STEEL REINFORCED TANK
FITTING CAPACITY: 100.0 m³

DETAIL OF SERVICE TANK (100 m³)

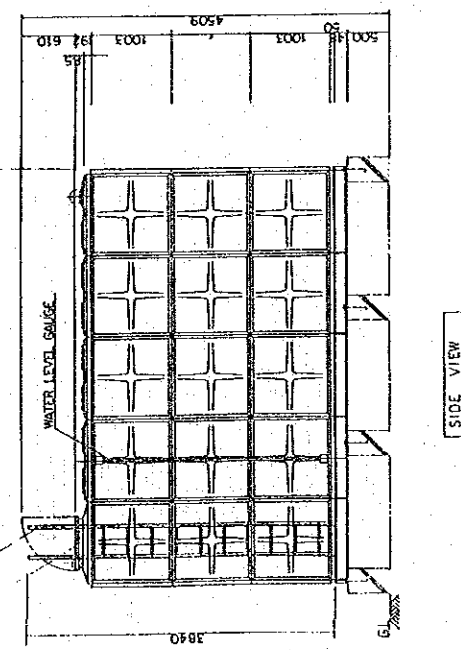
| | |
|---|-----------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| WATER TANK DETAILS : | |
| 100M ³ GROUND TANK | |
| DATE PER 1987 | SHEET NO. |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | APP. NO. |



DETAIL - 1

A.H-14.8X100X6.9 B.H-100X50X5.7

DETAIL OF CHANNEL BASE

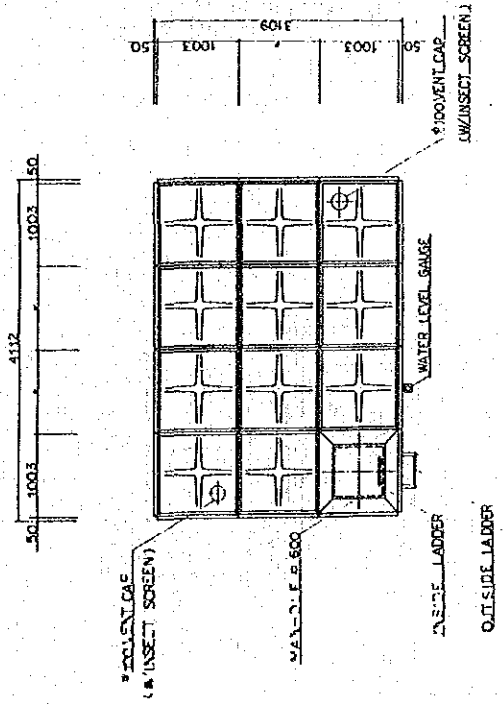


SIDE VIEW

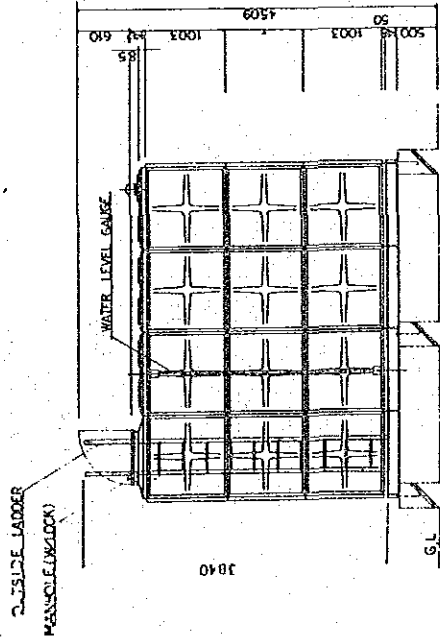
| | | | |
|---|-------|-----------|--|
| YEMEN ARAB REPUBLIC | | | |
| RURAL WATER SUPPLY PROJECT | | | |
| WATER TANK DETAILS : | | | |
| 50 M ³ GROUND TANK | | | |
| DATE: FEB. 1977 | SCALE | SHEET NO. | |
| JARKH INTERNATIONAL COOPERATION AGENCY (JICA) | | | |

TYPE OF TANK: STEEL PREFABRICATED TANK
EFFECTIVE CAPACITY: 50.0 M³

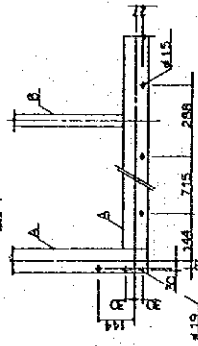
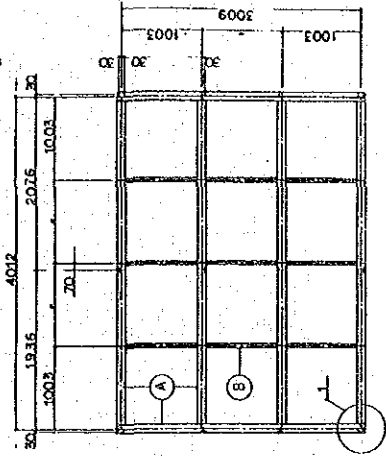
DETAIL OF SERVICE TANK (50 M³)



PLAN



SIDE VIEW



DETAIL - 1

A:H=148 x 100x619 B:H=100x50x537

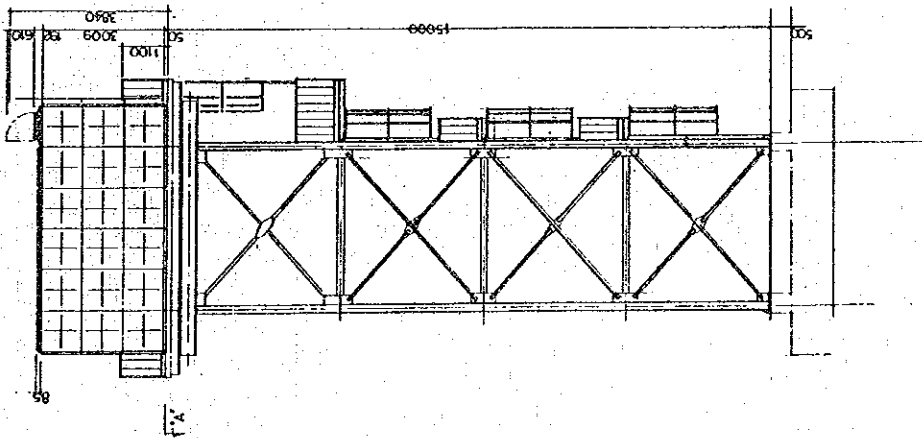
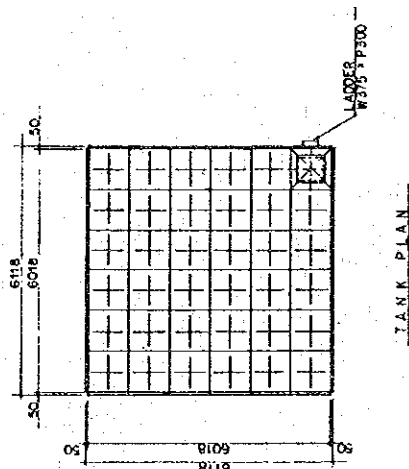
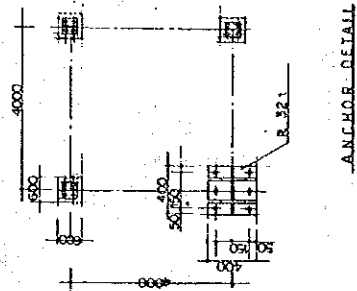
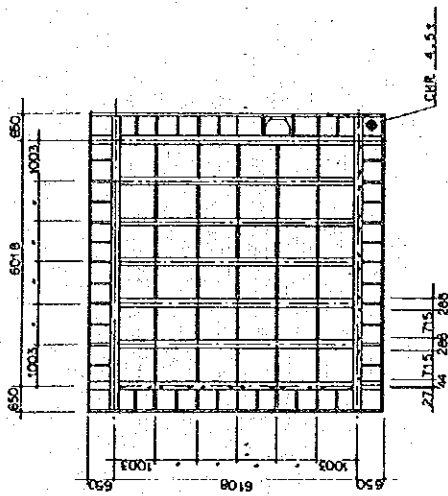
DETAIL OF CHANNEL BASE

TYPE OF TANK : STEEL PREFABRICATED TANK
EFFECTIVE CAPACITY : 300m³

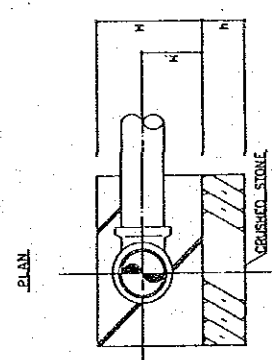
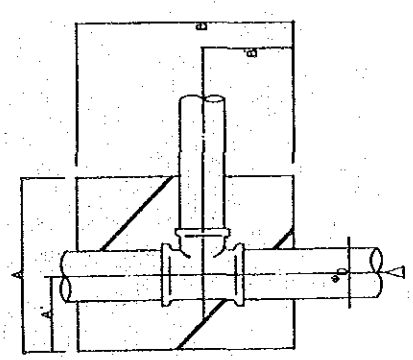
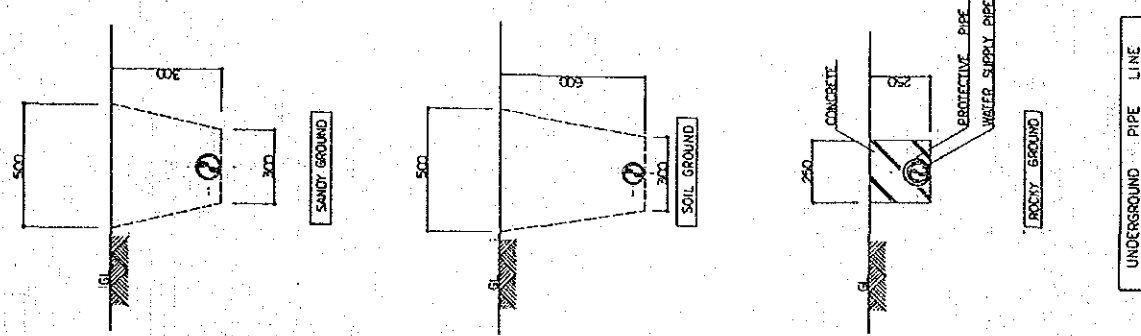
DETAIL OF SERVICE TANK (30 m³)

| | |
|---|-------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| WATER TANK DETAILS : | |
| 30 M ³ GROUND TANK | |
| DATE: 1981 | SCALE |
| DRAWN BY: JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | |

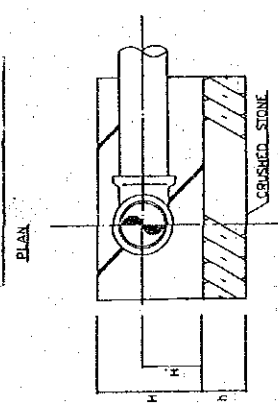
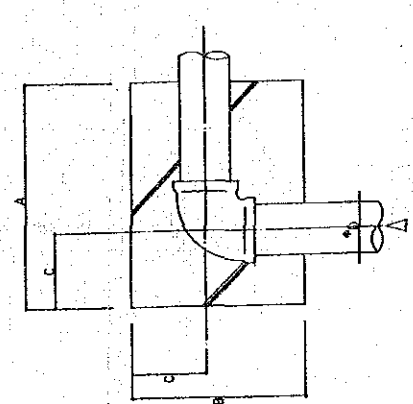
| | |
|----------------------------------|-------------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| WATER TANK DETAILS : | |
| 100 M ³ ELEVATED TANK | |
| DATE: FEB. 1987 | SCALE: 1/20 |
| JORDAN INTERNATIONAL CORPORATION | |
| AGENCY (LOCAL) | |



34



| φ _D | A | A' | B | B' | H | H' | h |
|----------------|-----|-----|-----|-----|-----|-----|-----|
| 100 | 400 | 200 | 500 | 200 | 310 | 200 | 150 |
| 80 | 370 | 190 | 460 | 180 | 290 | 190 | 150 |
| 65 | 360 | 190 | 440 | 170 | 280 | 190 | 150 |
| 50 | 340 | 180 | 420 | 160 | 270 | 180 | 100 |



| φ _D | A | B | C | H | H' | h |
|----------------|-----|-----|-----|-----|-----|-----|
| 100 | 500 | 400 | 200 | 310 | 200 | 150 |
| 80 | 470 | 370 | 190 | 290 | 190 | 150 |
| 65 | 460 | 350 | 190 | 280 | 190 | 150 |
| 50 | 440 | 340 | 180 | 270 | 180 | 100 |

B-8

ROCKY GROUND

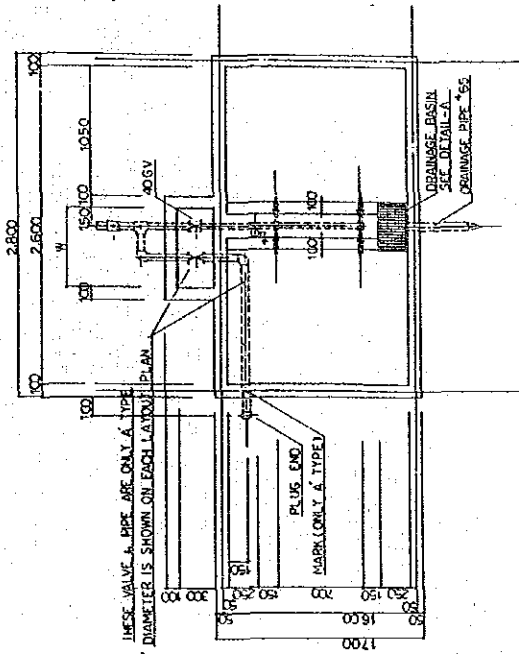
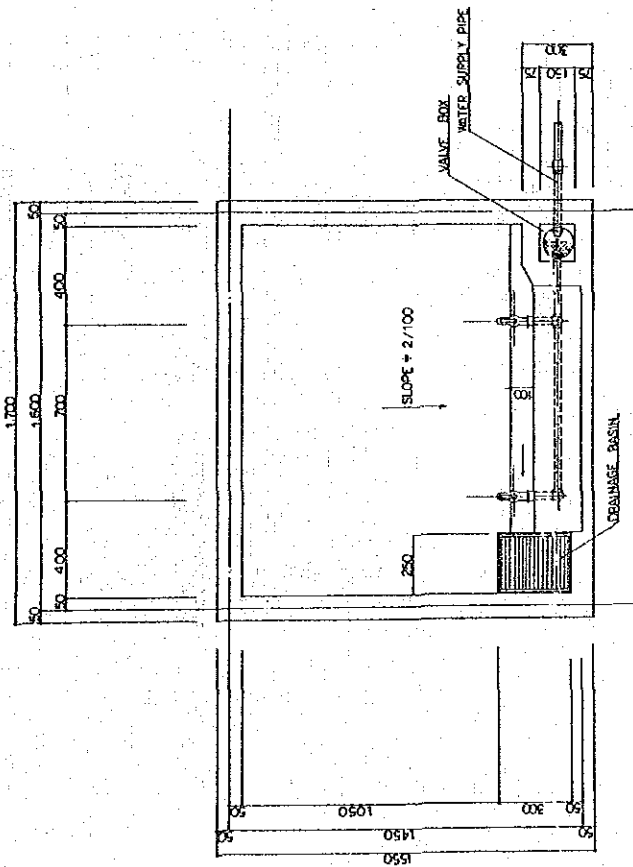
UNDERGROUND PIPE LINE

T.E.E.

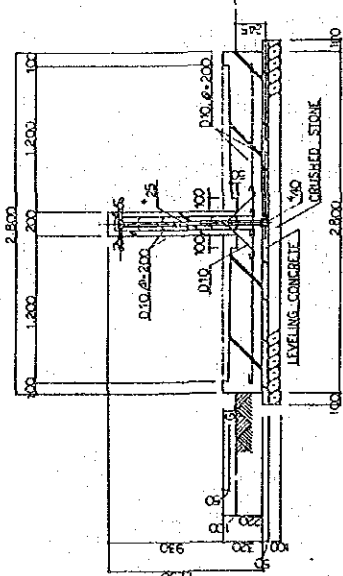
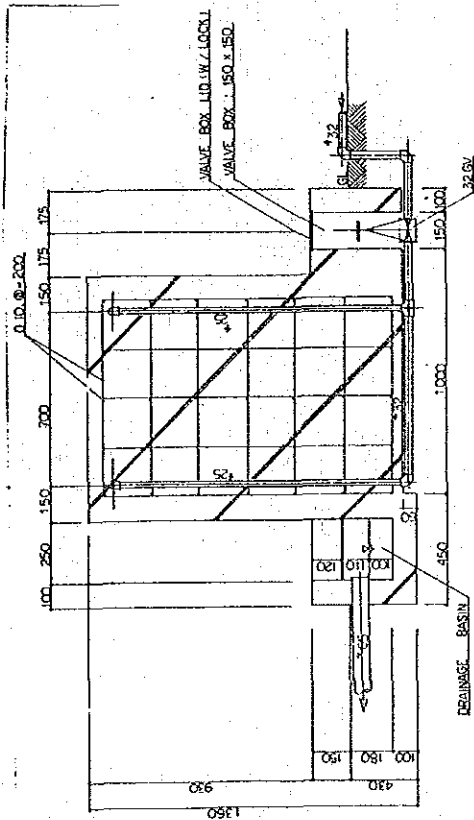
ELBOW

TYPICAL CONCRETE THRUST BLOCK

DETAIL OF PUBLIC FAUCET



THESE VALVE & PIPE ARE ONLY A TYPE DIAMETER IS SHOWN ON EACH LAYOUT PLAN

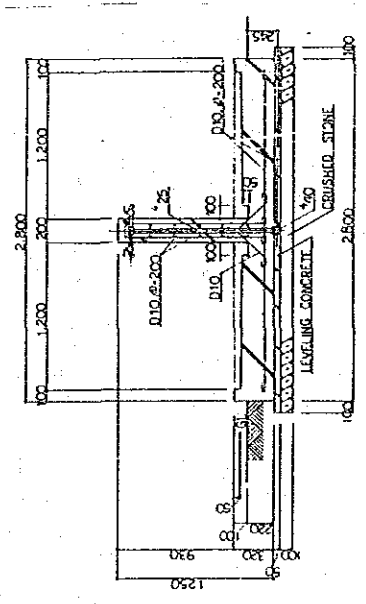
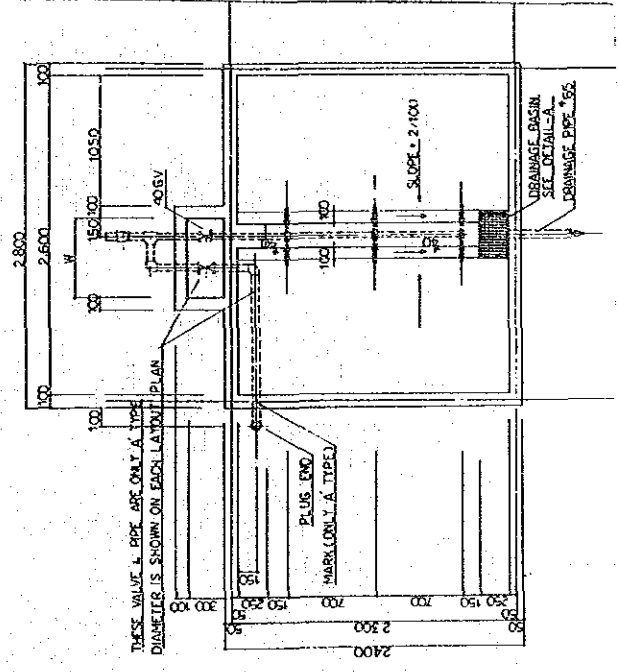


A - T - A - P

2 - T - A - P

| | | |
|---|-----------------|-----------|
| YEMEN ARAB REPUBLIC | | |
| RURAL WATER SUPPLY PROJECT | | |
| PUBLIC FOUNTAIN (1) | | |
| DATE: FEB. 1997 | SCALE: AS SHOWN | DWG. NO.: |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | | |

DETAIL OF PUBLIC FAUCET



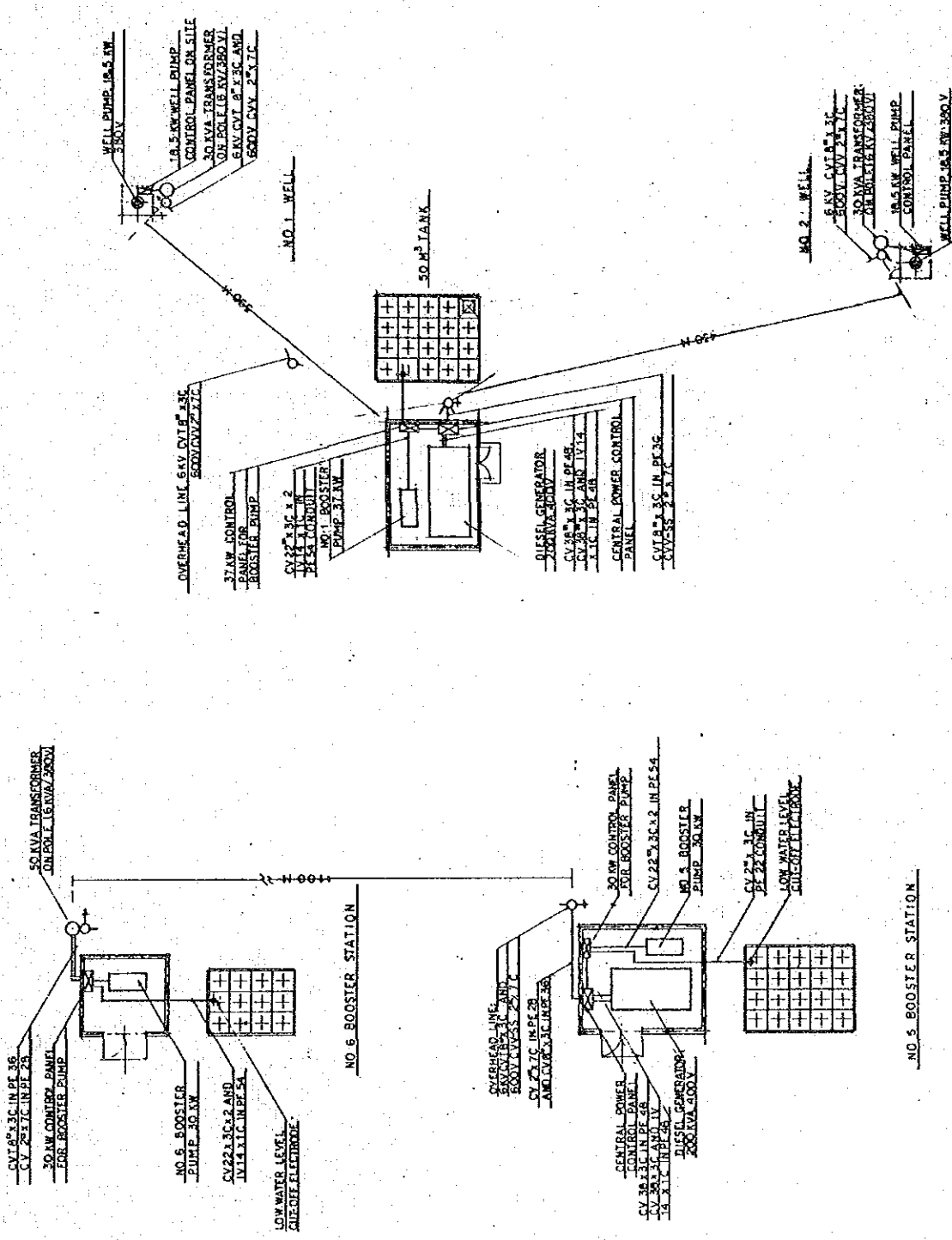
| | |
|--|----------|
| YEMEN ARAB REPUBLIC | |
| RURAL WATER SUPPLY PROJECT | |
| PUBLIC FOUNTAIN (2) | |
| DATE | SCALE |
| 1980 FEB 1981 | AS SHOWN |
| JAWH INTERNATIONAL COOPERATION AGENCY (JICA) | |

22

36

AL RAJAM

SHIHARA



| | | | |
|---|--|-----------|--|
| YEMEN ARAB REPUBLIC | | SHEET NO. | |
| RURAL WATER SUPPLY PROJECT | | SHEET NO. | |
| ELECTRIC WORKS | | SCALE | |
| JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) | | DATE | |

