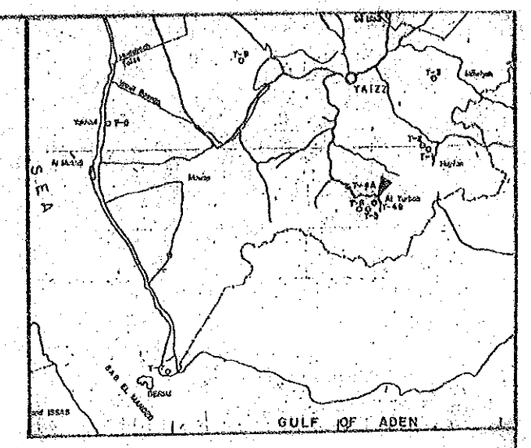
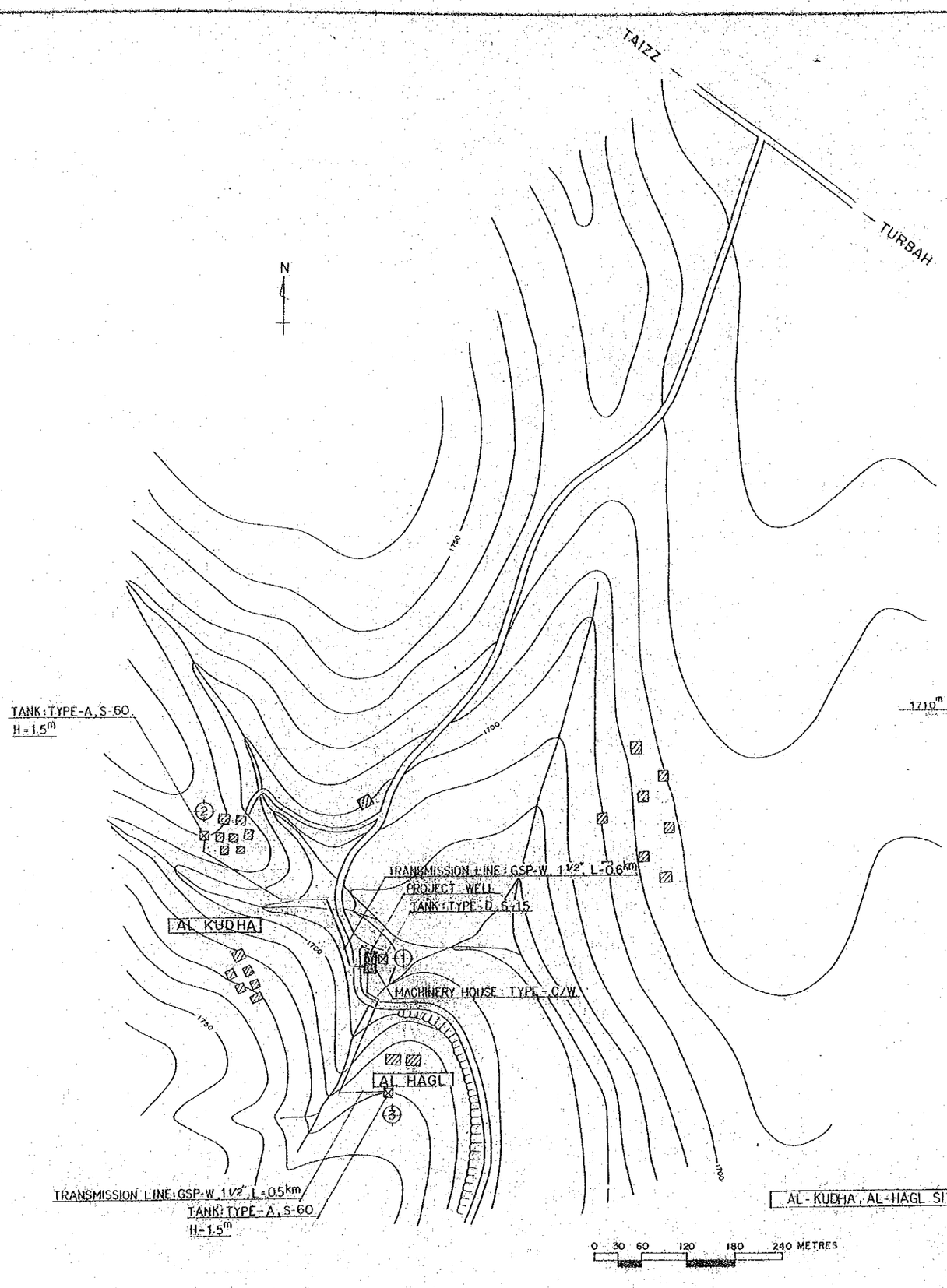
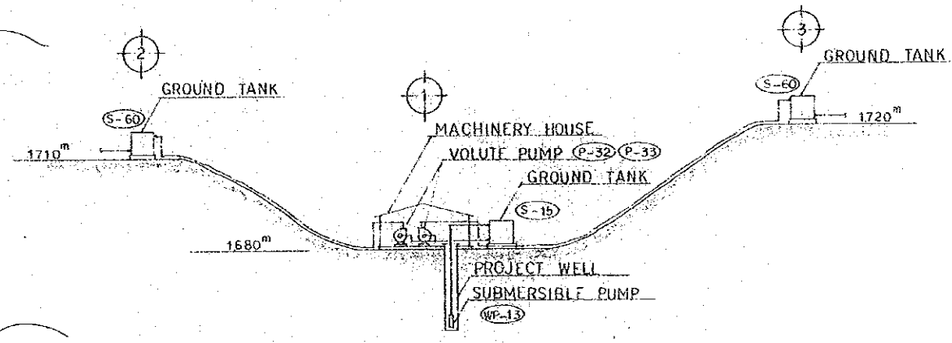
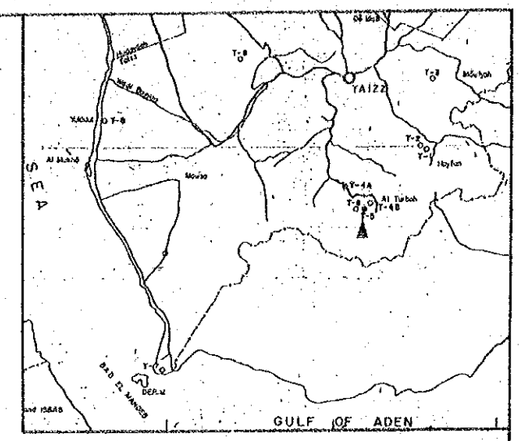


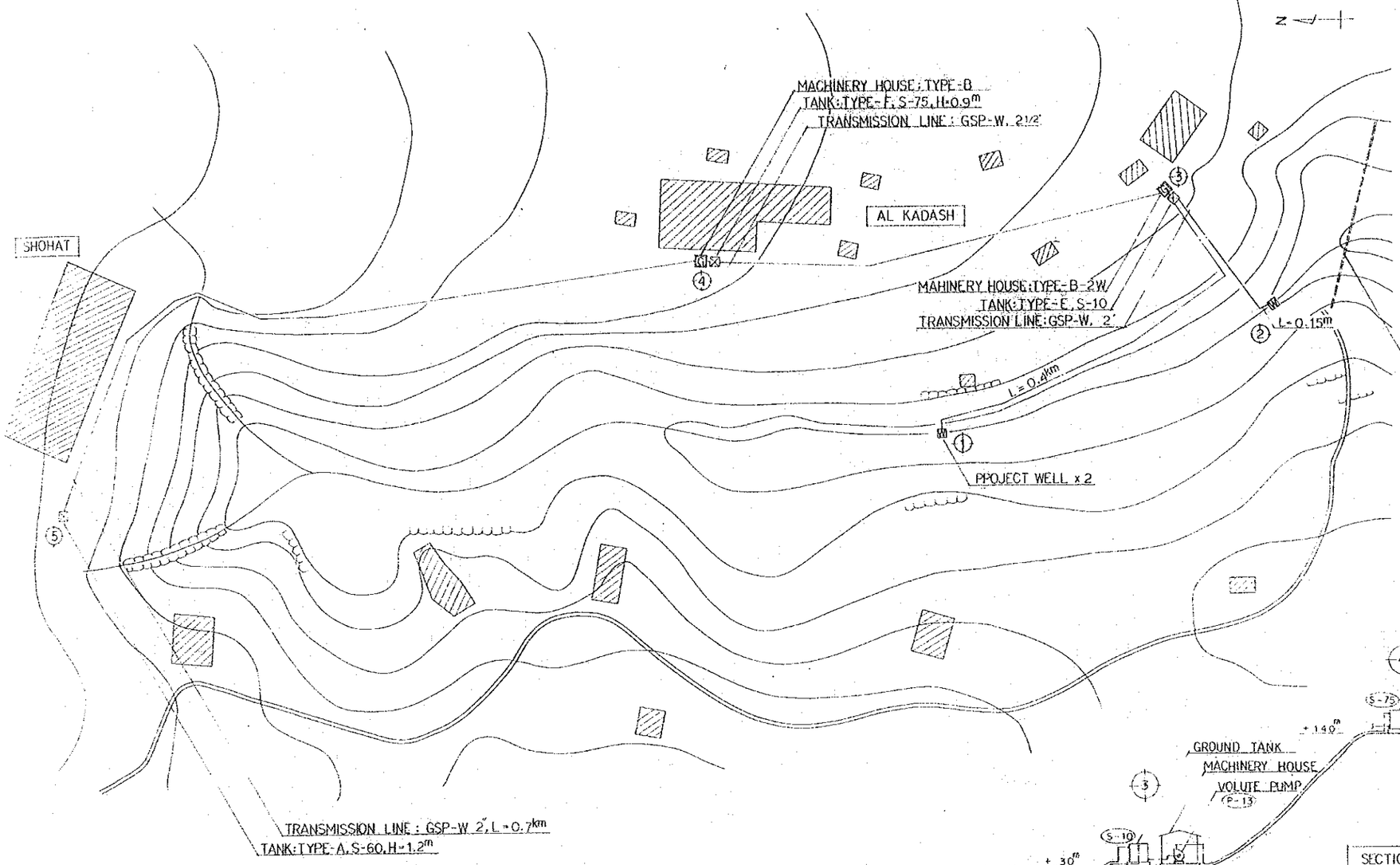




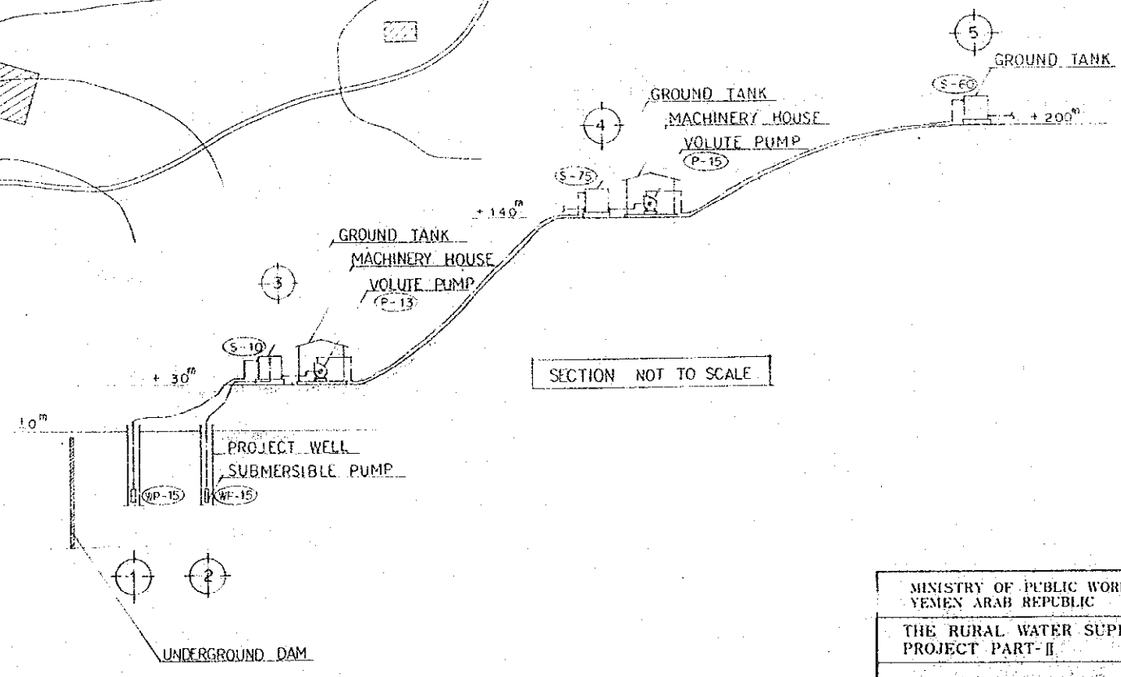
SECTION NOT TO SCALE

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
T-4B: AL-KUDHA, AL-HAGL	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:	DRAWING No. 24
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	





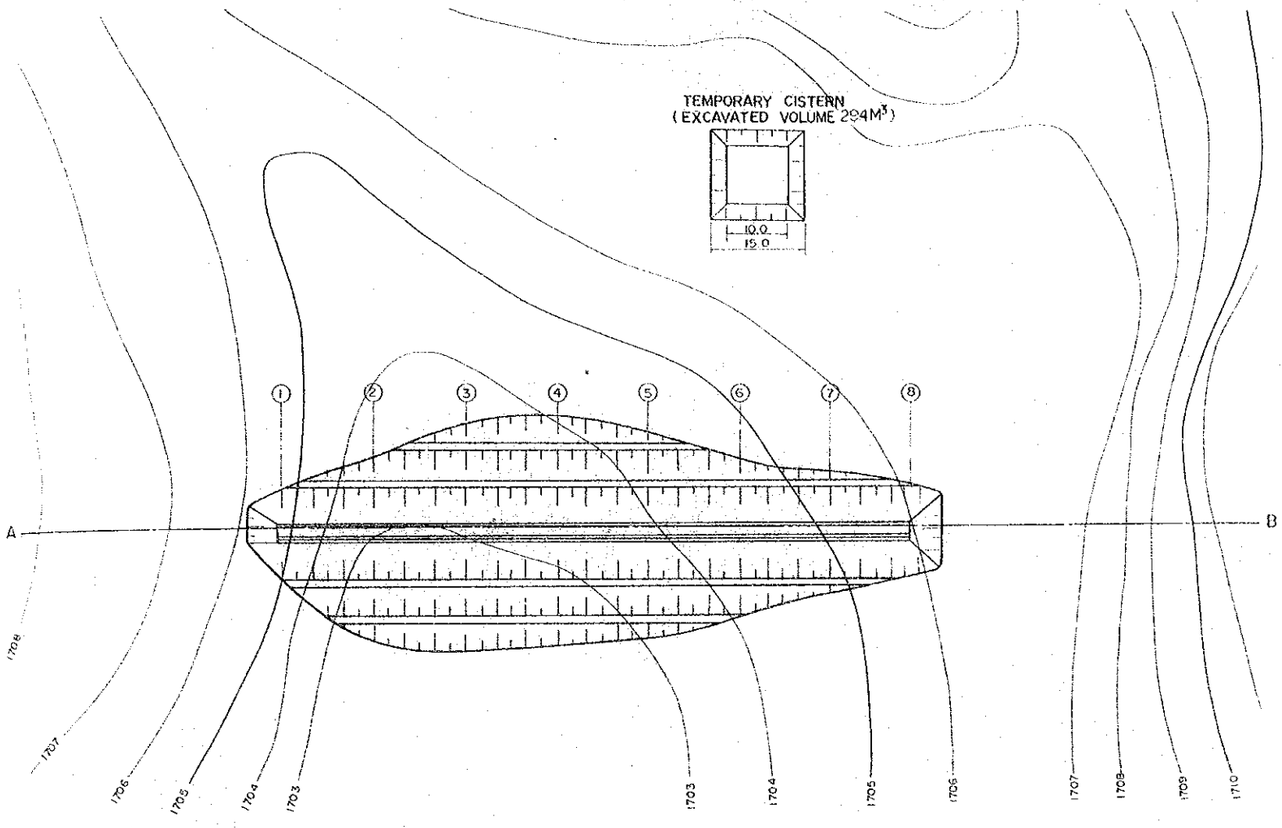
SHOHAT, AL KADASH SITE

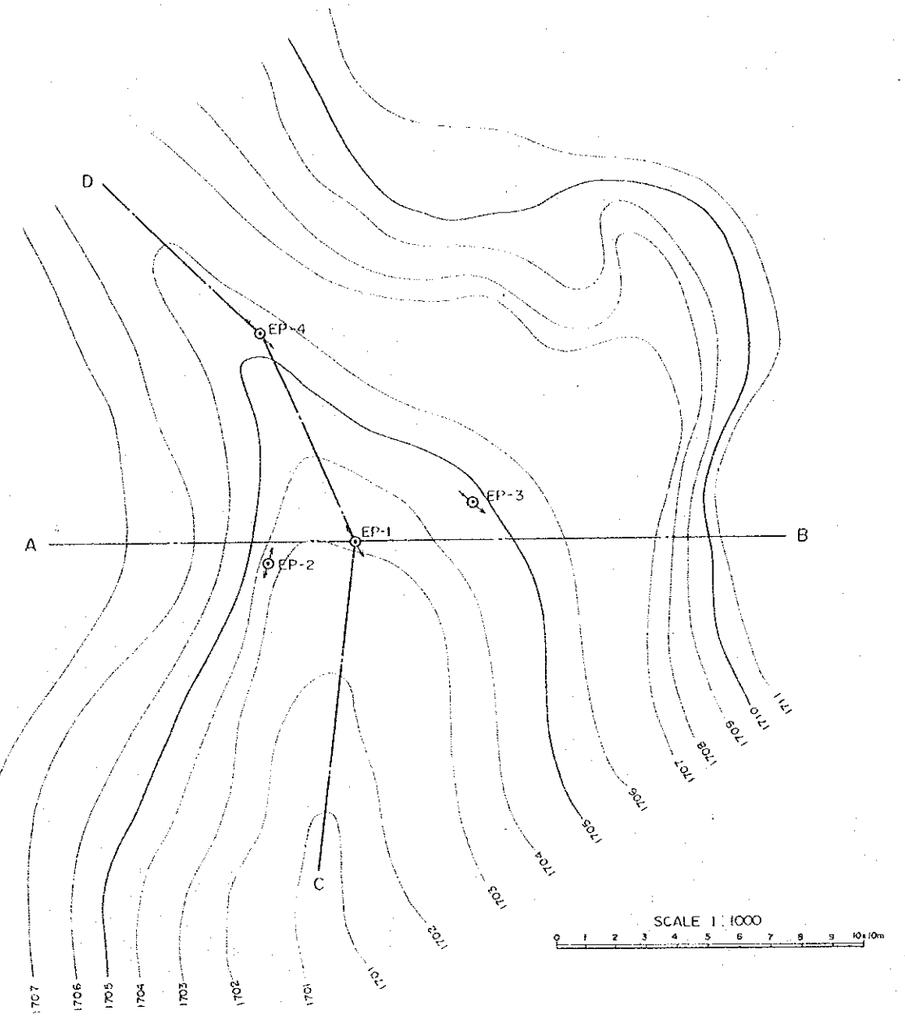


SECTION NOT TO SCALE

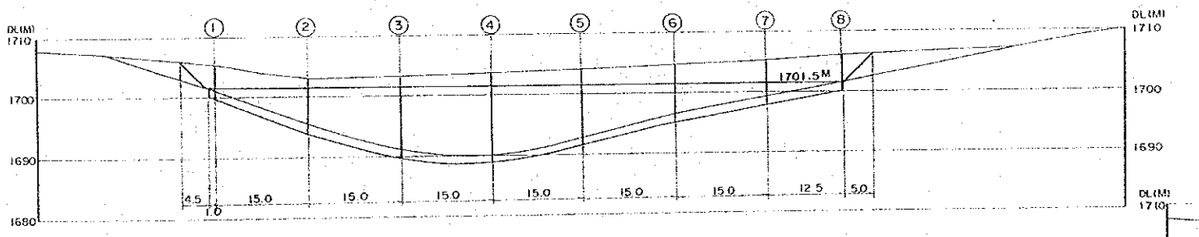
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
T-5 : SHOHAT, AL KADASH	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: DRAWING No. 25
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

LAYOUT PLAN SCALE = 1 / 500
(UNDERGROUND DAM)

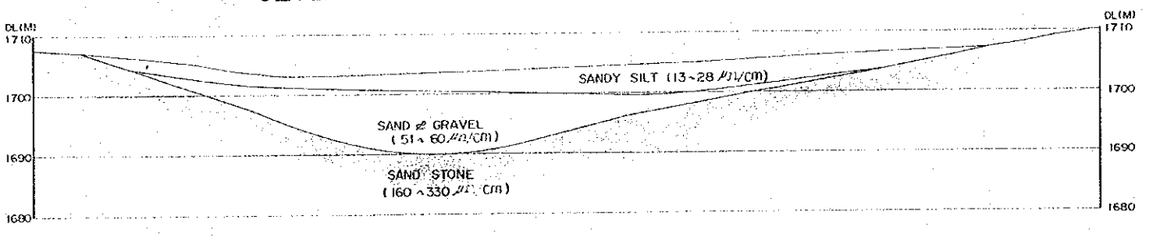




A - B SECTION SCALE = 1 / 500



GEOLOGICAL SECTION (A - B) SCALE = 1 / 500



ITEM \ NO.		⓪	①	②	③	④	⑤	⑥	⑦	⑧	TOTAL	REMARKS
VOLUME	SOIL (M³)	148.8	1,222.7	2,729.9	4,112.9	3,809.9	2,416.4	1,398.0	882.8	705.0	17,426.4	EXCAVATED VOLUME
	ROCK (M³)	5.0	69.0	67.5	66.8	67.5	82.5	66.0	67.5	57.2	549.0	EXCAVATED VOLUME
	CONCRETE(M³)	4.0	191.3	182.4	168.9	337.7	264.2	119.3	63.8	—	1,331.6	REINFORCED CONCRETE
	GRAVEL (M³)	—	532.3	1,741.7	2,651.6	2,295.2	1,260.6	460.1	120.8	—	9,062.3	RECLAIMED MATERIAL

MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

THE RURAL WATER SUPPLY PROJECT PART-II

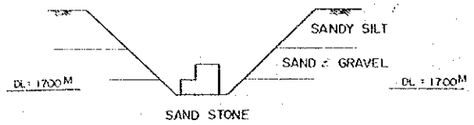
PLAN ELEVATION : UNDERGROUND DAM-(1)

DESIGNED BY | Pacific Consultants International

DATE MAY '80 | SCALE 1: | DRAWING No. 26

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

①



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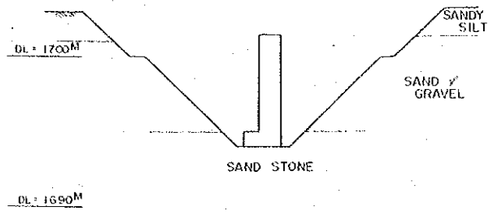

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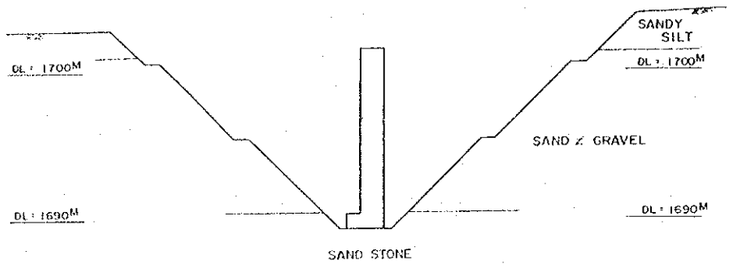

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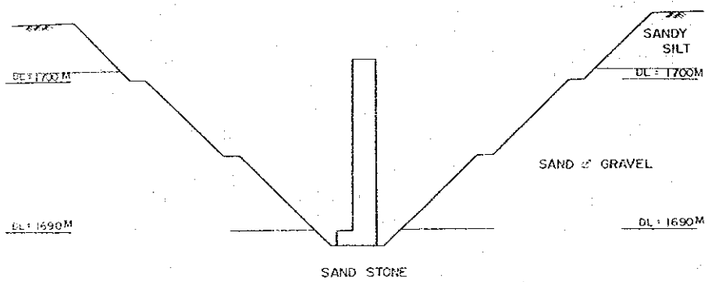

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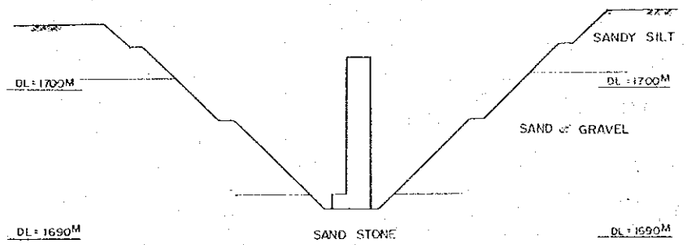

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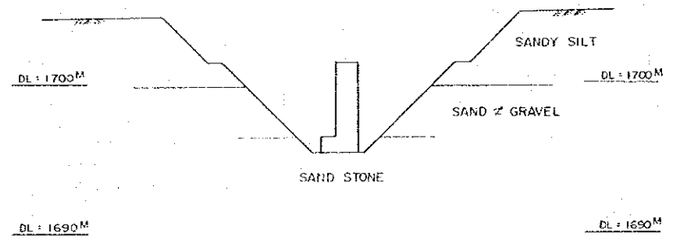

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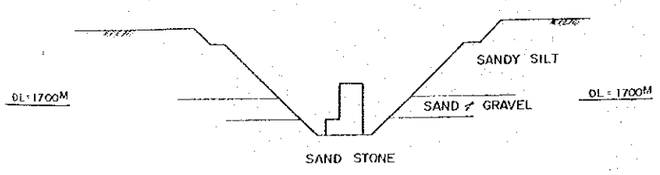

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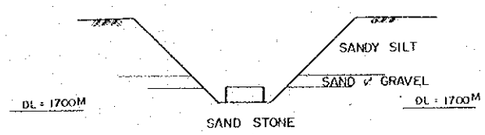


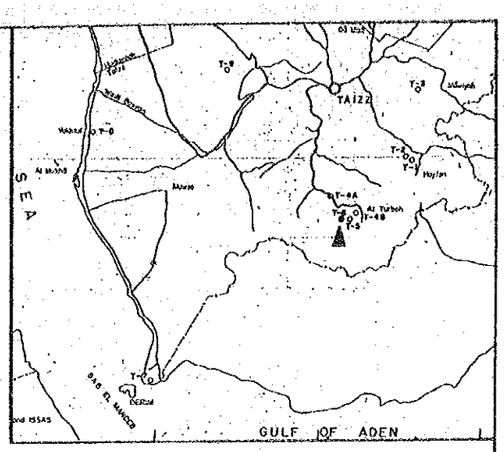
MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

THE RURAL WATER SUPPLY PROJECT PART-II

SECTION : UNDERGROUND DAM-(2)

DESIGNED BY	Pacific Consultants International		
DATE	MAY '80	SCALE 1:200	DRAWING No. 27

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN



TRANSMISSION LINE : GSP-W.2, L=0.4km
MACHINERY HOUSE : TYPE-B/W
PROJECT WELL
TANK : TYPE-E, S-5

MACHINERY HOUSE : TYPE-B-W
TANK : TYPE-F, S-75
TRANSMISSION LINE : GSP-W.3, L=0.2km

MACHINERY HOUSE : TYPE-B
TANK : TYPE-E, S-15
TRANSMISSION LINE : GSP-W.3, L=0.3km

PROJECT WELL
TRANSMISSION LINE : GSP-W.2, L=0.3km

MACHINERY HOUSE : TYPE-B
TANK : TYPE-E, S-15
TRANSMISSION LINE : GSP-W.3, L=0.4km

TANK : TYPE-B, S-210, H=1.6m

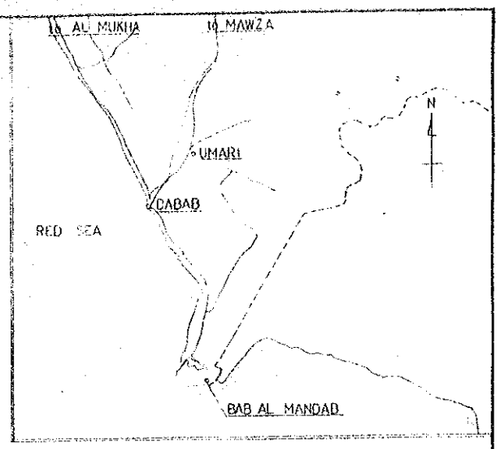
0 20 40 70 100 150 METRES

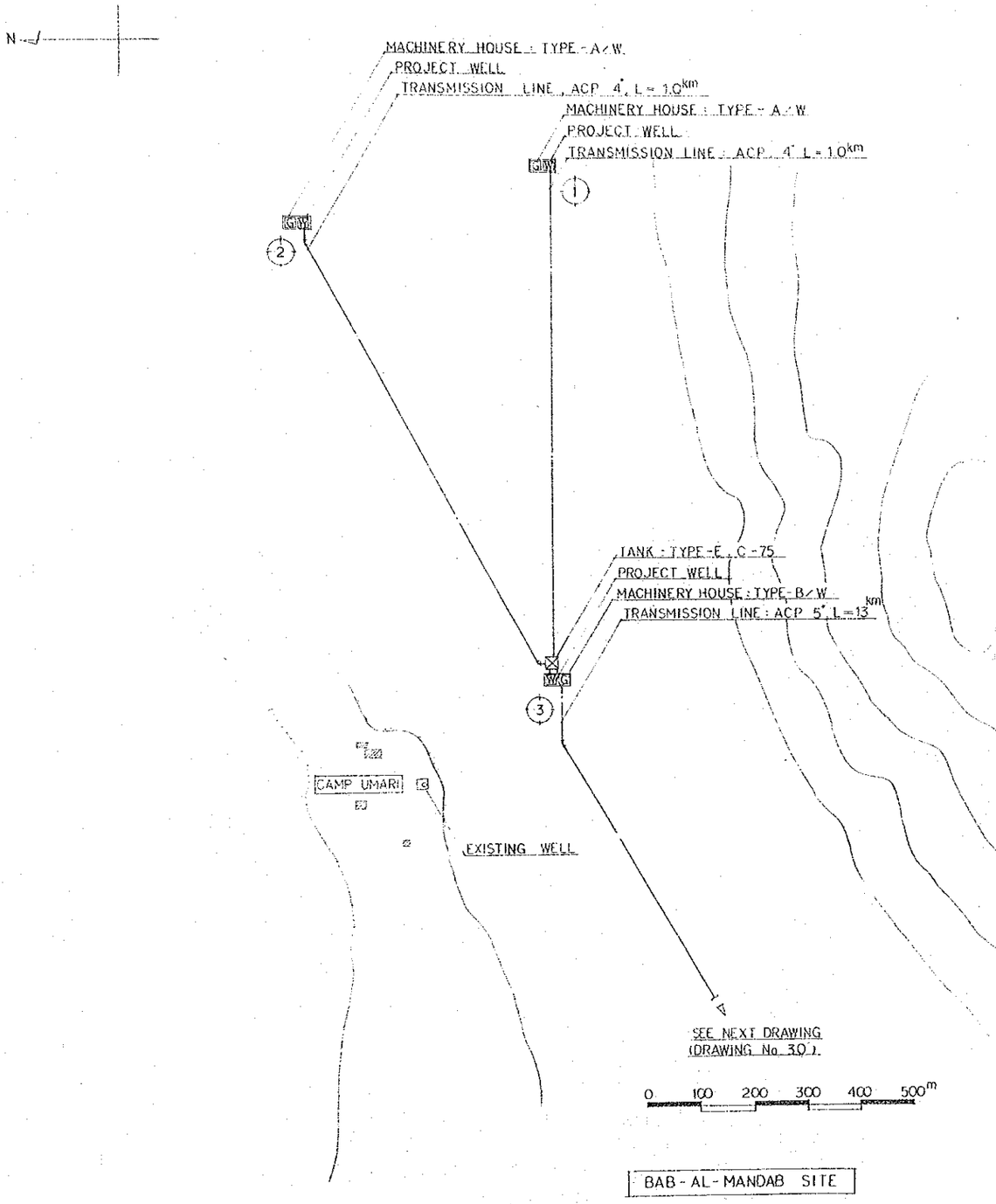
AL ZAKIRA

SECTION NOT TO SCALE

SEMI ELEVATED TANK
+455m
MACHINERY HOUSE
GROUND TANK (S-15)
+355m
VOLUTE PUMP (P-12)
MACHINERY HOUSE
GROUND TANK (S-10)
+225m
VOLUTE PUMP (P-11)
MACHINERY HOUSE
VOLUTE PUMP (P-9)
GROUND TANK (S-75)
+50m
+25m
PROJECT WELL
SUBMERSIBLE PUMP (WP-12)
MACHINERY HOUSE
VOLUTE PUMP (P-29)
GROUND TANK (S-15)
±0m
PROJECT WELL
SUBMERSIBLE PUMP (WP-12)

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC
THE RURAL WATER SUPPLY PROJECT PART-II
T-6 : AL-ZAKIRA
DESIGNED BY : Pacific Consultants International
DATE : MAY '80 SCALE 1: DRAWING No. 28
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN





BAB - AL - MANDAB SITE

No	PROJECT WELL	MACHINERY HOUSE TYPE	TANK TYPE	TANK TON	TANK H m	TRANSMISSION LINE ACP φ	TRANSMISSION LINE ACP km
1	○	A / W				4"	1.0
2	○	A / W				4"	1.0
3	○	B / W	E	C-75		5"	13.0
4	—	C	F	C-210	0.6	3"	2.0
5	—		C	S-40		5"	17.5
6	—	B	E	C-60		5"	17.5
7	—	B	E	C-768	0.5	6"	0.5
			C	S-156			

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
T-7 BAB-AL-MANDAB (1)	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: / DRAWING No. 29
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

N

0 1 2 3 4 5 km

BAB AL MANDAB

TRANSMISSION LINE : ACP-5", L = 17.5 km

UMAR1

TRANSMISSON LINE : ACP-5", L = 17.5 km

TRANSMISSION LINE (ACP-5", L=13.0 km

SEE THE DRAWING (No 29)

DABAB

TRANSMISSION LINE : ACP-3", L=2.0 km

MUKHA

RED SEA

UMAR1

MACHINERY HOUSE
PROJECT WELL
SUBMERSIBLE PUMP
(P-10)
C-75

MACHINERY HOUSE
PROJECT WELL
SUBMERSIBLE PUMP
(P-10)

GROUND TANK
MACHINERY HOUSE
VOLUTE PUMP (P-1)
PROJECT WELL
SUBMERSIBLE PUMP
(P-11)

DABAB

MAHINERY HOUSE
GROUND TANK
C-210
VOLUTE PUMP
(P-1) (P-22)
S-42

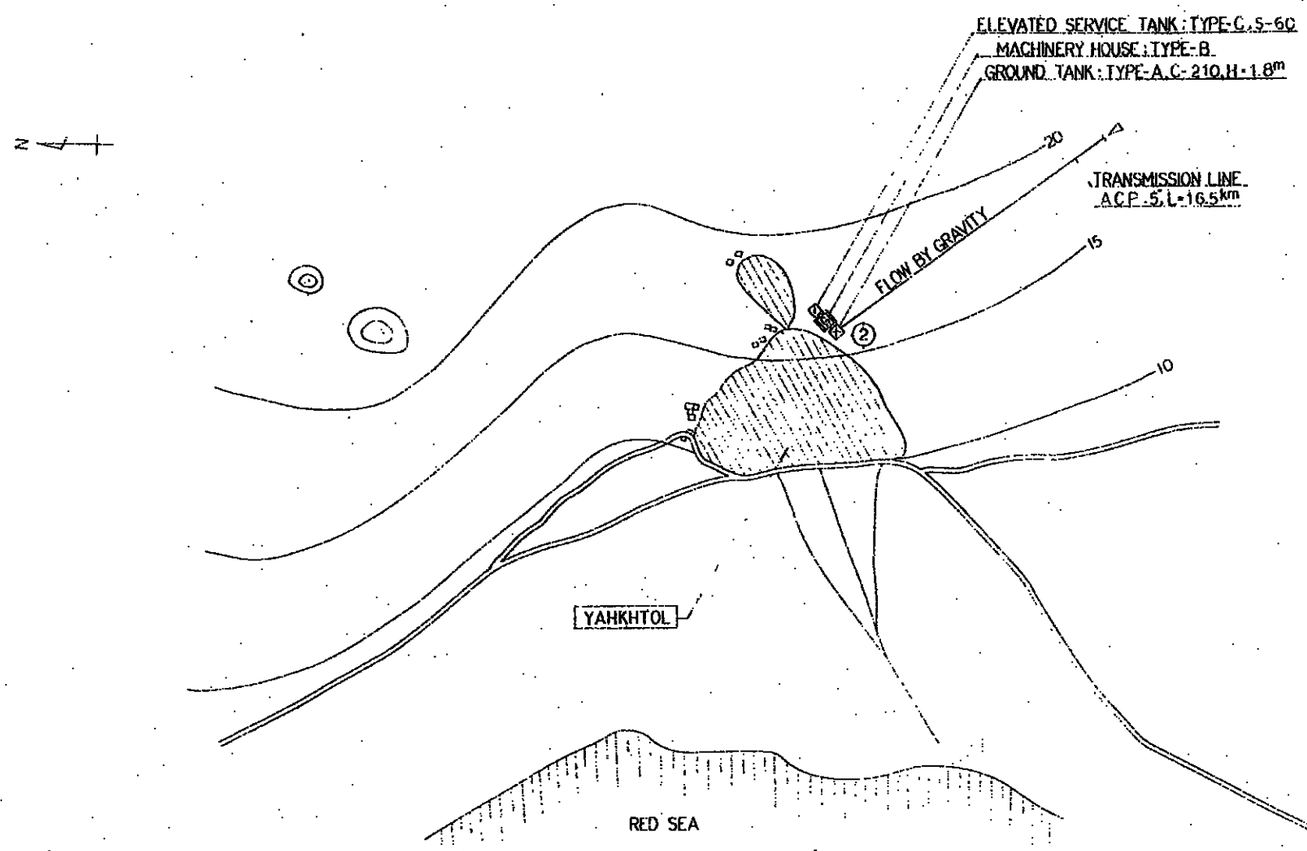
BAB AL MANDAB

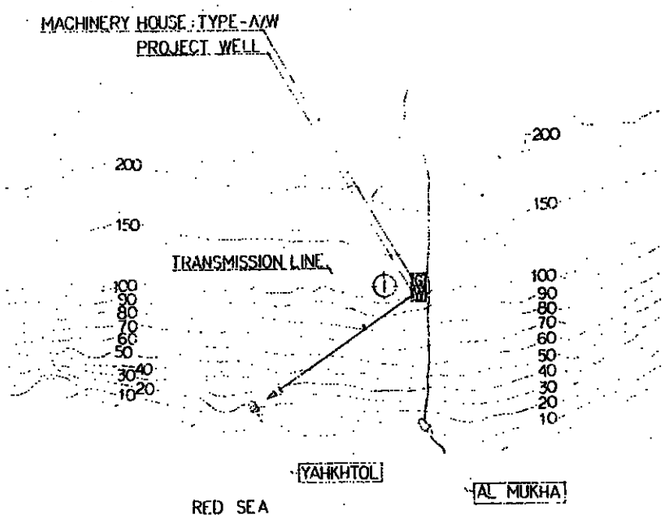
ELEVATED TANK
GROUND TANK
C-60
MACHINERY HOUSE
VOLUTE PUMP (P-1)
MACHINERY HOUSE
GROUND TANK
C-78
ELEVATED TANK
S-156
VOLUTE PUMP (P-15)

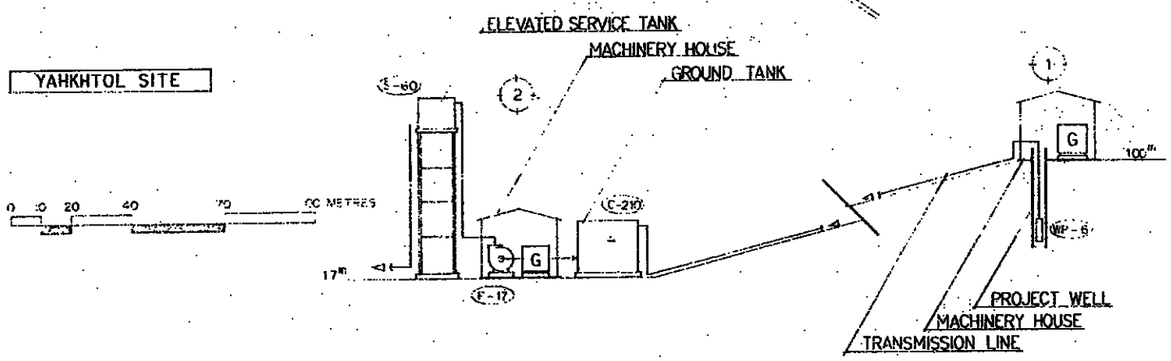
SECTION : NOT TO SCALE

BAB - AL - MANDAB SITE

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
T-7 BAB-AL-MANDAB (2)	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: — DRAWING No. 30
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

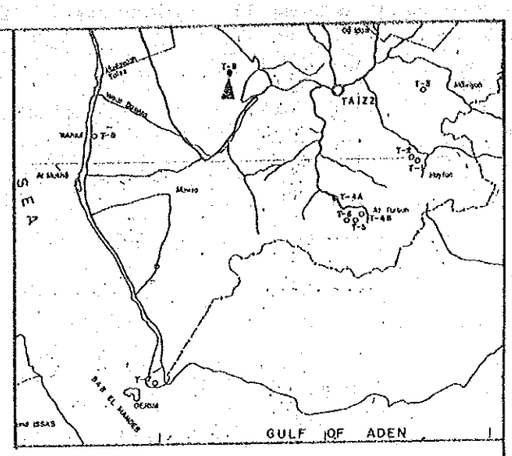


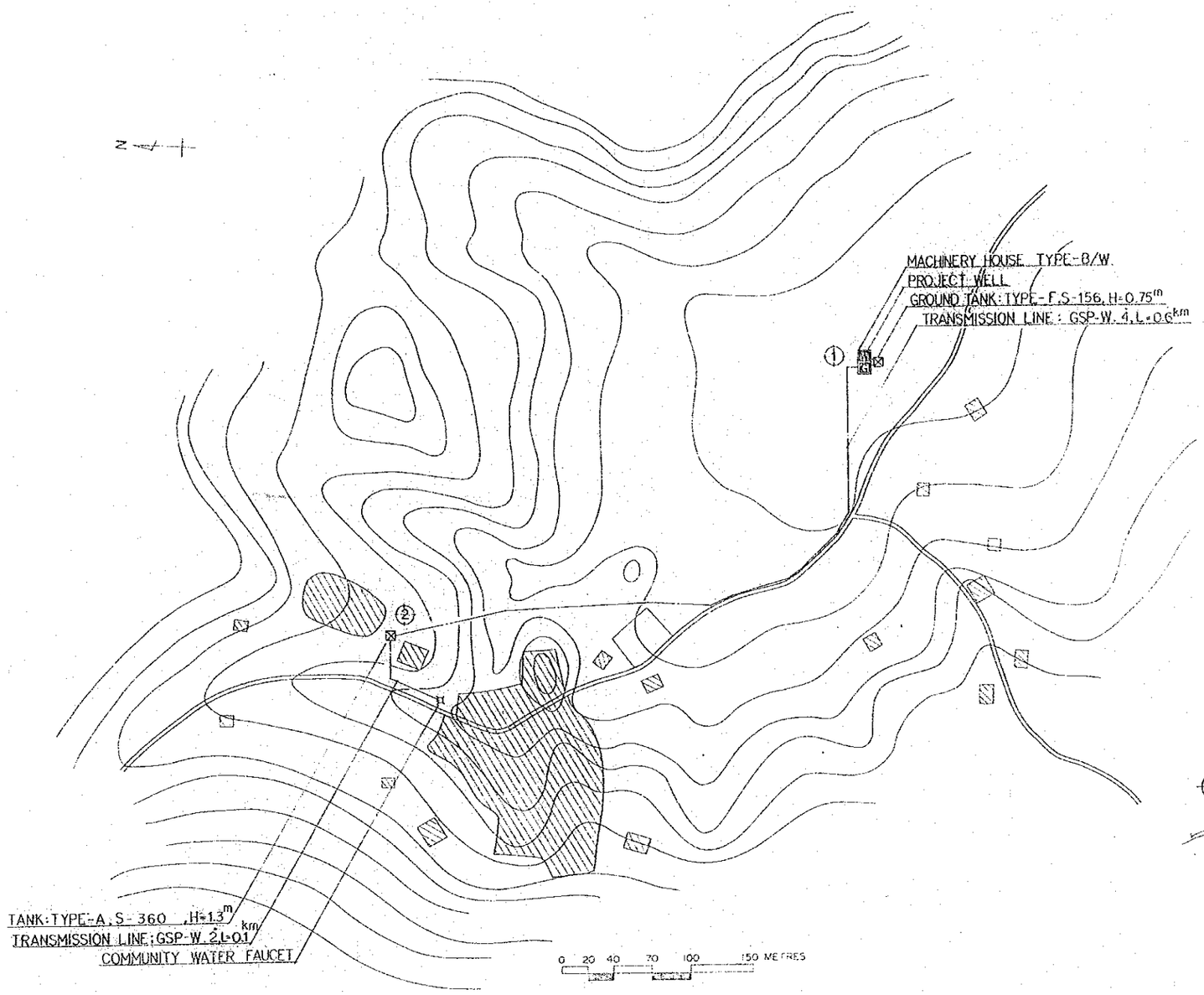




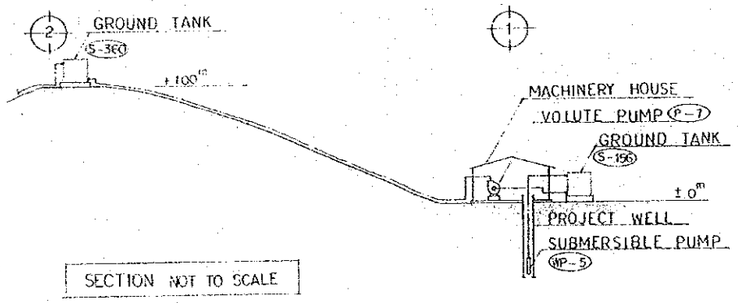
SECTION (NOT TO SCALE)

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC
THE RURAL WATER SUPPLY PROJECT, PART-II
T-8 : YAHKHTOL
DESIGNED BY Pacific Consultants International
DATE: MAY '80 SCALE 1: DRAWING No. 31
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN





MAKBANA



SECTION NOT TO SCALE

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
T-9 : MAKBANA	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: / DRAWING No. 32
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

GENERAL PLAN OF WATER SUPPLY SYSTEM -1

PROJECT SITES / GOVERNORATE	DISTRICT	SITE NO	SURVEY SITE	WATER SOURCE	FACILITY No	WELL DEPTH (m)	WELL PUMP TYPE	MACHINERY HOUSE TYPE	VOLUTE PUMP TYPE	GENERATOR RATED OUTPUT KVA	WATER TANK TYPE	WATER TANK CAPACITY ION	WATER TANK TYPE	WATER TANK CAPACITY ION	SERVICE FACILITIES: COMMUNITY WATER FAUCET	SERVICE FACILITIES: CATTLE TROUGH	SERVICE FACILITIES: DRAINAGE BASIN	REMARKS
HAJJA	AL AHNOON	HA — 1	AL-MADAN & 9 VILLAGES	2 WELLS	1	300	WP — 12	B — W	P — 2	175	E	S — 15						MAIN PIPE : 4", 3.0km 3", 2.0km 2½", 2.0km 2", 2.3km WELL PROTECTIONS ARE SET UP.
					2	300	WP — 12	B — W	P — 12	100	E	S — 30						
					3			B	P — 2	100	E	S — 30						
					4			B	P — 2	100	E	S — 30						
					5			B	P — 7	45	G	S — 120			F — 3		D — 3	
					6			B	P — 8	30	G	S — 120			F — 3		C — 3	
					7			C	P — 9, 27	60	D	S — 60						
					8						B	S — 120			F — 3		D — 3	
					9			B	P — 14	30	G	S — 120			F — 3		D — 3	
					10						B	S — 120			F — 3		D — 3	
		HA — 2	ELMAN & 4 OTHER VILLAGES	1 WELL	1	300	WP — 12	B — W	P — 10	100	E	S — 10						MAIN PIPE : 2", 2.1km 2½", 1.0km WELL PROTECTION IS SET UP.
					2			B	P — 10	45	G	S — 60			F — 2	L — 2	D — 2	
					3			B	P — 13	19	E	S — 5						
					4						B	S — 60			F — 2	L — 2	D — 2	
	SIHARA	HA — 3A	SIHARA	2 WELLS	1	300	WP — 12	B — W	P — 2	125	E	S — 15						MAIN PIPE : 4", 6.5km 3", 1.2km 2½", 1.6km 2", 1.7km
					2	300	WP — 12	B — W	P — 19	100	E	S — 30						
					3			B	P — 2	100	E	S — 30						
					4			B	P — 2	100	E	S — 30						
					5			B	P — 2	100	E	S — 30						
					6			B	P — 2	100	E	S — 30						
					7			C	P — 6, 10	75	D	S — 75						
					8						A	S — 210			F — 4x2		D — 4x2	
					9						A	S — 210			F — 4x2		D — 4x2	
	SIHARA	HA — 38	THARI	2 WELLS	1	200	WP — 13	B — W	P — 2	125	E	S — 15						MAIN PIPE : 4", 5.2km 2½", 2.8km WELL PROTECTIONS ARE SET UP.
					2	200	WP — 13	B — W	P — 20	60	E	S — 30						
					3			B	P — 2	100	E	S — 30						
					4			B	P — 2	100	E	S — 30						
					5			B	P — 2	100	E	S — 30						
					6			B	P — 3	100	E	S — 30						
					7			B	P — 22	30	F	S — 360			F — 5x3		D — 5x3	
					8						B	S — 324			F — 5x3		D — 5x3	
	HARAD	HA — 4	HARAD	3 WELLS	1	120	WP — 2	B / W	P — 16	60	A	C — 396	C	S — 156	F — 5x2	L — 4.5	D — 5x2	MAIN PIPE : 4", 0.8km
					2	120	WP — 1	A / W		60								
					3	120	WP — 2	B / W	P — 31	100	A	C — 864	C	S — 156	F — 4x3	L — 4x3	D — 4x3	

CLASSIFIED TYPE OF MACHINERY AND FACILITIES ARE SHOWN IN DRAWING No 37

MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

THE RURAL WATER SUPPLY PROJECT PART-II

GENERAL PLAN OF WATER SUPPLY SYSTEM - 1

DESIGNED BY | Pacific Consultants International

DATE MAY '80 | SCALE 1: | DRAWING No. 33

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

GENERAL PLAN OF WATER SUPPLY SYSTEM -2

PROJECT SITES / ITEMS				WATER SOURCE	FACILITY No	WELL DEPTH (m)	WELL PUMP TYPE	MACHINERY HOUSE TYPE	VOLUTE PUMP TYPE	GENERATOR RATED OUTPUT (KVA)	WATER TANK TYPE	WATER TANK CAPACITY (TON)	WATER TANK TYPE	WATER TANK CAPACITY (TON)	SERVICE FACILITIES: COMMUNITY WATER FAUCET	SERVICE FACILITIES: CATTLE TROUGH	SERVICE FACILITIES: DRAINAGE BASIN	REMARKS
GOVERNORATE	DISTRICT	SITE NO	SURVEY SITE															
AL MAHWEET	AL MAHWEET	A — 1	AL MAHWEET CITY	2 WELLS	1	200	WP — 13	B — W	P — 11	75	E	S — 15						MAIN PIPE : 3", 1.5km 4", 6.2km WELL PROTECTIONS ARE SET UP.
					2	200	WP — 13	B — W	P — 5	100	E	S — 30						
					3			B	P — 4	60	F	S — 156						
					4			B	P — 3	75	F	S — 156						
					5						A	S — 360			F — 4,5		D — 4.5	
		A — 2	HUFASH	1 WELL	1	200	WP — 13	B — W	P — 6	100	E	S — 10						MAIN PIPE : 3", 14.1km WELL PROTECTION IS SUT UP.
					2			B	P — 6	45	E	S — 10						
					3			B	P — 6	45	E	S — 10						
					4			B	P — 6	45	E	S — 10						
					5			B	P — 6	60	E	S — 10						
					6			B	P — 13	19	E	S — 10						
					7			B	P — 23	19	E	S — 10						
					8						A	S — 120			F — 3	L — 2	D — 3	
		A — 3	AL RAJAM	1 WELL	1	300	WP — 12	B — W	P — 26	100	E	S — 5						MAIN PIPE : $2^{1/2}$", 3.5km
					2						A	S — 60			F — 2	L — 2	D — 2	
		A — 4	AL KHABET	1 WELL	1	200	WP — 14	B / W	P — 9	60	E	S — 10						MAIN PIPE : $2^{1/2}$", 6.1km
					2			B	P — 9	45	E	S — 10						
					3						A	S — 120			F — 3	L — 2	D — 3	
SANA'A	AL SUHMAN	S — 1	BANY SHAKER & BAIT ABO SABA'A	1 WELL	1	200	WP — 13	B — W	P — 27	75	E	S — 5						MAIN PIPE : $2^{1/2}$", 0.81km
					2						A	S — 40			F — 1	L — 2	D — 1	
		S — 2	BAIT ABO HASHEM	1 WELL	1	200	WP — 13	C / W	P — 30,32	60	D	S — 10						MAIN PIPE : 2", 0.8km $1^{1/2}$", 0.4km
					2						B	S — 10			F — 1	L — 1	D — 1	
					3						B	S — 30			F — 1	L — 3	D — 1	
	BANISHADAD	S — 3	AL SHEAB AL ASWAD	1 WELL	1	100	WP — 13	A — W		60	D	S — 40						MAIN PIPE : 3", 0.45km $2^{1/2}$", 0.2km $1^{1/2}$", 0.6km
					2						A	S — 120			F — 2	L — 4,5	D — 2	
					3						A	S — 120			F — 2	L — 4,5	D — 2	
					4													
					5													
		S — 4	BANY FARHAN & BANY SHRIA'A	1 WELL	1	100	WP — 13	A / W		60	A	S — 40			F — 2	L — 3	D — 2	MAIN PIPE : 3", 0.25km
					2													

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
GENERAL PLAN OF WATER SUPPLY SYSTEM-2	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: DRAWING No. 34
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

GENERAL PLAN OF WATER SUPPLY SYSTEM -3

PROJECT SITES / ITEMS				WATER SOURCE	FACILITY No	WELL DEPTH (m)	WELL PUMP TYPE	MACHINERY HOUSE TYPE	VOLUTE PUMP TYPE	GENERATOR RATED OUTPUT KVA	WATER TANK TYPE	WATER TANK CAPACITY TON	WATER TANK TYPE	WATER TANK CAPACITY TON	SERVICE FACILITES COMMUNITY WATER FAUCET	SERVICE FACILITES CATTLE TROUGH	SERVICE FACILITES DRAINAGE BASIN	REMARKS
GOVERNORATE	DISTRICT	SITE NO	SURVEY SITE															
HODEIDAH	DURAIHMI	H — 1	GHULAYFAGAH	1 WELL	1	30	WP — 16	B / W	P — 29	19	A	C — 30	C	S — 10	F — 1	L — 1	D — 1	
	HODEIDAH	H — 2	AL DAHI	2 WELLS	1	80	WP — 4											MAIN PIPE : 4", 0.7km
					2	80	WP — 4	B / W-W	P — 31	125	A	C — 864 / 120	C	S — 156				
	ZUHRAH	H — 3	AL MOUNIRAH (to supply Ebn Abbas and Al Harunia)	1 WELL	1	60	WP — 8	A / W		30								MAIN PIPE : 4", 18.8km 3", 6.3km
					2			B	P — 18	19	F	C — 60						
					3			C	P — 25,30	45	F	C — 120	C	S — 30	F — 5	L — 1	D — 5	
					4			B	P — 29	12.5	A	C — 60	C	S — 15	F — 2	L — 1	D — 2	
	AL SULOU	T — 1	AL MASHJAB	1 WELL	1	110	WP — 8	A / W		45								MAIN PIPE : 3", 0.7km
					2						A	S — 75			F — 2	L — 4x2.5	D — 2	
		T — 2	AL MANARA & AL DUKUM	1 WELL	1	110	WP — 7	A / W		75								MAIN PIPE : 4", 1.1km 2½", 2.5km
					2						F	S — 40			F — 2	L — 4x3	D — 2	
					3						A	S — 40			F — 2	L — 4x3	D — 2	
	KADIER AL BURAIHI	T — 3	AL MAYDAN AL JUBAIL SHEIBD HAMUD	1 WELL	1	200	WP — 6	C / W	P — 23,25	125	D	S — 15						MAIN PIPE : 4", 3.0km
					2						A	S — 40			F — 1	L — 3	D — 1	
					3						A	S — 40			F — 1	L — 3	D — 1	
		T — 4A	HADAD, QAHFA	1 WELL	1	180	WP — 8	C / W	P — 24,26	75	D	S — 30						MAIN PIPE : 3", 0.7km 2½", 0.6km
					2						A	S — 75			F — 2	L — 3	D — 2	
					3						B	S — 60			F — 2	L — 4	D — 2	
TAIZ		T — 4B	AL KUDHA, AL HAGL	1 WELL	1	250	WP — 13	C / W	P — 32,33	100	D	S — 15						MAIN PIPE : 1½", 1.1km
					2						A	S — 60			F — 3		D — 3	
					3						A	S — 60			F — 3		D — 3	
	AL TURBA	T — 5	SHOHAT, AL KADASH	UNDERGROUND DAM + 2 WELLS	1	30	WP — 15											MAIN PIPE : 2", 1.25km 2½", 0.4km
					2	30	WP — 15											
					3			B — 2W	P — 13	60	E	S — 10						
					4			B	P — 27	19	F	S — 75			F — 2	L — 4	D — 2	
					5						A	S — 60			F — 2	L — 4	D — 2	
		T — 6	AL ZAKIRA	2 WELL	1	250	WP 12	B / W	P — 29	75	E	S — 15						MAIN PIPE : 2", 0.42km 3", 0.9km
					2	250	WP 12											
					3			B — W	P — 9	125	F	S — 75			F — 1		D — 1	
					4			B	P — 11	30	E	S — 10						
					5			B	P — 12	30	E	S — 15						
					6						B	S — 210			F — 3,4		D — 3,4	

MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

THE RURAL WATER SUPPLY PROJECT PART-II

GENERAL PLAN OF WATER SUPPLY SYSTEM-3

DESIGNED BY | Pacific Consultants International

DATE | MAY '80 | SCALE 1: | DRAWING No. 35

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

GENERAL PLAN OF WATER SUPPLY SYSTEM -4

PROJECT SITES / ITEMS				WATER SOURCE	FACILITY No	WELL DEPTH	WELL PUMP	MACHINERY HOUSE	VOLUTE PUMP	GENERATOR RATED OUTPUT	WATER TANK				SERVICE FACILITIES			REMARKS
GOVERNORATE	DISTRICT	SITE NO	SURVEY SITE			(m)	TYPE	TYPE	TYPE	* KVA	TYPE	CAPACITY ** TON	TYPE	CAPACITY TON	COMMUNITY WATER FAUCET	CATTLE TROUGH	DRAINAGE BASIN	
TAIZ	BAB AL MANDAB	T — 7	BAB AL MANDAB	3 WELLS	1	85	WP — 10	A / W		30								MAIN PIPE : 6" 05 km
					2	85	WP — 10	A / W		30								5" 48.0
					3	85	WP — 11	B / W	P — 1	150	E	C — 75						4" 2.0
					4			C	P — 1,22	150	F	C — 210						3" 2.0
					5						C	S — 40			F — 3	L — 1	D — 3	
					6			B	P — 1	150	E	C — 60						
					7			B	P — 15	30	E	C — 768	C	S — 156	F — 4x3	L — 1	D — 4x3	
	MOAAH	T — 8	YAHKHTOL	1 WELL	1	100	WP — 6	A / W		45								
					2			B	P — 17	19	A	C — 210	C	S — 60	F — 4x2	L — 5x4	D — 4x2	MAIN PIPE : 5" 16.5 km
	MAKBANA	T — 9	MAKBANA	1 WELL	1	300	WP — 5	B / W	P — 7	100	F	S — 156			F — 3	L — 1	D — 3	MAIN PIPE : 4" 0.6 km
					2						A	S — 360			F — 5x2	L — 5	D — 5x2	

* GENERATOR RATED OUTPUT These are the output indications at sea level.

** CAPACITY C — 210 S — 210

- C — 210: CONCRETE TANK, CAPACITY 210 ton
- S — 210: STEEL TANK, CAPACITY 210 ton

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
GENERAL PLAN OF WATER SUPPLY SYSTEM -4	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: DRAWING No. 36
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

EQUIPMENT SCHEDULE

TYPE	NO	PUMP SPECIFICATION DIAMETER (mmΦ)	QUANTITY OF FLOW (l/min)	HEAD (m)	NO OF STAGE	POWER OUT-PUT (kw)	Q.T.Y	SITE NO
SUBMERSIBLE PUMP	WP－1	100	690	137	9	30.0	1	HA-4 (1)
	－2	100	690	116		26.0	2	HA-4 (2)
	－3	100	690	81		22.0	1	H－2 (1)
	－4	100	690	70		19.0	1	H－2 (1)
	－5	80	480	228		30.0	1	T－9 (1)
	－6	80	690	116		26.0	2	T－3 (1), T－8 (1)
	－7	65	270	224		30.0	1	T－2 (1)
	－8	65	340	172		19.0	2	T－1 (1), T－4A (1)
	－9	65	340	96		15.0	1	H－3 (1)
	－10	65	340	67		11.0	2	T－7 (2)
	－11	65	340	62		7.5	1	T－7 (1)
	－12	50	200	222		30.0	8	HA-1 (2), HA-2 (1), HA-3A (2), A－3 (1), , T－6 (2)
	－13	50	200	180		19.0	10	HA-3B (2), A－1 (2), A－2 (1), S－1 (1), S－2 (1), S－4 (1), T－4B (1), S－3 (1)
	－14	50	130	117		11.0	1	A－4 (1)
	－15	50	65	65		7.5	2	T－5 (2)
	－16	50	70	34		3.7	1	H－1 (1)
VOLUTE PUMP	P－1	100 80	810	200	4	55.0	3	T－7 (3)
	－2	80－65	400	234	5	37.0	12	HA-1 (3), HA-3A (5), HA-3B (4)
	－3	80－65	400	177	4	30.0	2	HA-3B (1), A－1 (1)
	－4	80－65	400	138	3	22.0	1	A－1 (1)
	－5	80－65	400	132	3	18.5	1	A－1 (1)
	－6	50	200	240	6	18.5	6	HA-3A (1), A－2 (5)
	－7	50	32	132	4	15.0	2	HA-1 (1), T－9 (1)
	－8	50	240	122	4	11.0	1	HA-1 (1)
	－9	40	210	200	11	15.0	4	HA-1 (1), A－4 (2), T－6 (1)
	－10	40	100	237	10	15.0	2	HA-2 (2)
	－11	40	210	152	8	11.0	2	T－6 (1), A－1 (1)
	－12	40	210	120	7	11.0	2	HA-1 (1), T－6 (1)
	－13	40	200	121	6	7.5	3	HA-2 (1), A－2 (1), T－5 (1)
	－14	40	80	127	6	5.5	1	HA-1 (1)
	－15	125	1200	37	2	150	1	T－7 (1)
	－16	100	690	27	2	7.5	1	HA-4 (1)
	－17	80	450	28	2	5.5	1	T－8 (1)
	－18	65	340	41	4	5.5	1	H－3 (1)
	－19	50	200	90	9	7.5	1	HA-3A (1)
	－20	50	200	70	8	5.5	2	HA-3A (1), HA-3B (1)
	－21							
	－22	50	200	53	6	5.5	2	HA-3B (1), T－7 (1)
	－23	50	200	49	5	3.7	2	A－2 (1), T－3 (1)
	－24	50	200	34	4	3.7	1	T－4A (1)
	－25	50	200	28	3	2.2	2	H－3 (1), T－3 (1)
	－26	40	140	73	8	3.7	2	A－3 (1), T－4A (1)
	－27	40	130	57	7	3.7	3	HA-1 (1), S－1 (1), T－5 (1)
	－28							
	－29	40	140	28	4	2.2	3	H－1 (1), H－3 (1), T－6 (1)
	－30	40	140	18	3	1.5	2	S－2 (1), H－3 (1)
	－31	150	2760	30	1	22.0	2	HA-4 (1), H－2 (1)
	－32	40	40	36		1.5	2	S－2 (1), T－4B (1)
	－33	40	35	49		2.2	1	T－4B (1)

MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

THE RURAL WATER SUPPLY PROJECT PART-II

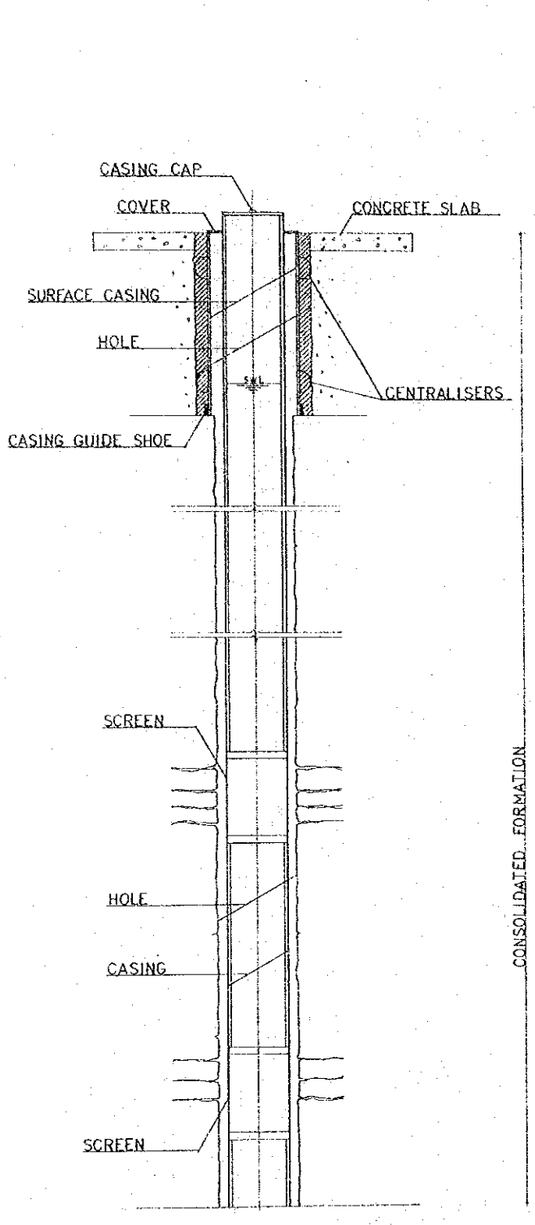
EQUIPMENT SCHEDULE

DESIGNED BY | Pacific Consultants International

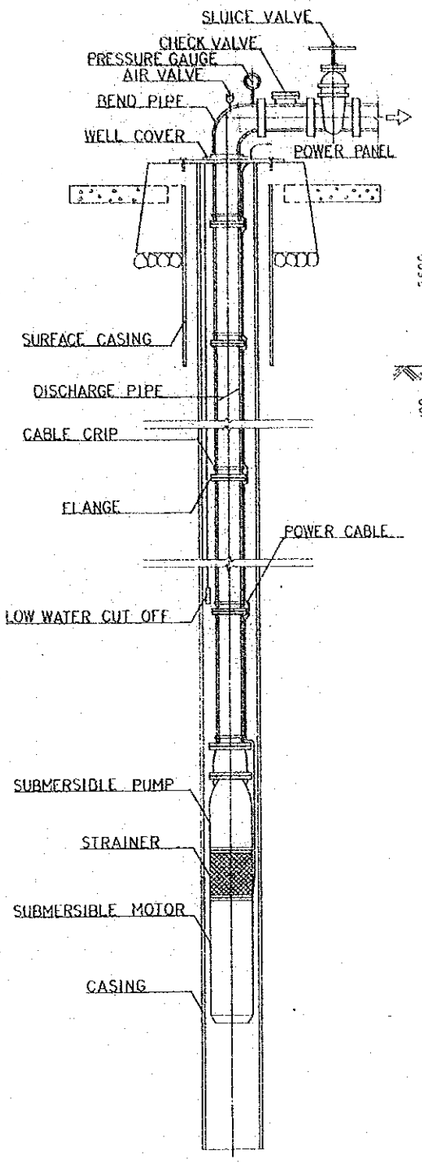
DATE MAY '80 | SCALE 1: | DRAWING No. 37

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

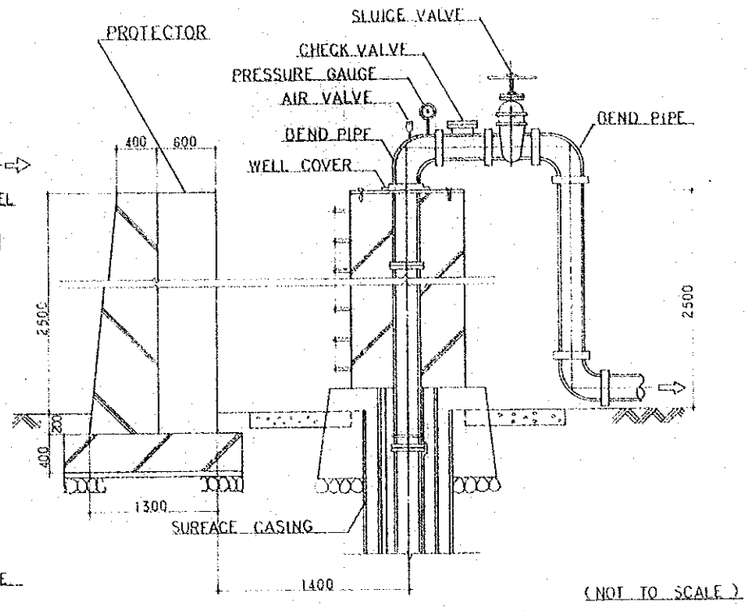
D. WATER WELL



TYPICAL SECTION OF WATER WELL
(FOR CONSOLIDATED FOMATION)



DETAIL OF
SUBMERSIBLE PUMP INSTALLATION



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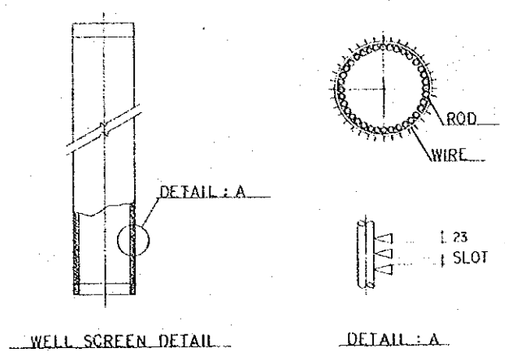


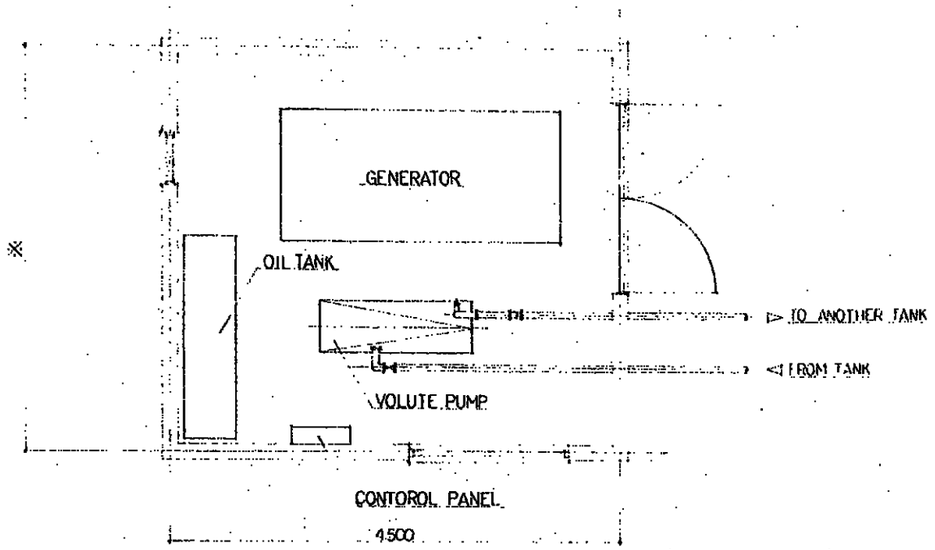
WELL SCREEN DETAIL

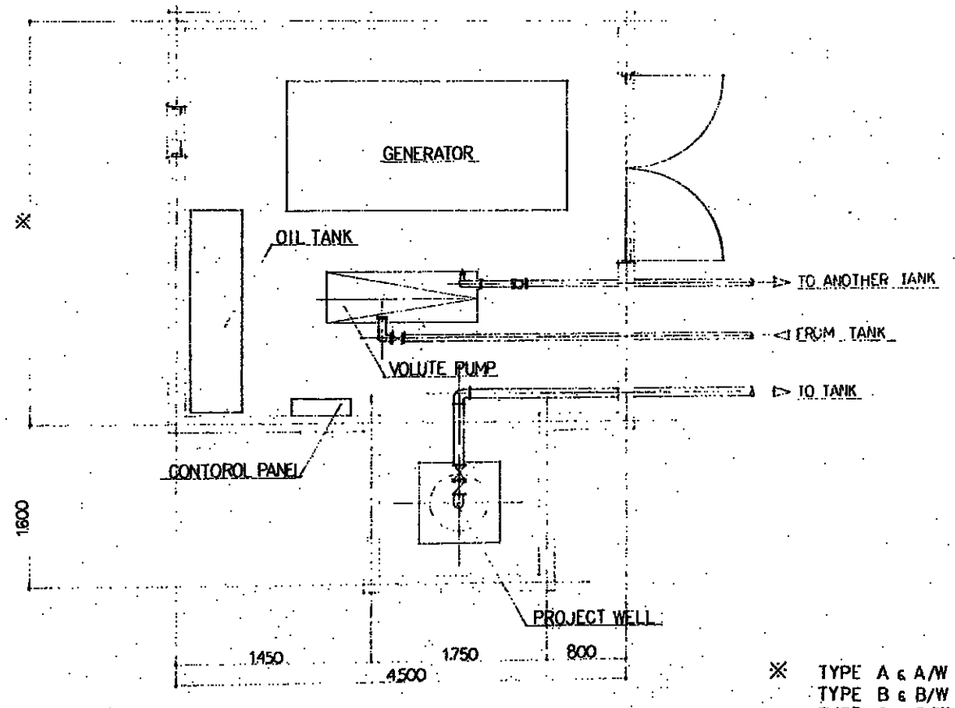
DETAIL : A

(NOT TO SCALE)

(NOT TO SCALE)

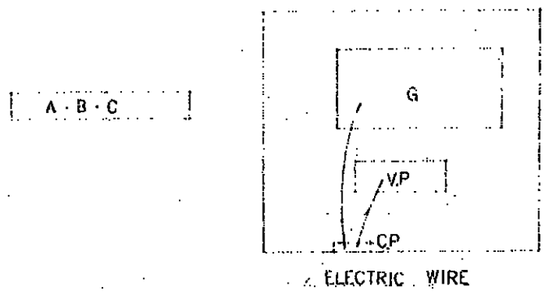
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
PROJECT WELL OF CONSOLIDATED FORMATION	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: / DRAWING No. 38
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

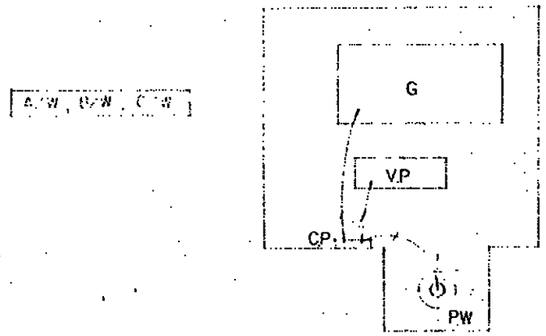


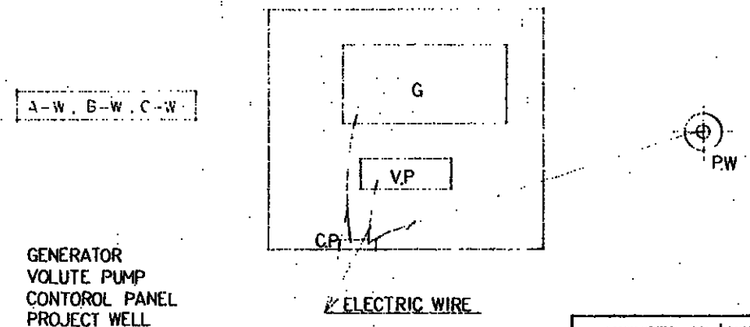


※ TYPE A & A/W --- 2900
TYPE B & B/W --- 4000
TYPE C & C/W --- 5000

TYPICAL LAYOUT OF WATER WELL & MACHINERY HOUSE







G GENERATOR
V.P VOLUTE PUMP
C.P CONTOROL PANEL
P.W PROJECT WELL

EXPLANATION OF MACHINERY HOUSES

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
TYPICAL LAYOUT OF WATER WELL & MACHINERY HOUSE	
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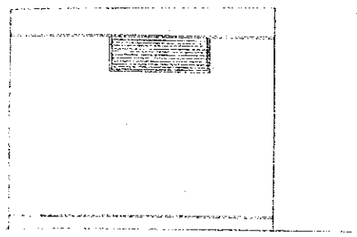
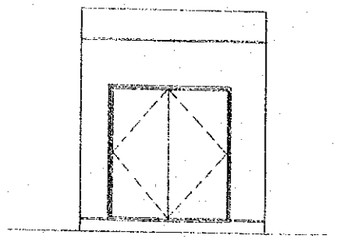
DATE MAY '80	SCALE 1:30 / DRAWING No. 39
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

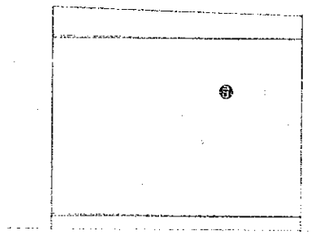
E. BUILDING WORKS



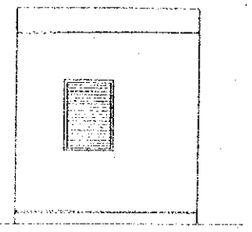
FRONT VIEW



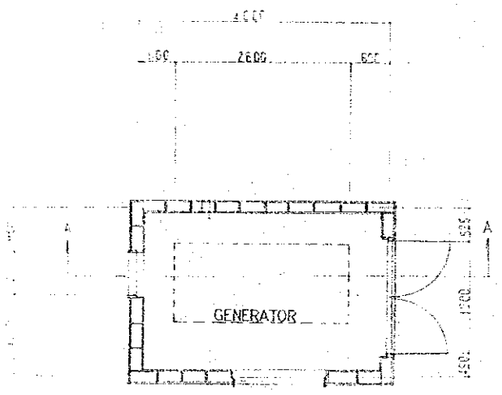
RIGHT SIDE VIEW



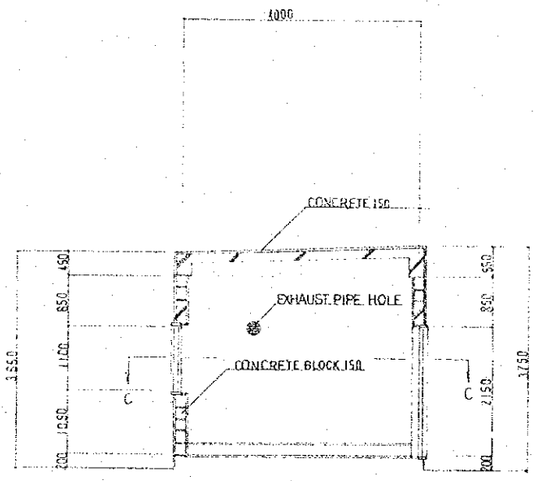
BACK VIEW



LEFT SIDE VIEW

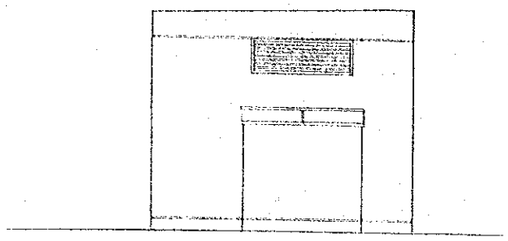


SECTION C—C

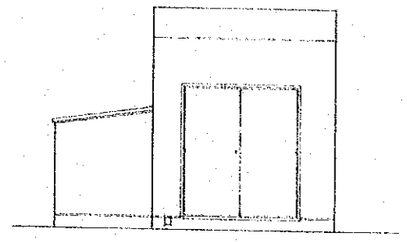


SECTION A—A

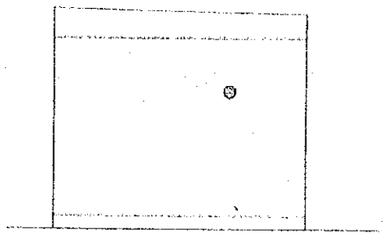
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
MACHINERY HOUSE: TYPE – A	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50 / DRAWING No. 40
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



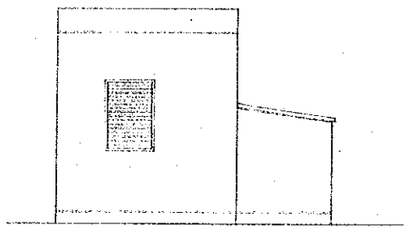
FRONT VIEW



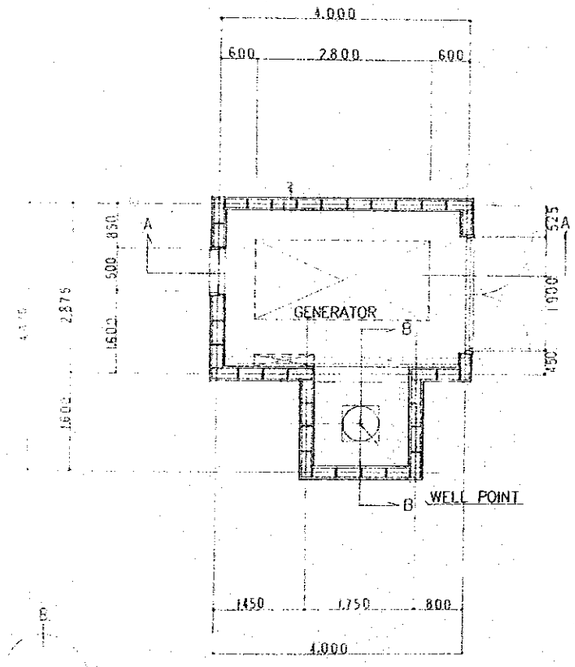
RIGHT SIDE VIEW



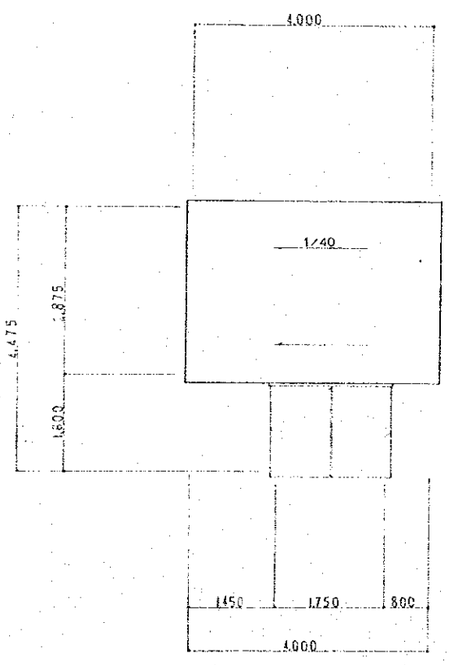
BACK VIEW



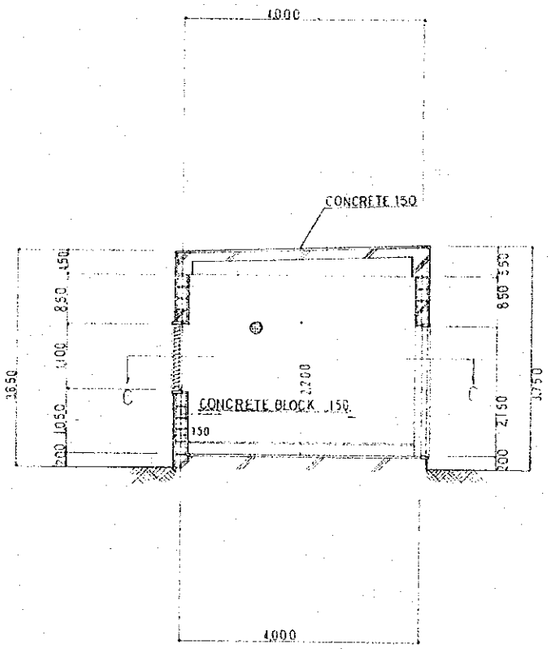
LEFT SIDE VIEW



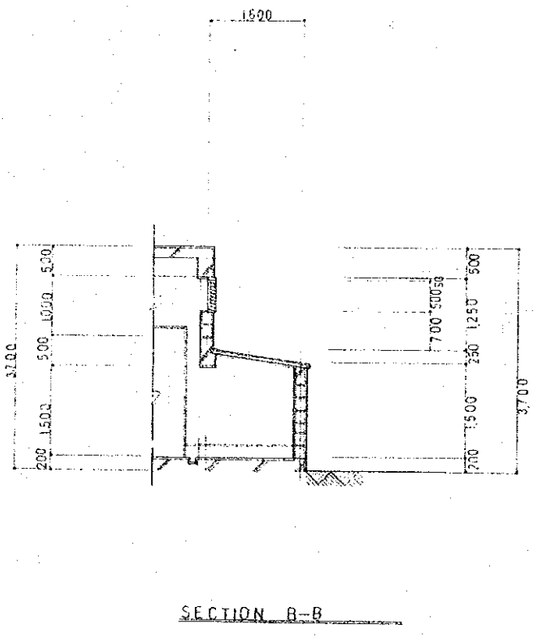
SECTION C—C



ROOF PLAN

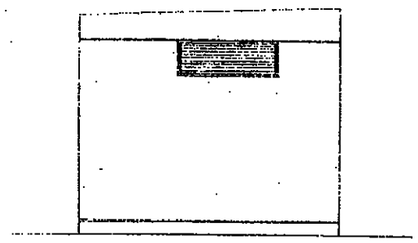


SECTION A—A

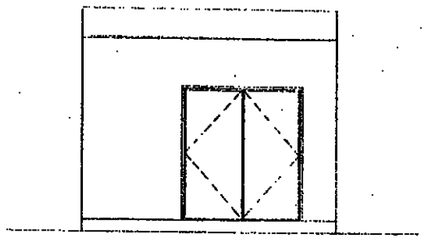


SECTION B—B

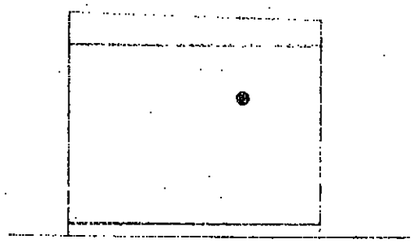
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
MACHINERY HOUSE : TYPE-A/W	
DESIGNED BY	Pacific Consultants International
DATE MAY 80	SCALE 1:50 DRAWING No. 41
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



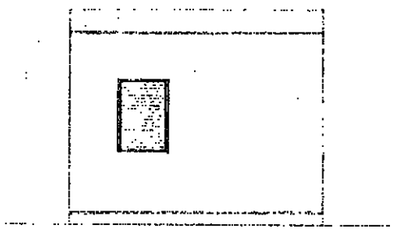
FRONT VIEW



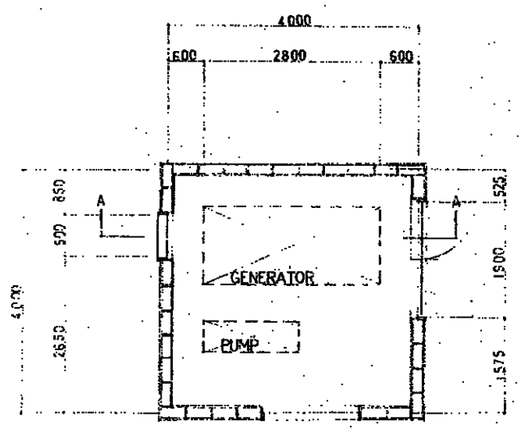
RIGHT SIDE VIEW

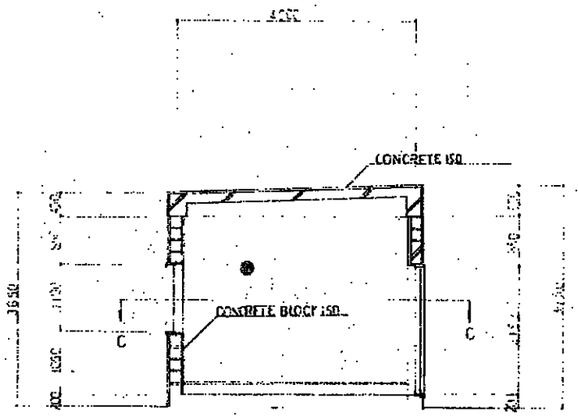


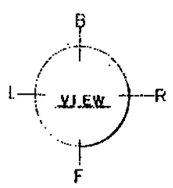
BACK VIEW



LEFT SIDE VIEW



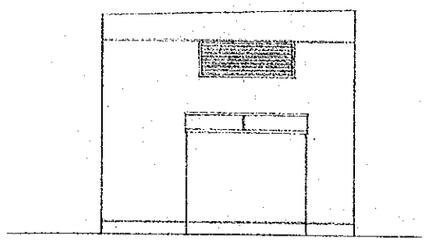




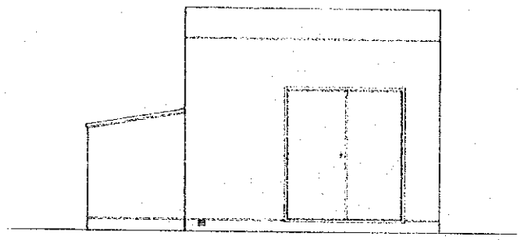
SECTION C-C

SECTION A-A

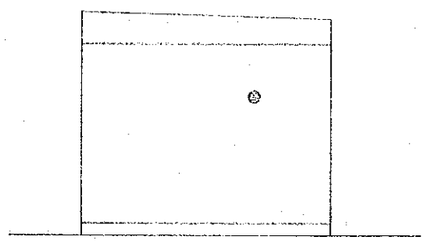
MINISTRY OF PUBLIC WORKS, YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
MACHINERY HOUSE : TYPE - B	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50 / DRAWING No. 42
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



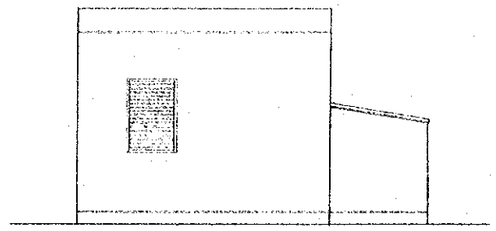
FRONT VIEW



RIGHT SIDE VIEW



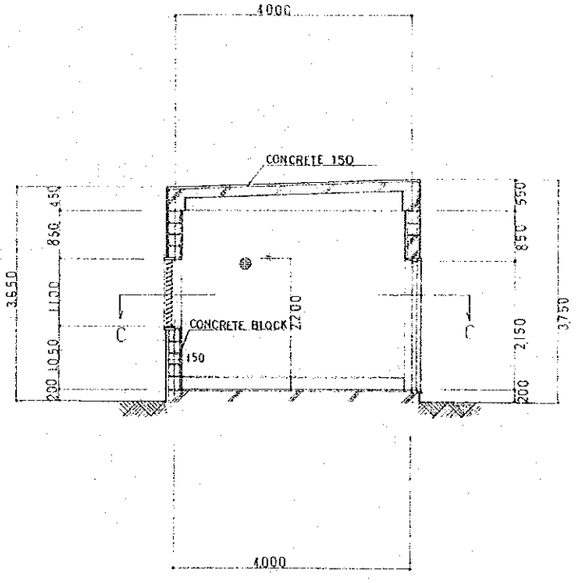
BACK VIEW



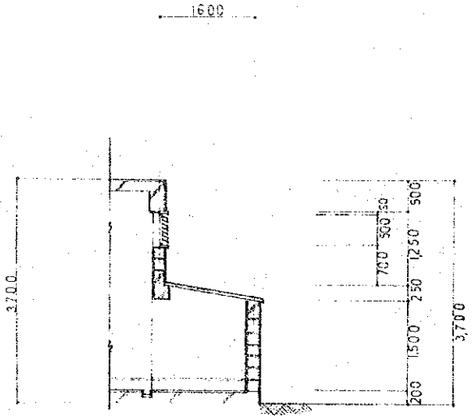
LEFT SIDE VIEW

SECTION C-C

ROOF PLAN

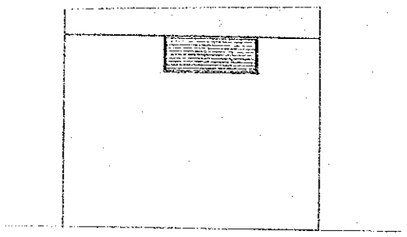


SECTION A-A

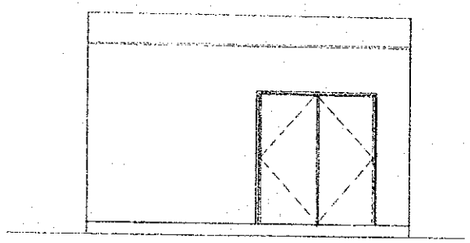


SECTION B-B

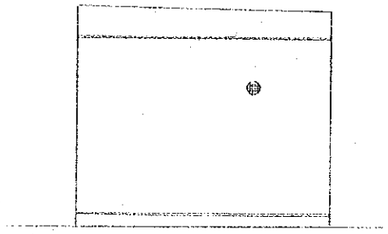
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
MACHINERY HOUSE : TYPE-B/W	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50 / DRAWING No. 43
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



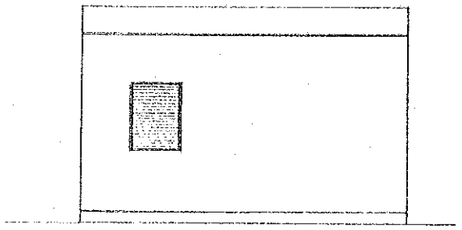
FRONT VIEW



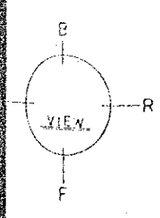
RIGHT SIDE VIEW



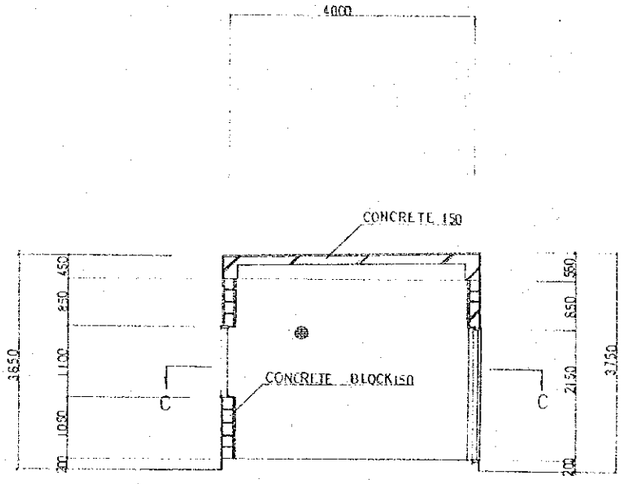
BACK VIEW



LEFT SIDE VIEW

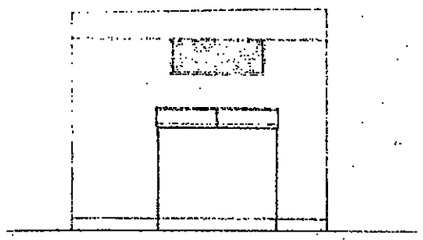


SECTION C-C

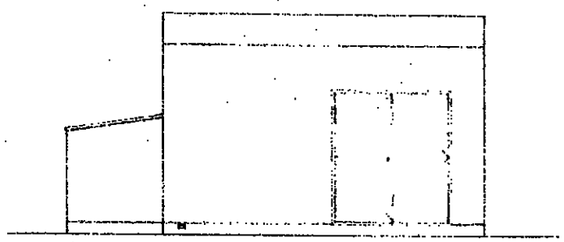


SECTION A-A

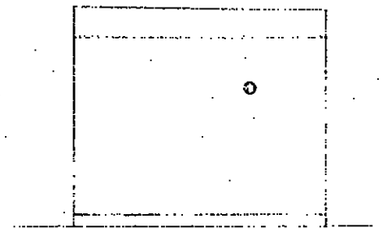
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
MACHINERY HOUSE: TYPE-C	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: 50 / DRAWING No. 44
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



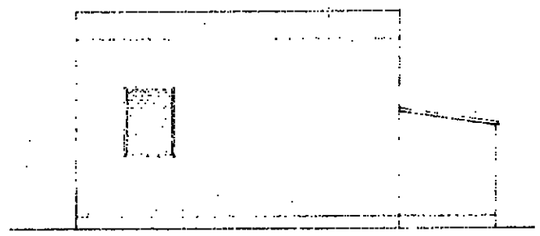
FRONT VIEW



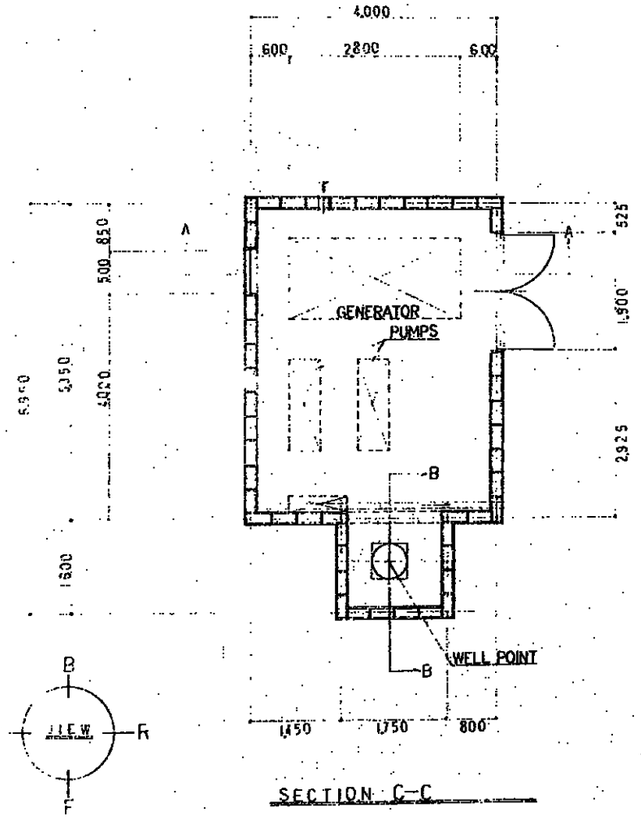
RIGHT SIDE VIEW



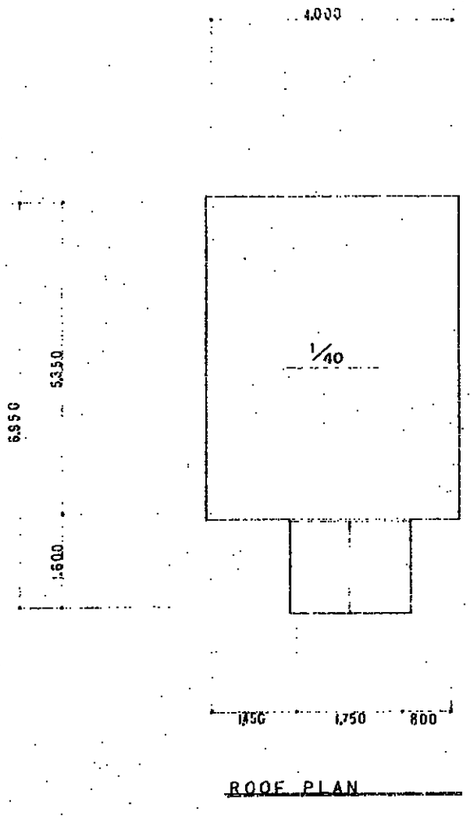
BACK VIEW



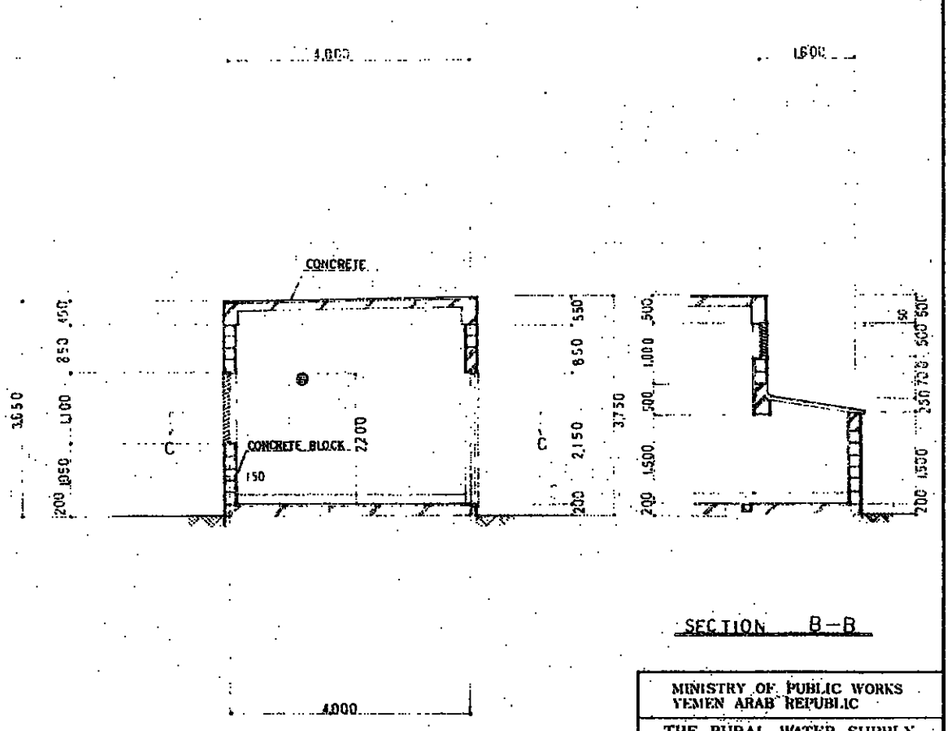
LEFT SIDE VIEW



SECTION C-C



ROOF PLAN



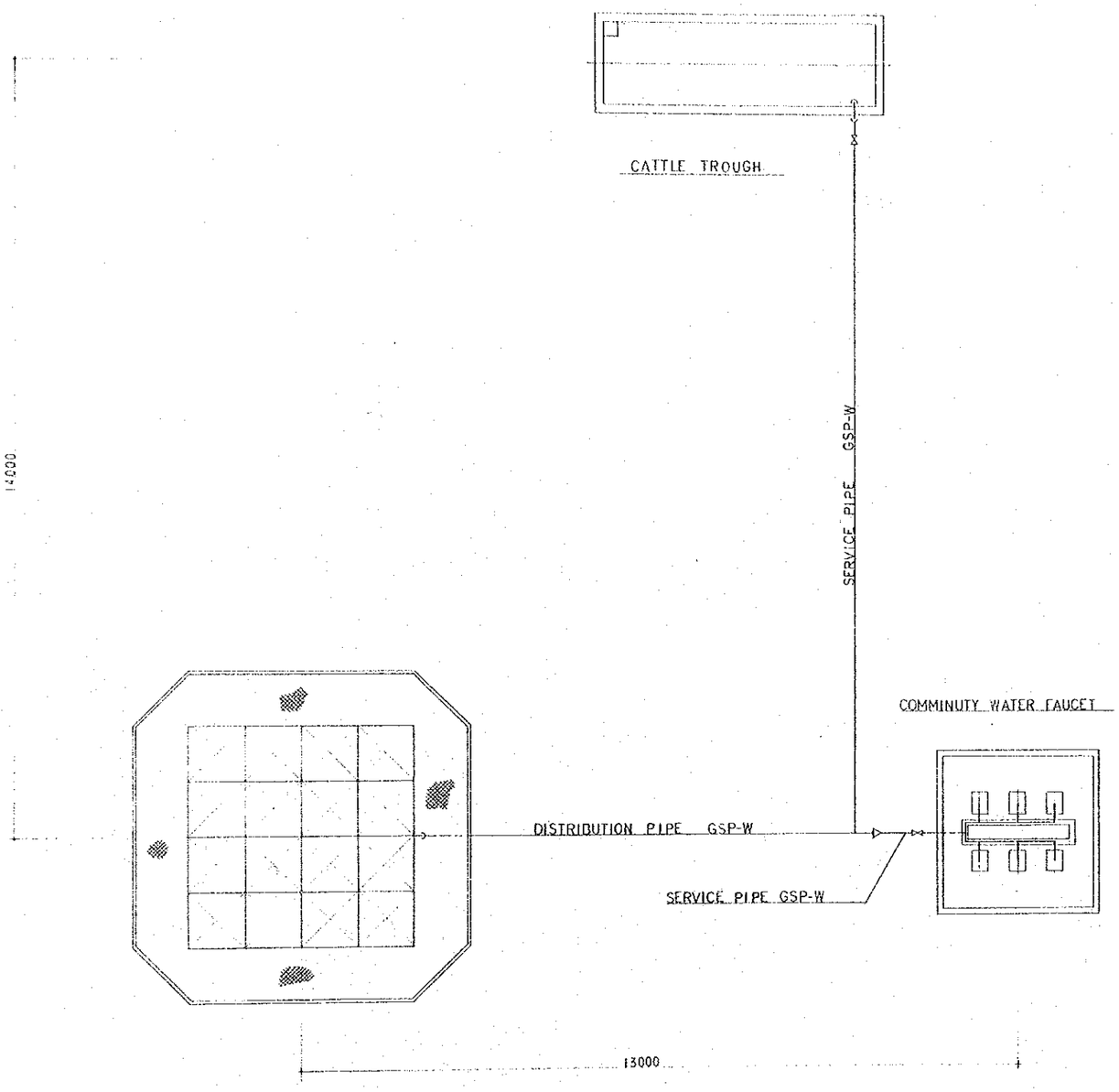
SECTION B-B

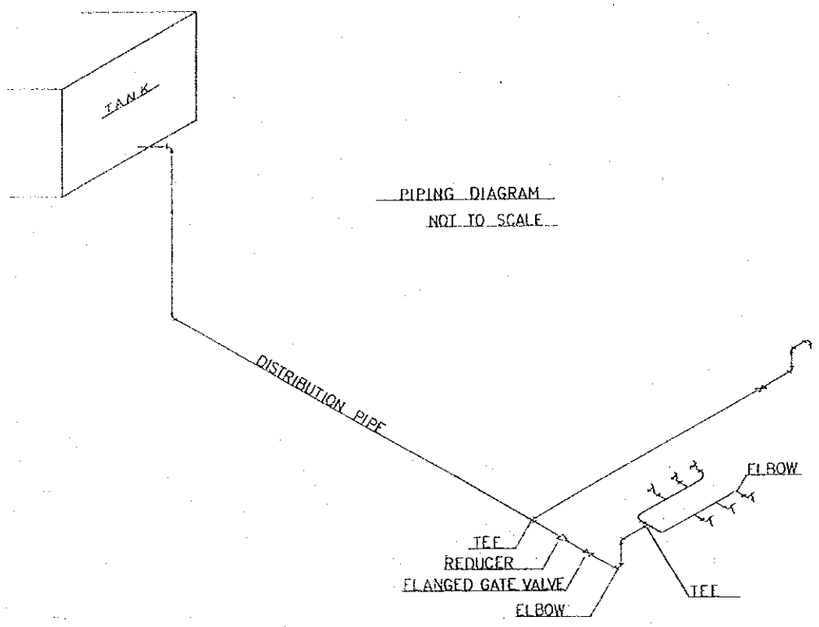
SECTION A-A

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
MACHINERY HOUSE : TYPE- C/W	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50 / DRAWING No. 45
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

F. WATER SUPPLY WORKS

TYPICAL LAYOUT PLAN

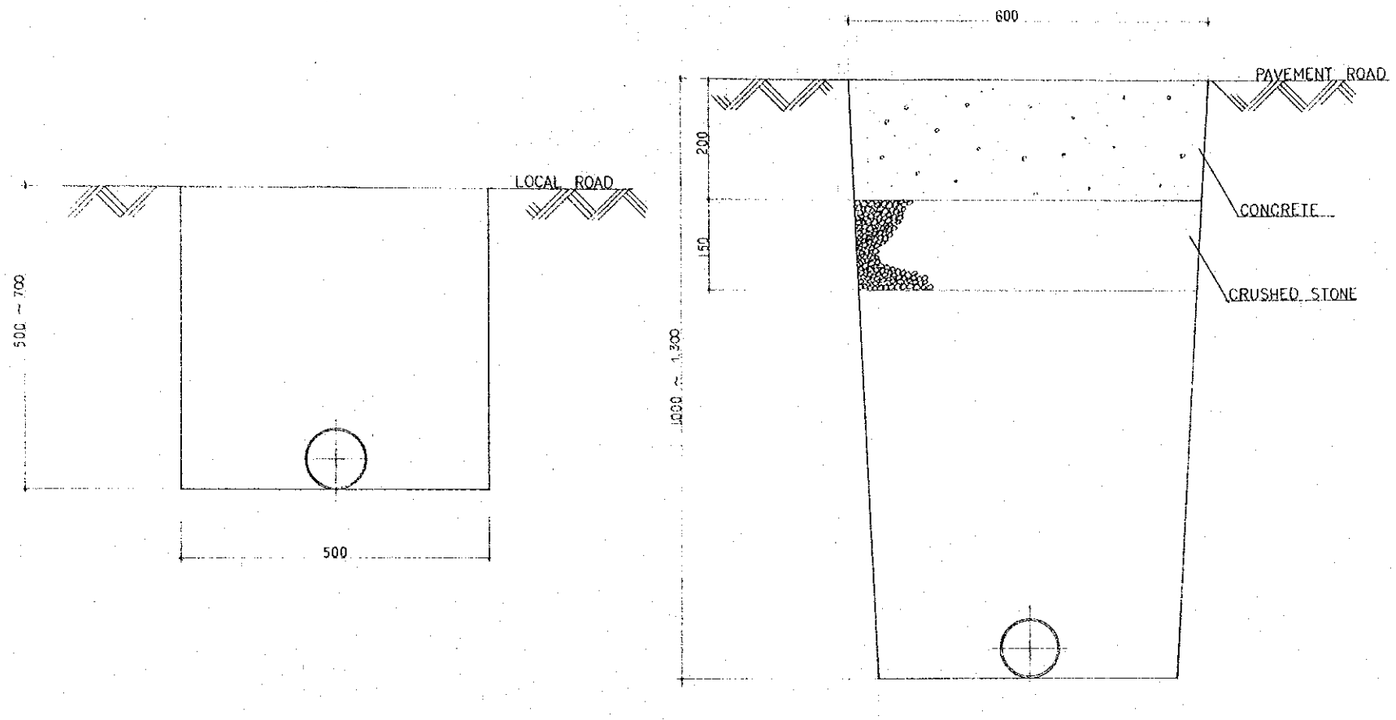




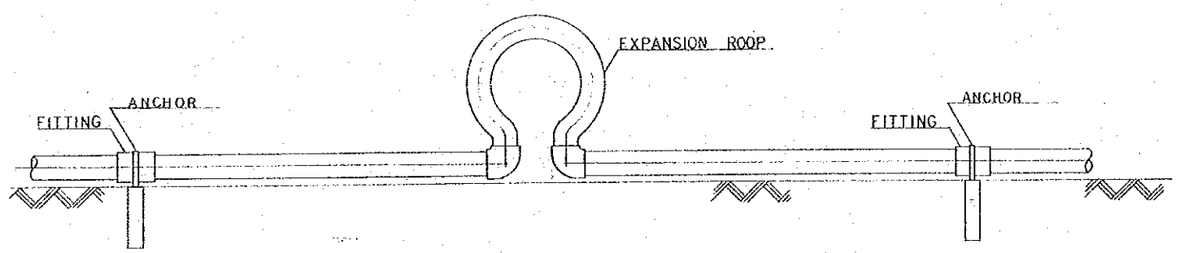
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
TYPICAL LAYOUT PLAN	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: / DRAWING No. 46
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

ROAD CROSSING

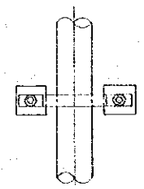
TRENCHING SECTION SCALE = 1/5

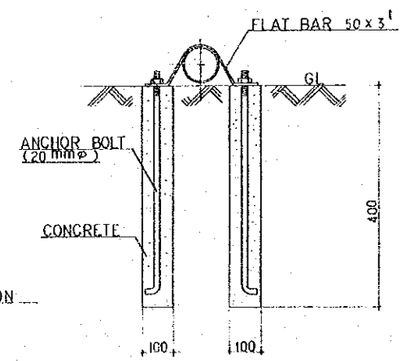


OPEN PIPING



PLAN



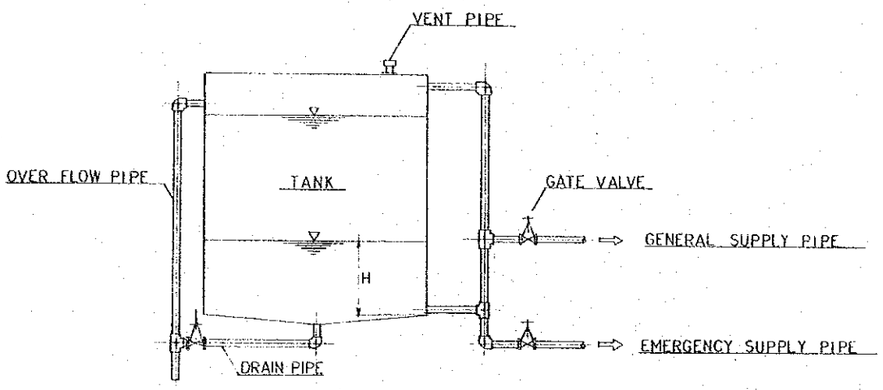


SECTION

DETAIL OF ANCHORING
NOT TO SCALE

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
PLUMBING WORK - 1	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: / DRAWING No. 47
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

PIPING FOR TANK



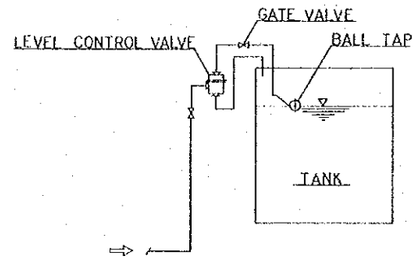
H : HEIGHT OF GENERAL SUPPLY PIPE.

EACH HEIGHT IS SHOWN IN GENERAL LAYOUT PLAN OF PROJECT SITES

WATER LEVEL CONTROL

1 ELECTRICAL CONTROL ..... SEE ELECTRICAL WORKS

2 MECHANICAL CONTROL

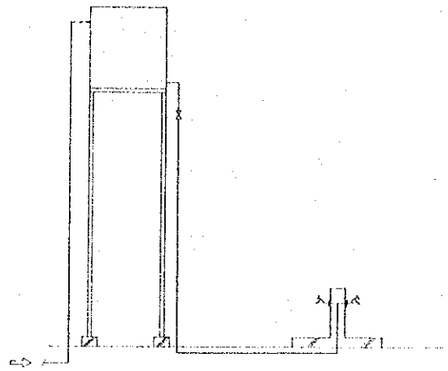


MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
PLUMBING WORK - 2	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: / DRAWING No. 48
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

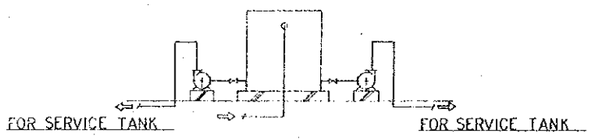
TANK

TYPES OF TANKS

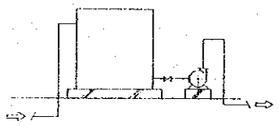
CATEGORY \ KIND	GROUND TANK	SEMI ELEVATED TANK	ELEVATED TANK
SERVICE TANK	TYPE A	TYPE B	TYPE C
DISTRIBUTION TANK	TYPE D	———	———
BOOSTER STATION TANK	TYPE E	———	———
SERVICE AND BOOSTER STATION TANK	TYPE F	TYPE G	———



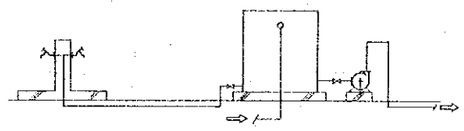
TYPE - C



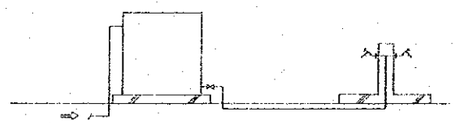
TYPE - D



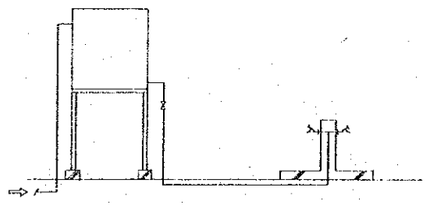
TYPE - E



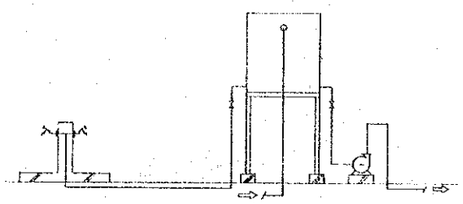
TYPE - F



TYPE - A

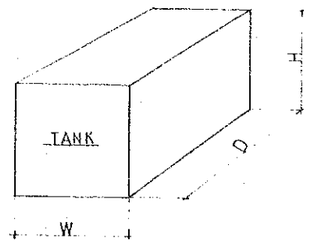


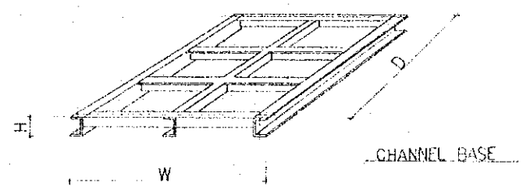
TYPE - B



TYPE - G

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
TYPES OF TANKS	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: DRAWING No. 49
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	





SIZE OF STEEL AND CONCRETE TANK

CAPACITY (ton)	W (m)	D (m)	H (m)	ACTUAL CAPACITY (ton)	NOTE
5.0	2.0	2.5	1.0	4.20	
10.0	2.0	2.5	2.0	9.10	
15.0	2.5	3.0	2.0	13.65	
30.0	3.0	4.0	2.5	27.84	
40.0	4.0	4.0	2.5	37.12	
60.0	4.0	5.0	3.0	56.20	
75.0	5.0	5.0	3.0	70.25	
120.0	5.0	6.0	4.0	113.14	
156.0	6.0	6.5	4.0	147.08	
210.0	7.0	7.5	4.0	198.00	
324.0	9.0	9.0	4.0	306.00	
360.0	9.0	10.0	4.0	340.00	
396.0	11.0	12.0	3.0	374.00	
714.0	14.0	17.0	3.0	674.00	
768.0	16.0	16.0	3.0	725.00	
867.0	17.0	17.0	3.0	818.00	

SIZE OF CHANNEL BASE FOR STEEL TANK

CAPACITY (ton)	W (mm)	D (mm)	H (mm)	NOTE
5.0	2100	2600	125	
10.0	2100	2600	125	
15.0	2600	3100	125	
30.0	3100	4100	125	
40.0	4100	4100	125	
60.0	4100	5100	150	
75.0	5100	5100	150	
120.0	5100	6100	150	
156.0	6100	6600	150	
210.0	7100	7600	150	
324.0	9100	9100	150	
360.0	9100	10100	150	
396.0	11100	12100	150	
714.0	14100	17100	200	
768.0	16100	16100	200	
867.0	17100	17100	200	

MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

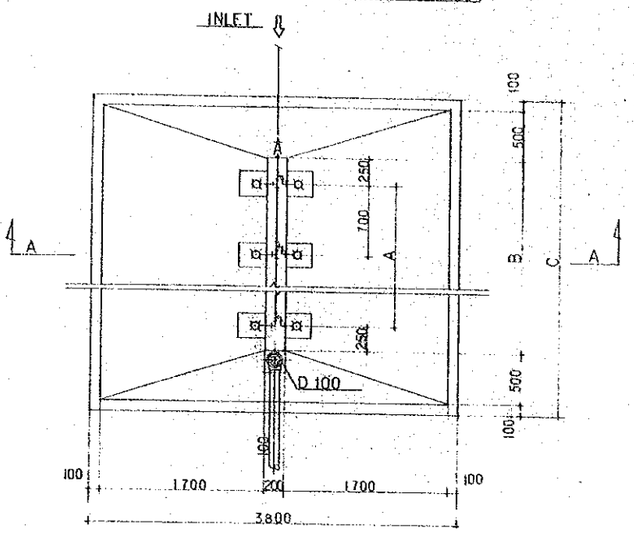
THE RURAL WATER SUPPLY PROJECT PART-II

LIST OF TANKS

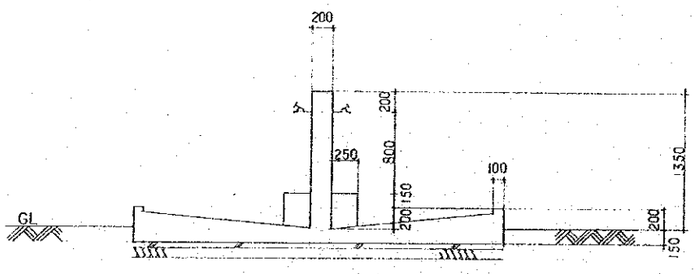
DESIGNED BY	Pacific Consultants International		
DATE	MAY '80	SCALE 1:	DRAWING No. 50

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

COMMUNITY WATER FAUCET
(SCALE - 1/30)



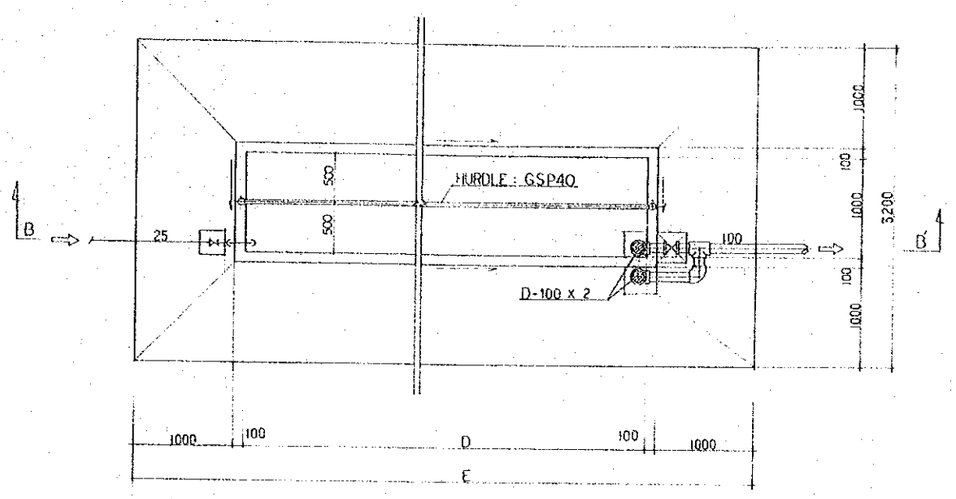
PLAN



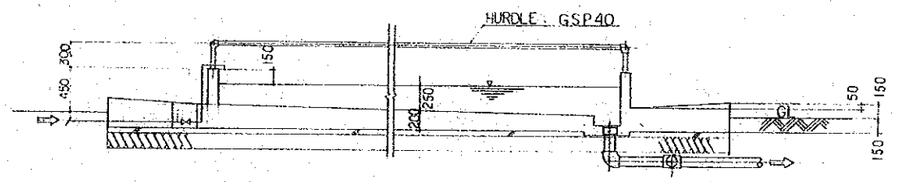
A-A' : SECTION

TYPE	A	B	C	FAUCET	INLET Φ mm	NOTE
F-1	700	1200	2400	4	25	
F-2	2100	2600	3800	8	32	
F-3	3500	4000	5200	12	40	
F-4	4900	5400	6600	16	50	
F-5	6300	6800	8000	20	50	

CATTLE TROUGH
(SCALE - 1/30)



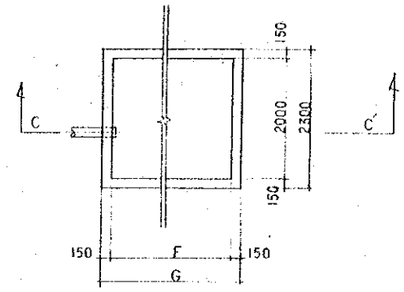
PLAN



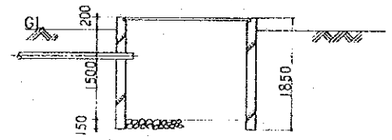
B-B' : SECTION

TYPE	D	E	NOTE
L-1	4000	6200	
L-2	7000	9200	
L-3	10000	12200	
L-4	15000	17200	
L-5	20000	22200	

DRAINAGE BASIN
(SCALE - 1/50)



PLAN



C-C' : SECTION

TYPE	F	G	SQ(m²)	NOTE
D-1	2000	2300	4	
D-2	4000	4300	8	
D-3	6000	6300	12	
D-4	8000	8300	16	
D-5	10000	10300	20	

WATER SERVICE FACILITIES

MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

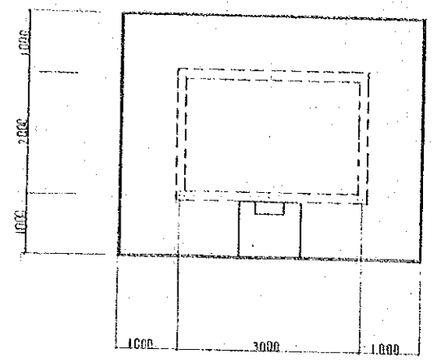
THE RURAL WATER SUPPLY PROJECT PART-II

WATER SERVICE FACILITIES

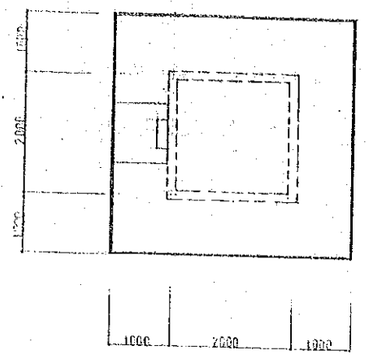
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:30
DRAWING No.	51

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

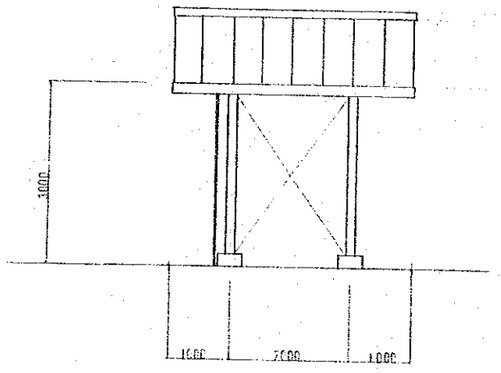
G. STEEL TRESTLES



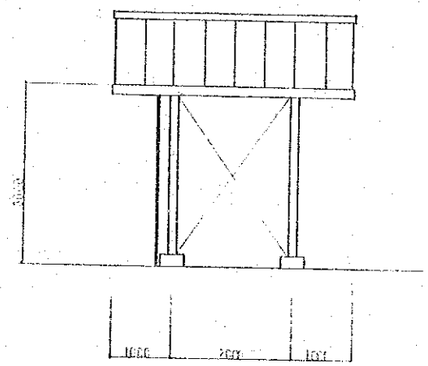
PLAN 10 TON



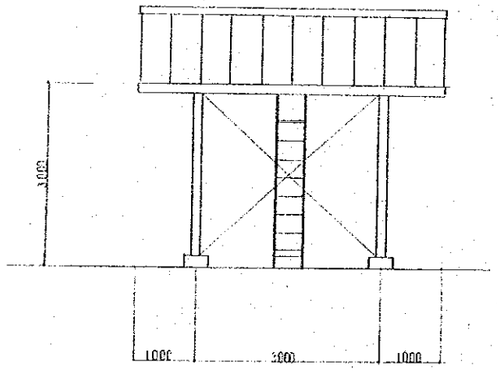
PLAN 5 TON



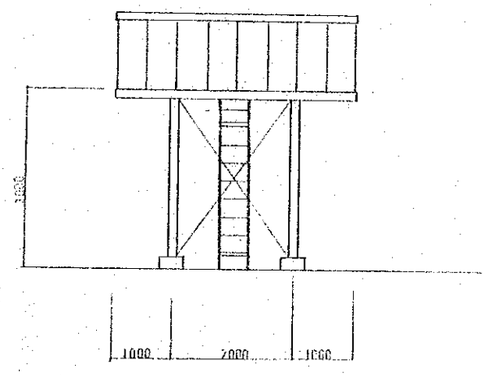
ELEVATED TANK 10 TON



ELEVATED TANK 5TON

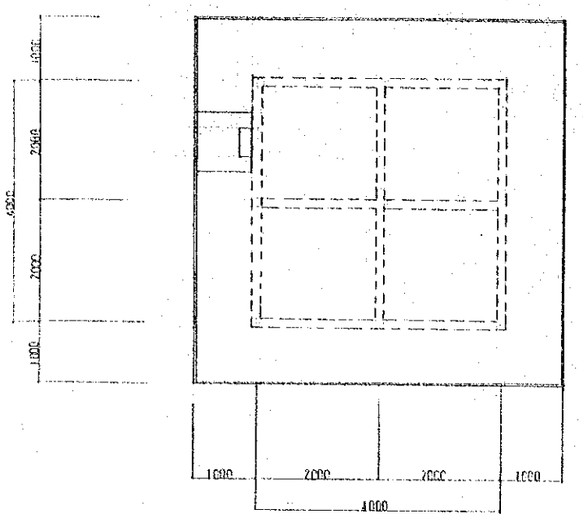


ELEVATED TANK 10 TON

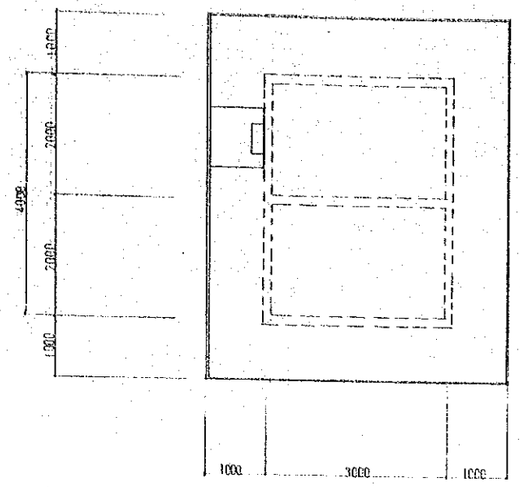


ELEVATED TANK 5TON

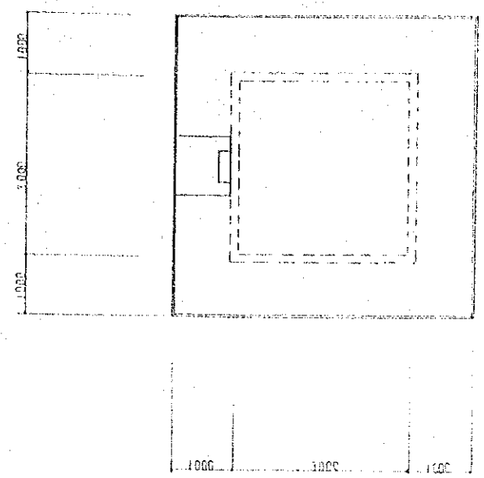
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 3m TALL FOR 5TON & 10TON TANKS	
DESIGNED BY	Pacific Consultants International
DATE MAY. 80	SCALE 1: 50 DRAWING No. 52
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



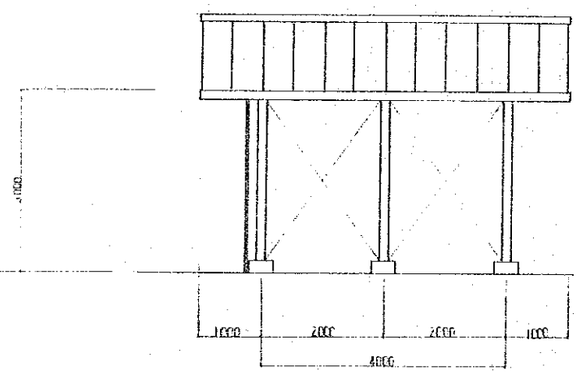
PLAN 40TON



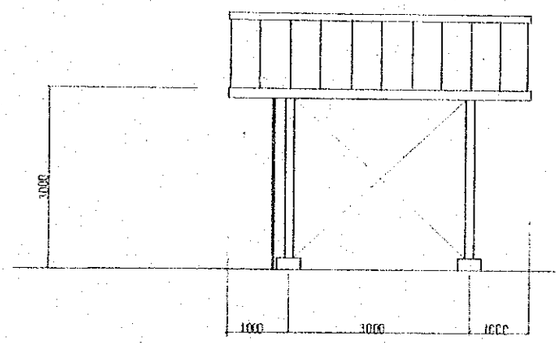
PLAN 30TON



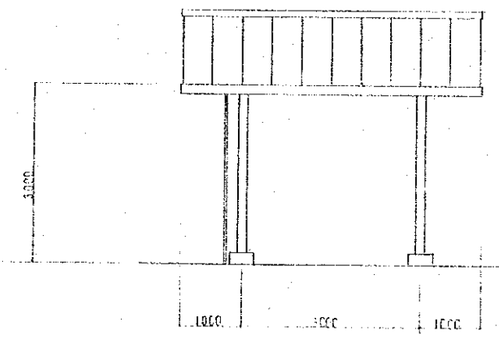
PLAN 15TON



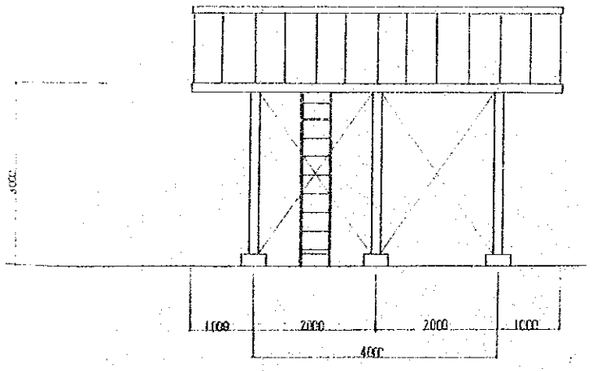
ELEVATED TANK 40TON



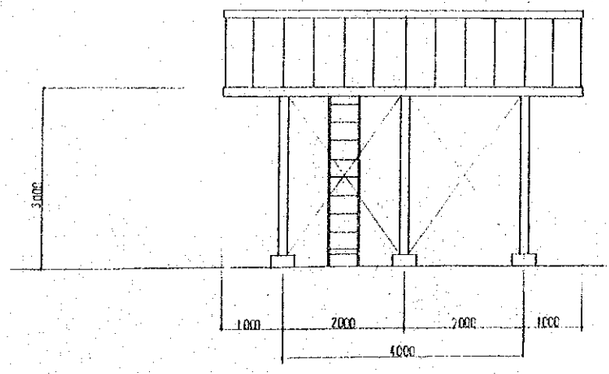
ELEVATED TANK 30TON



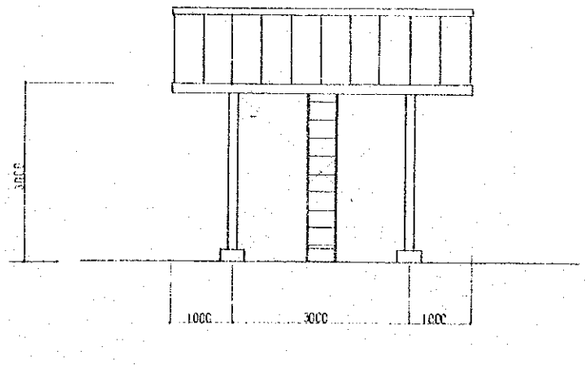
ELEVATED TANK 15TON



ELEVATED TANK 40TON

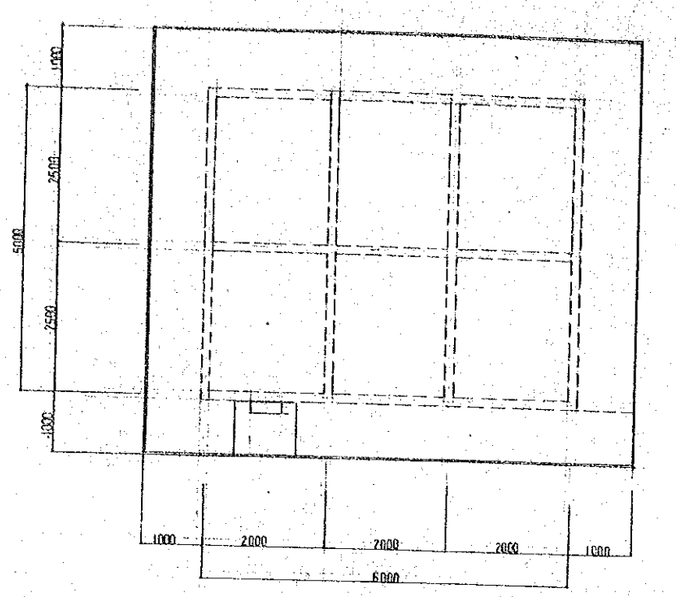


ELEVATED TANK 30TON

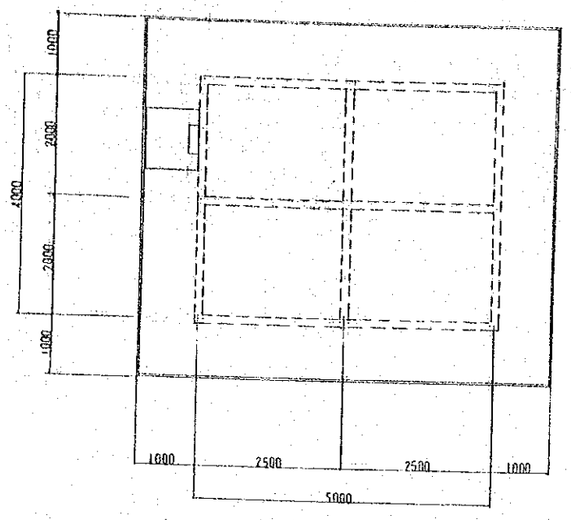


ELEVATED TANK 15TON

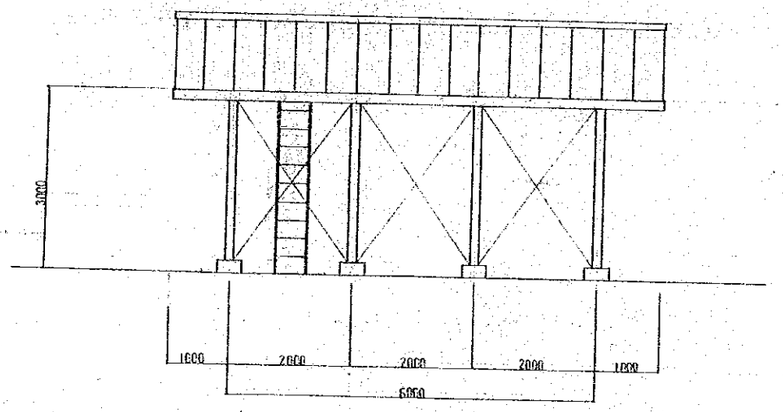
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 3m TALL FOR 15TON & 30TON TANKS	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50 DRAWING No. 53
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



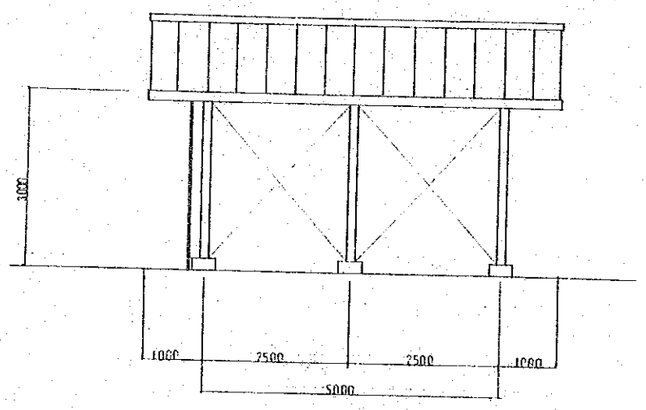
PLAN 120TON



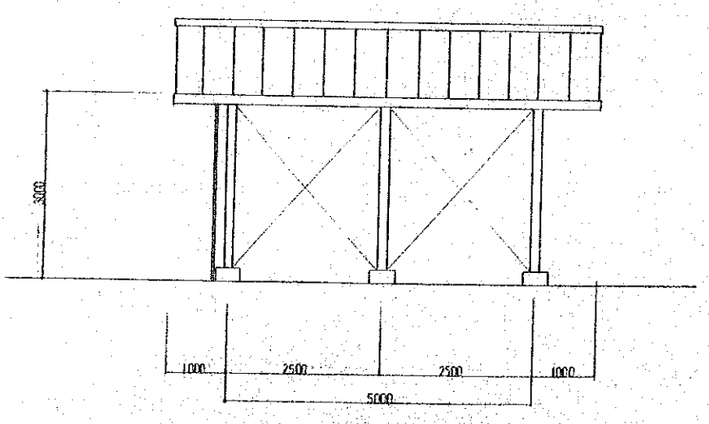
PLAN 60TON



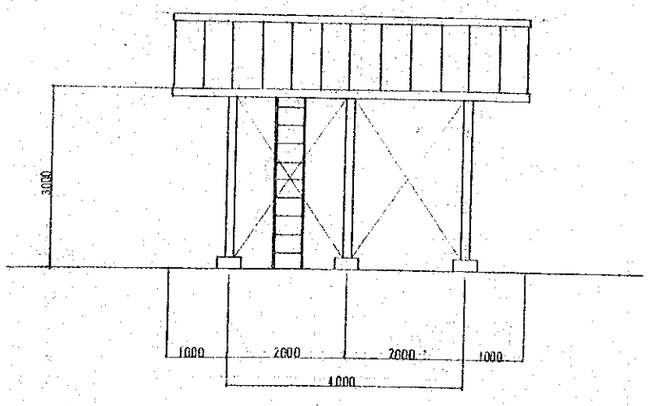
ELEVATED TANK 120TON



ELEVATED TANK 60TON

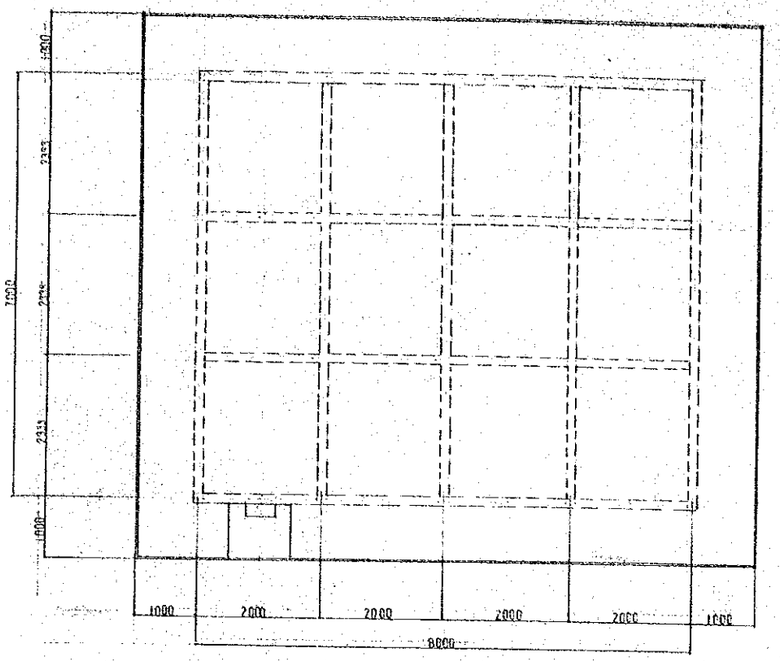


ELEVATED TANK 120TON

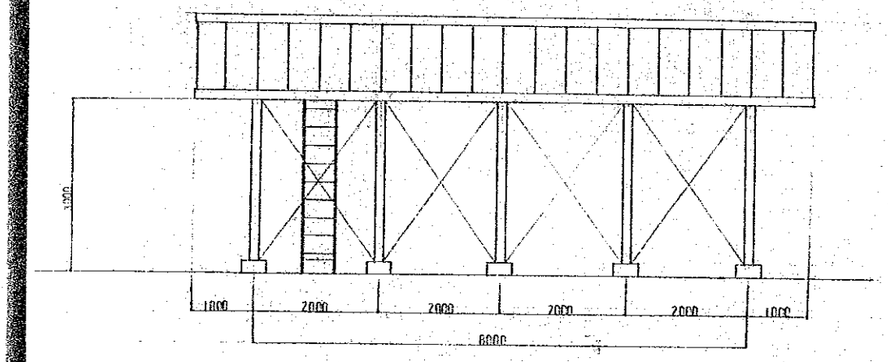


ELEVATED TANK 60TON

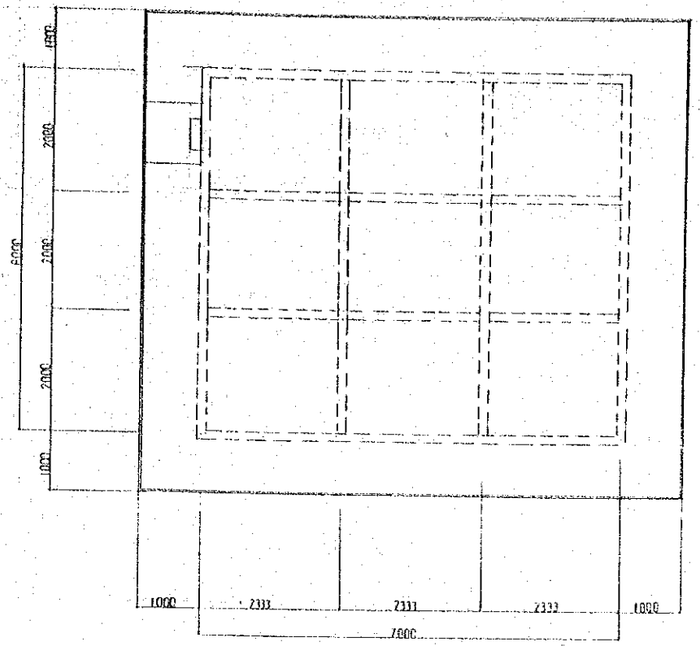
MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 3m TALL FOR 60TON & 120TON TANKS	
DESIGNED BY	Pacific Consultants International
DATE MAY 80	SCALE 1: 50 DRAWING No. 54
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



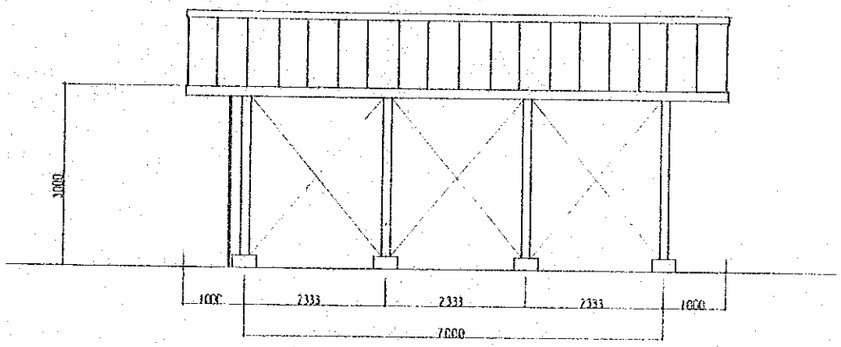
PLAN 210TON



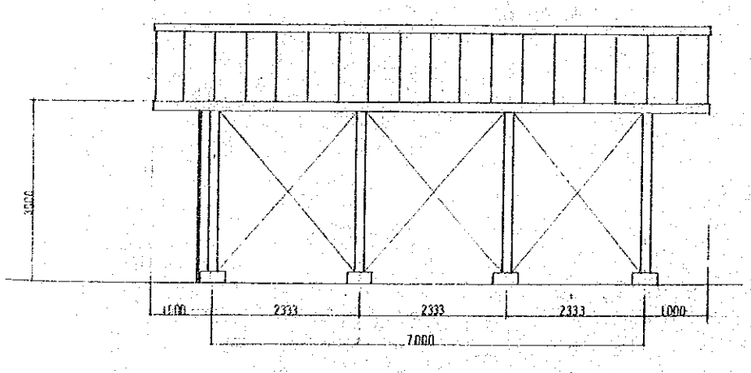
ELEVATED TANK 210TON



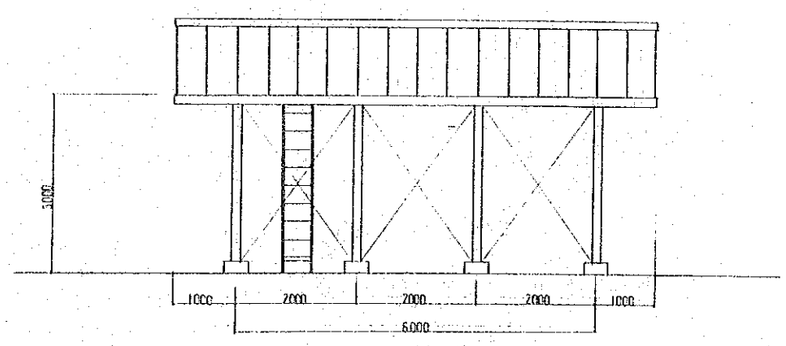
PLAN 156TON



ELEVATED TANK 156TON



ELEVATED TANK 210TON



ELEVATED TANK 156TON

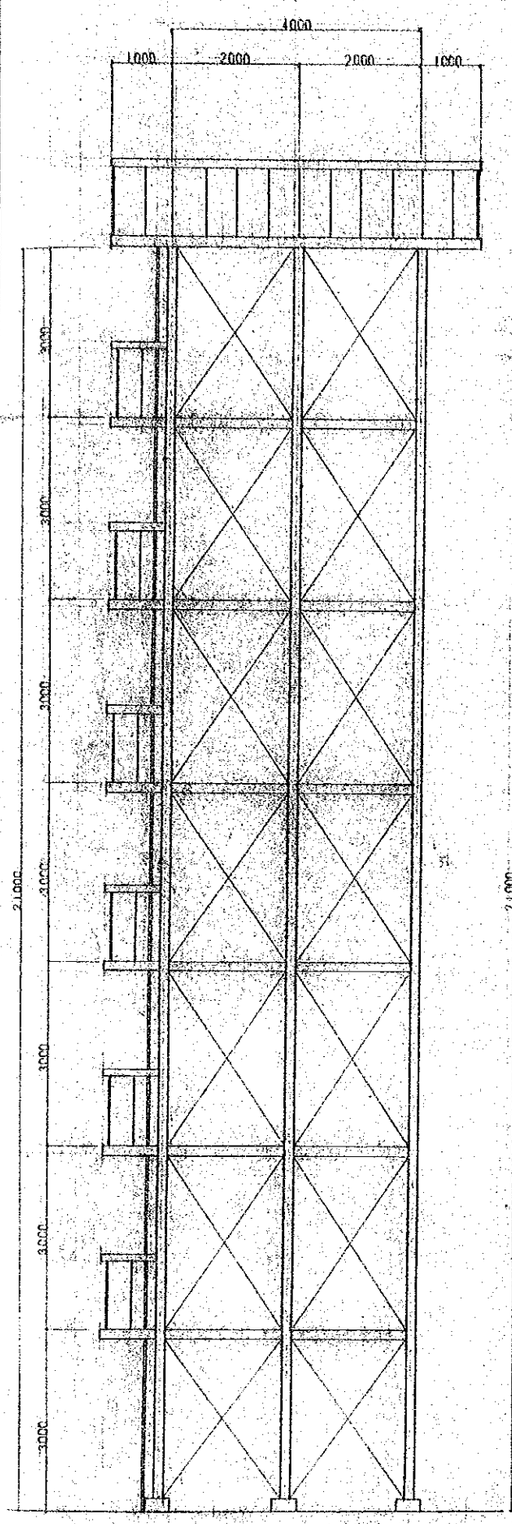
MINISTRY OF PUBLIC WORKS
YEMEN ARAB REPUBLIC

THE RURAL WATER SUPPLY PROJECT PART-II

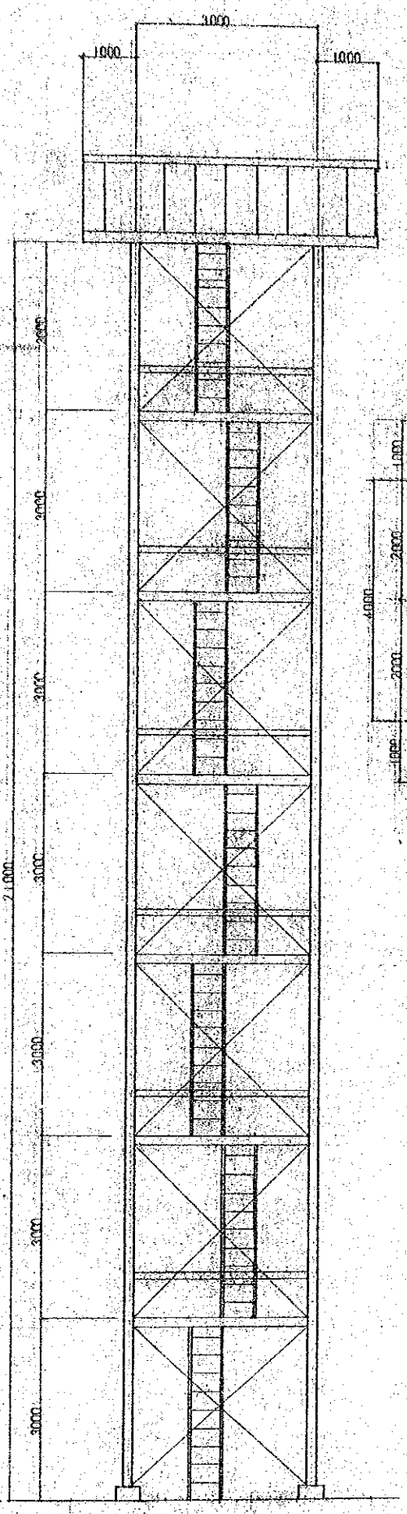
STEEL TRESTLE 3m TALL FOR 156TON & 210TON TANKS

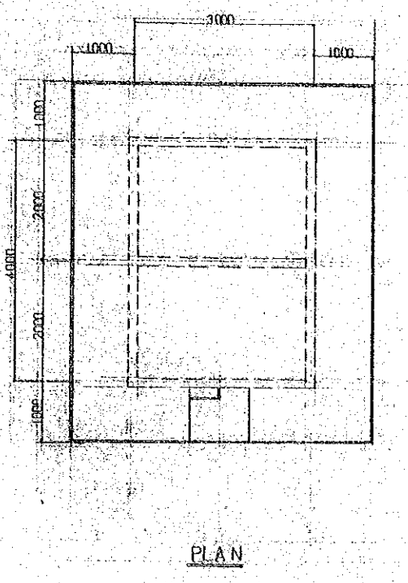
DESIGNED BY	Pacific Consultants International		
DATE	MAY '80	SCALE 1:50	DRAWING No. 55

JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN

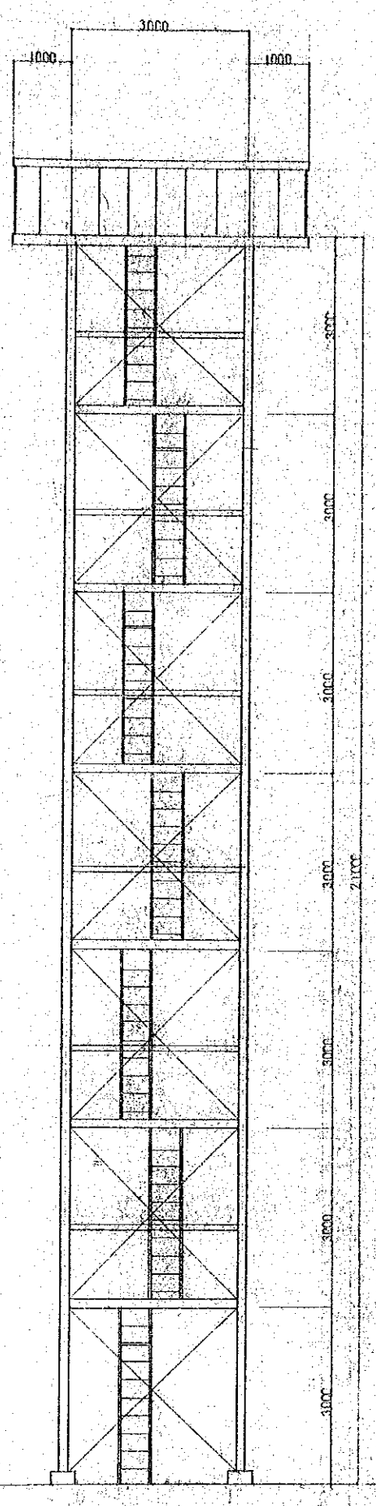


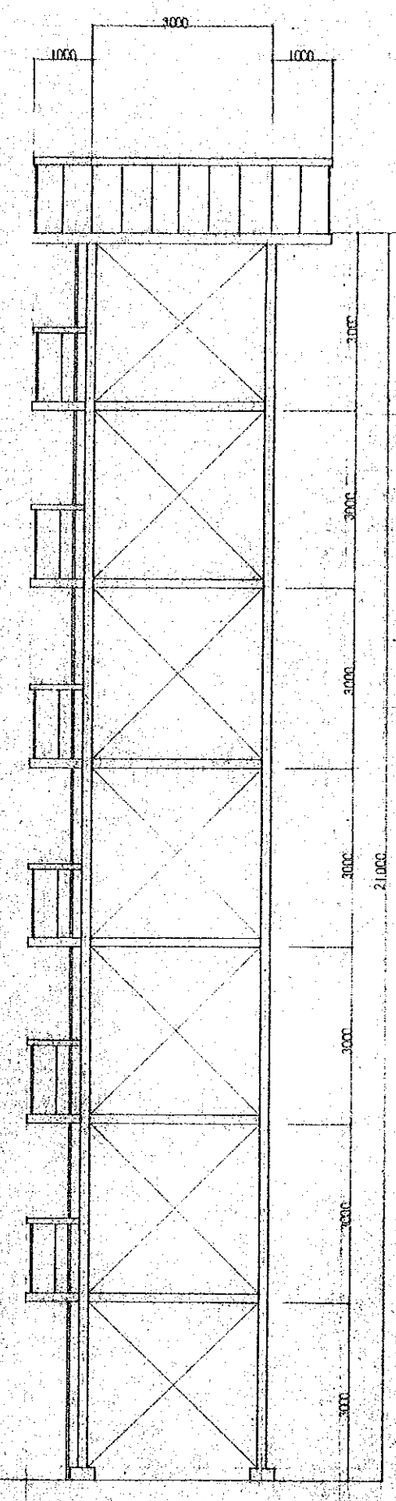
ELEVATED TANK 30TON



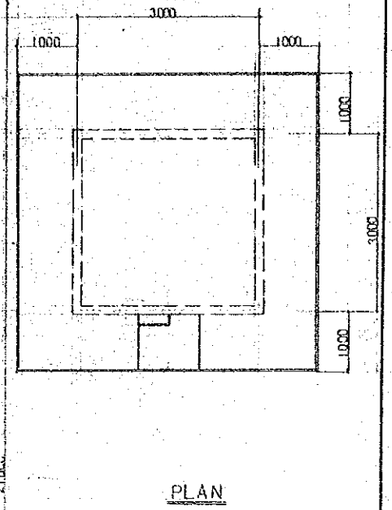


PLAN





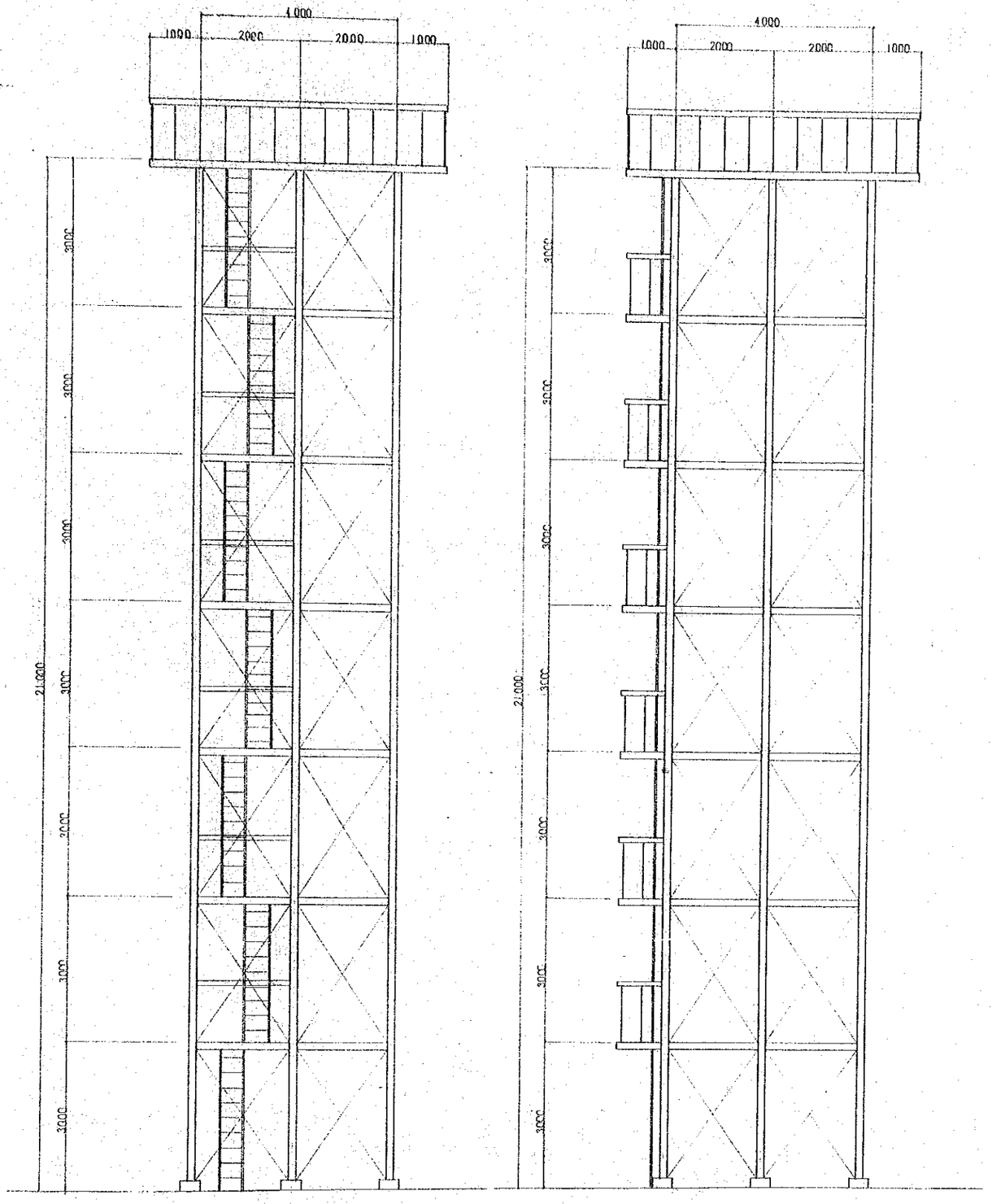
ELEVATED TANK 15 TON



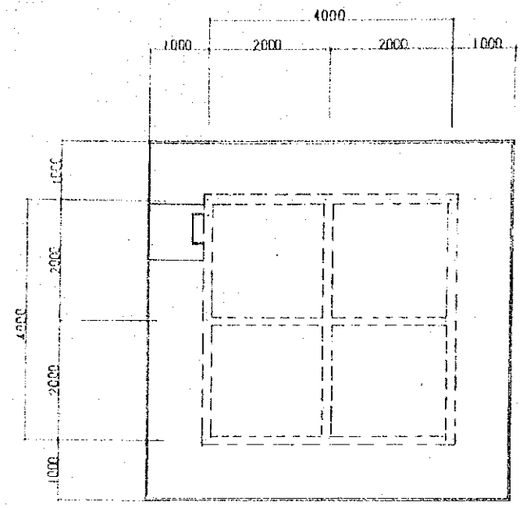
PLAN

10 0 1

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 21m TALL FOR 10TON, 15TON & 30TON TANKS	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50
DRAWING No.	56
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	

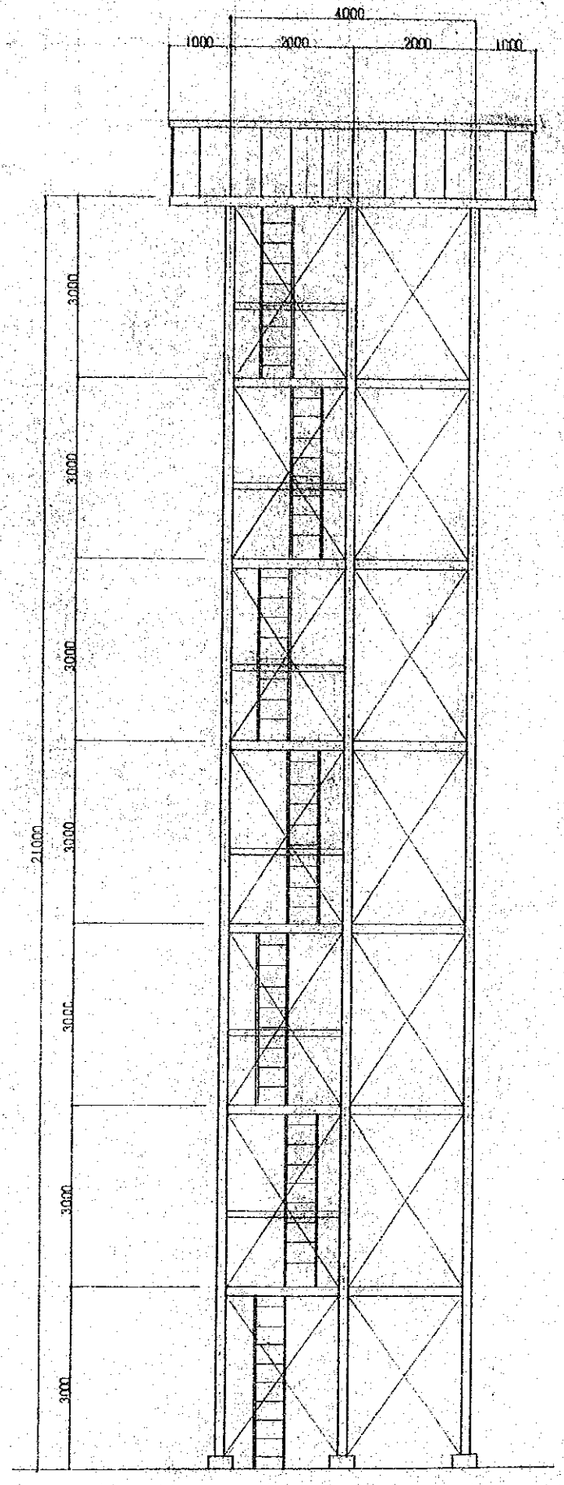


ELEVATED TANK 40 TON

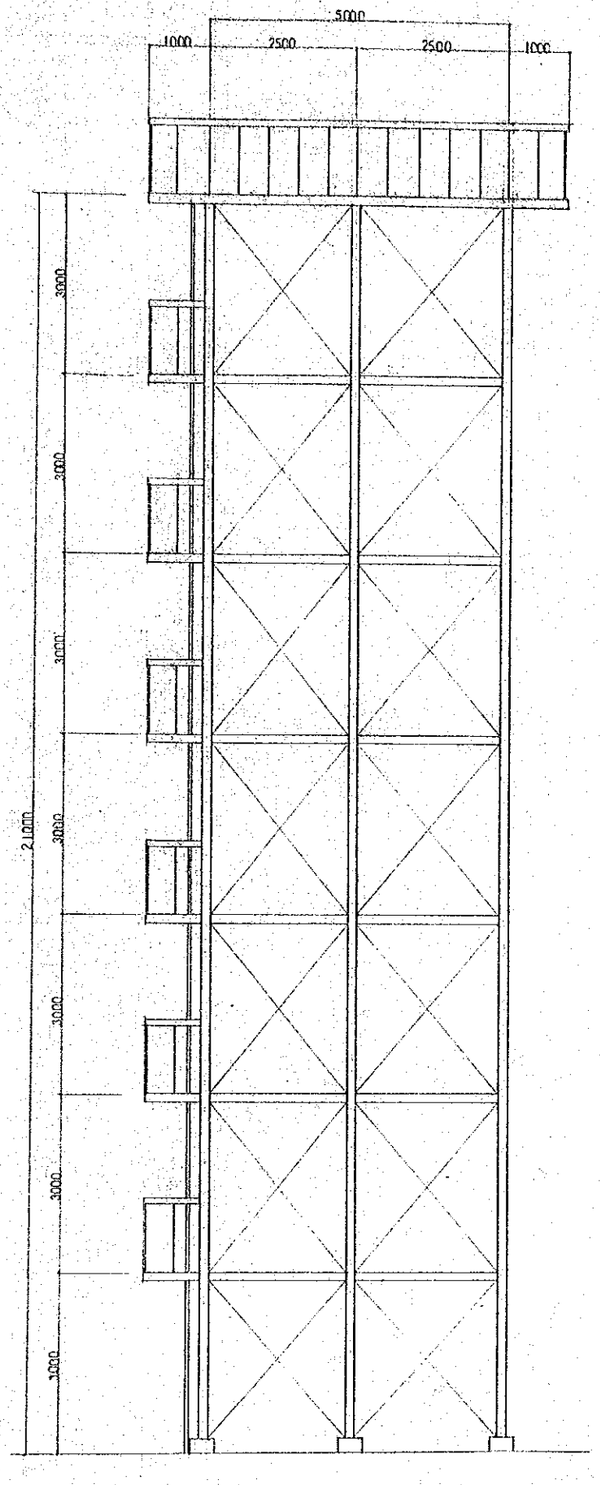


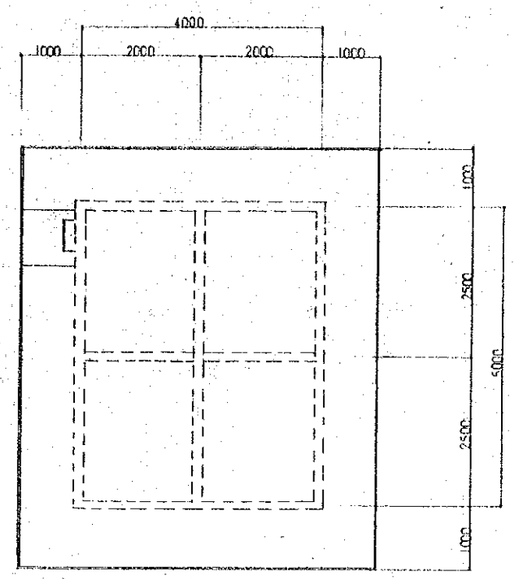
PLAN

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 21m TALL FOR 40 TON TANK	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1: 50 / DRAWING No. 57
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



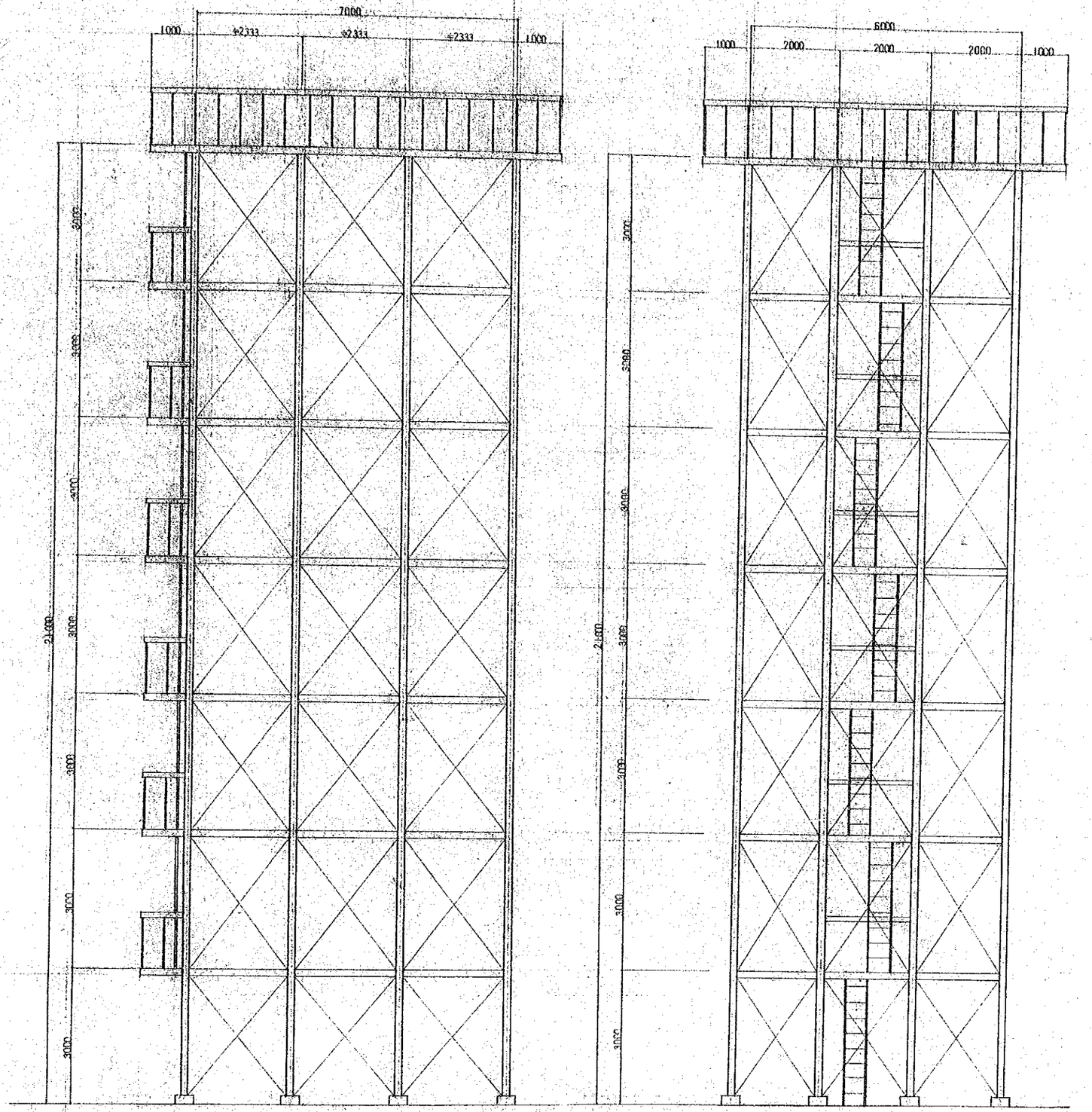
ELEVATED TANK 60TON



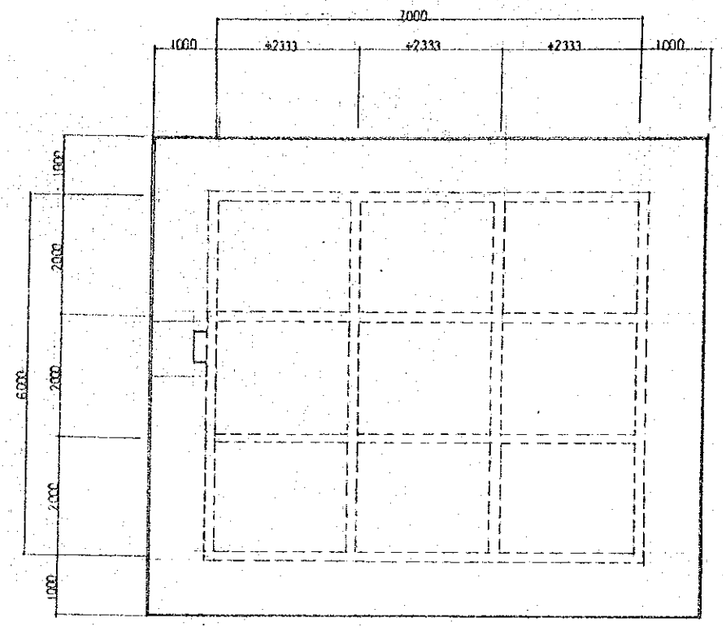


PLAN

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 21m TALL FOR 60 TON TANK	
DESIGNED BY	Pacific Consultants International
DATE MAY '80	SCALE 1:50 DRAWING No. 58
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	



ELEVATED TANK 156 TON



PLAN

MINISTRY OF PUBLIC WORKS YEMEN ARAB REPUBLIC	
THE RURAL WATER SUPPLY PROJECT PART-II	
STEEL TRESTLE 21m TALL FOR 156 TON TANK	
DESIGNED BY	Pacific Consultants International
DATE MAY 80	SCALE 1:50 / DRAWING No. 59
JAPAN INTERNATIONAL COOPERATION AGENCY, TOKYO, JAPAN	