

REPORT ON THE SURVEY OF THE WATER WORKS

DUNGUN AND KEMAMAN DISTRICTS MALAYSIA

DRAWINGS

March 1968

OVERSEAS TECHNICAL COOPERATION AGENCY

GOVERNMENT OF JAPAN

DUNGUN WATER WORKS - DRAWING INDEX

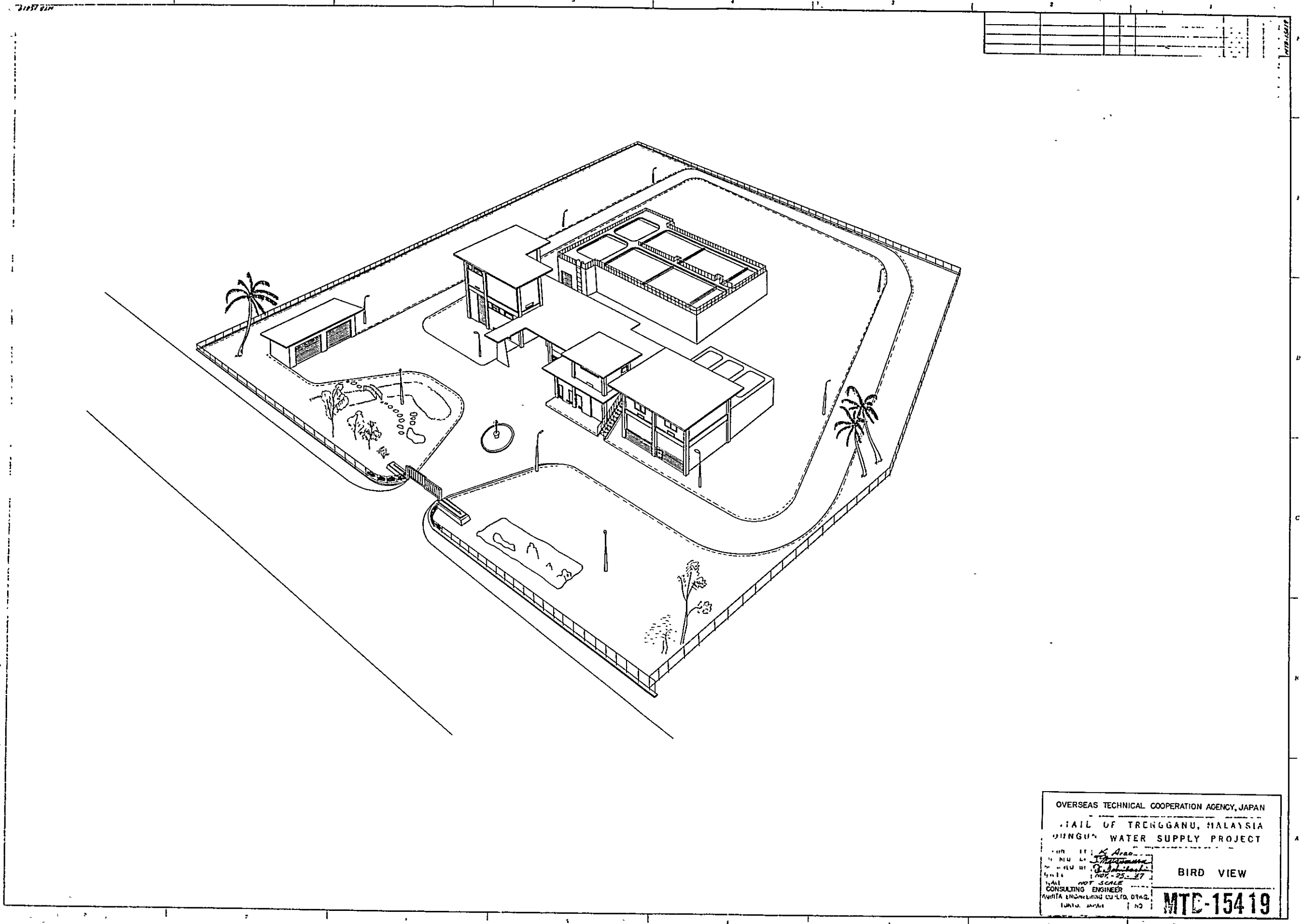
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2	MTC -- 11401	VICINITY PLAN	18	MTB -- 15431	GENERAL ARRANGEMENT FOR FILTRATE PUMP
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15	MTC -- 11403	FLASH MIXER			
16	MTB -- 15429	GENERAL ARRANGEMENT FOR CLARIFIER			

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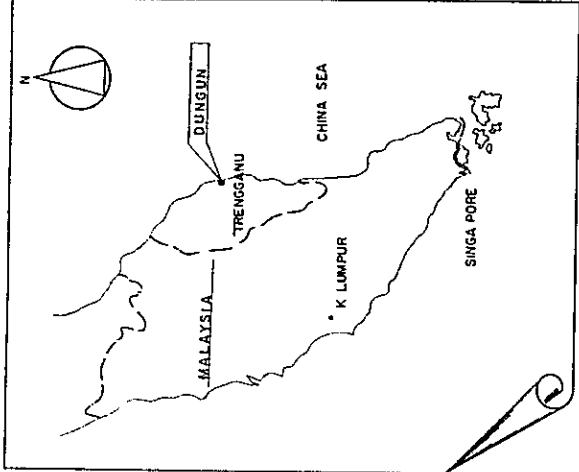
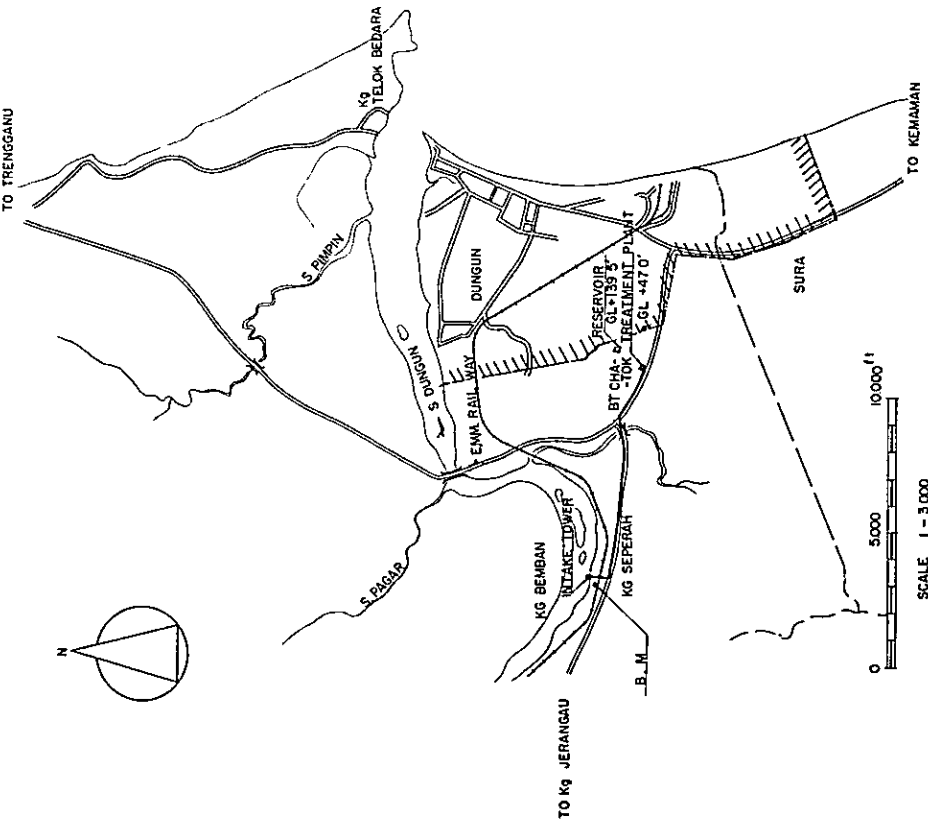
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OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
STATE OF TRERGGANU, MALAYSIA
JUNGUN WATER SUPPLY PROJECT
DATE: 25-87
SCALE: NOT SCALE
CONSULTING ENGINEER
MURITA ENGINEERING CO., LTD, OSAKA, JAPAN
BIRD VIEW
MTC-15419

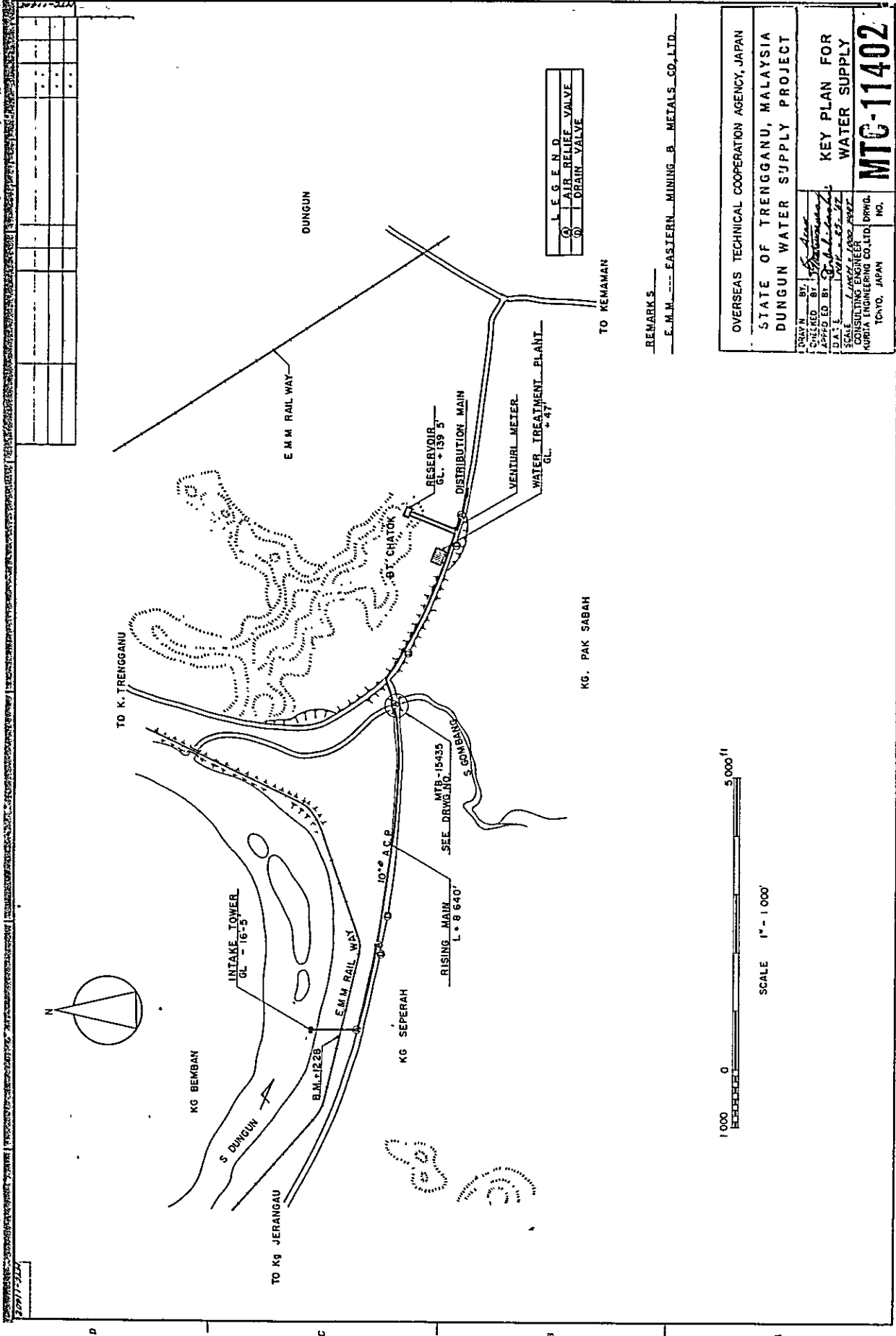
10/11-31/11					



REMARKS
 1. E.M.M. EASTERN MINING & METALS CO., LTD.
 2. WATER SUPPLY AREA

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUN WATER SUPPLY PROJECT	
VICINITY PLAN	
DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: 10/11-31/11	SCALE: 1:3000 CONSULTING ENGINEER: KURITA ENGINEERING CO. LTD. DRWIL TO: YO JAPAN NO

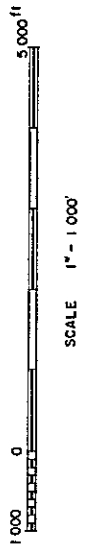
MTG-11401



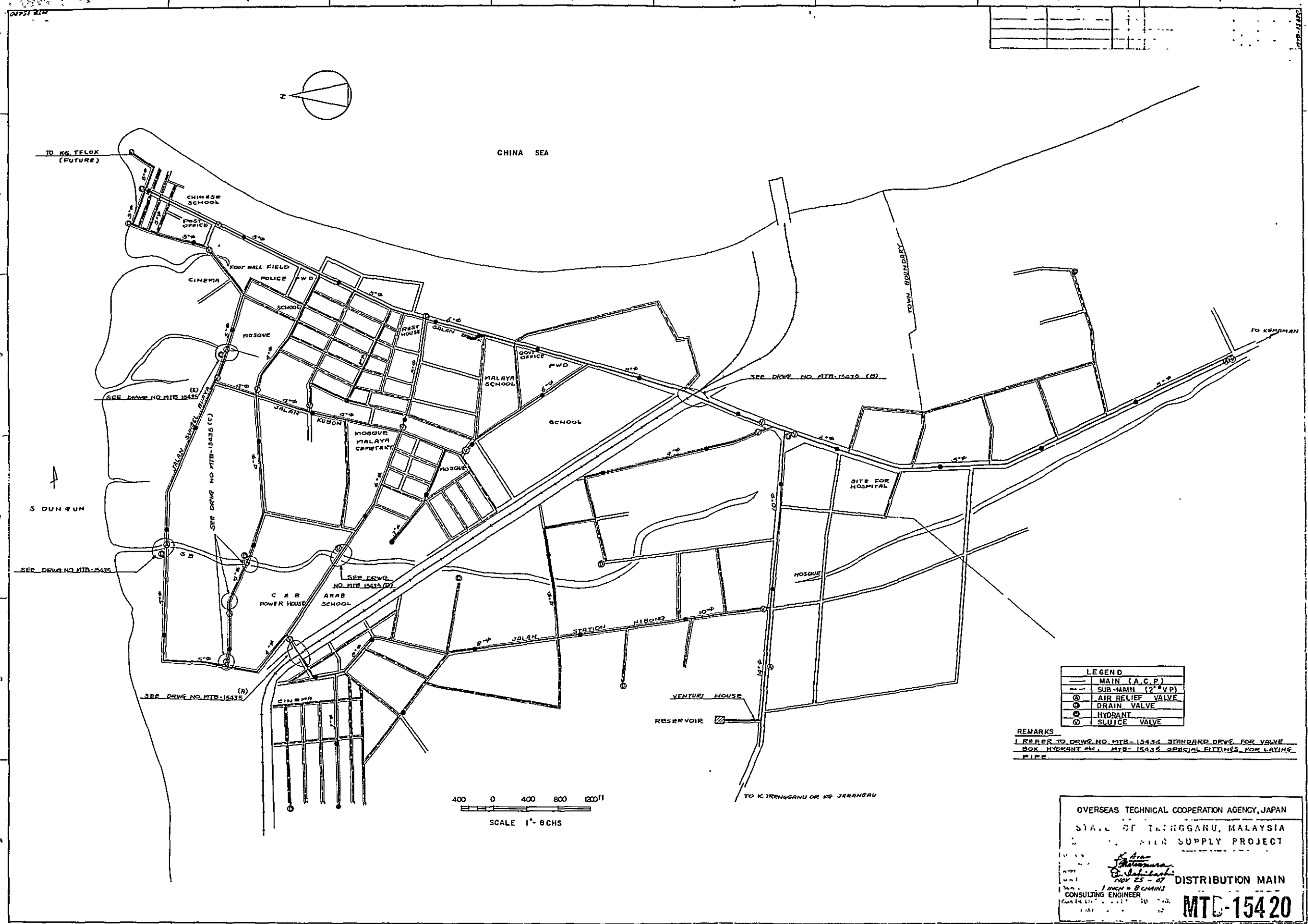
LEGEND

○	AIR RELIEF VALVE
⊙	DRAIN VALVE

REMARKS
 E.M.M. --- EASTERN MINING & METALS CO., LTD.



OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUN WATER SUPPLY PROJECT	
DRAWN BY: <i>[Signature]</i>	KEY PLAN FOR WATER SUPPLY
CHECKED BY: <i>[Signature]</i>	
APPROVED BY: <i>[Signature]</i>	
D.A.L. NO. <i>[Signature]</i>	MURATA ENGINEERING CO., LTD. DRWG. NO. MTG-11402
SCALE: 1" = 1000'	
CONSULTING ENGINEER	
MURATA ENGINEERING CO., LTD. DRWG. NO. MTG-11402	
TOKYO, JAPAN	



LEGEND	
—	MAIN (A.C.P.)
- - -	SUB-MAIN (2" VP)
⊙	AIR RELIEF VALVE
⊖	DRAIN VALVE
⊕	HYDRANT
⊗	SLUICE VALVE

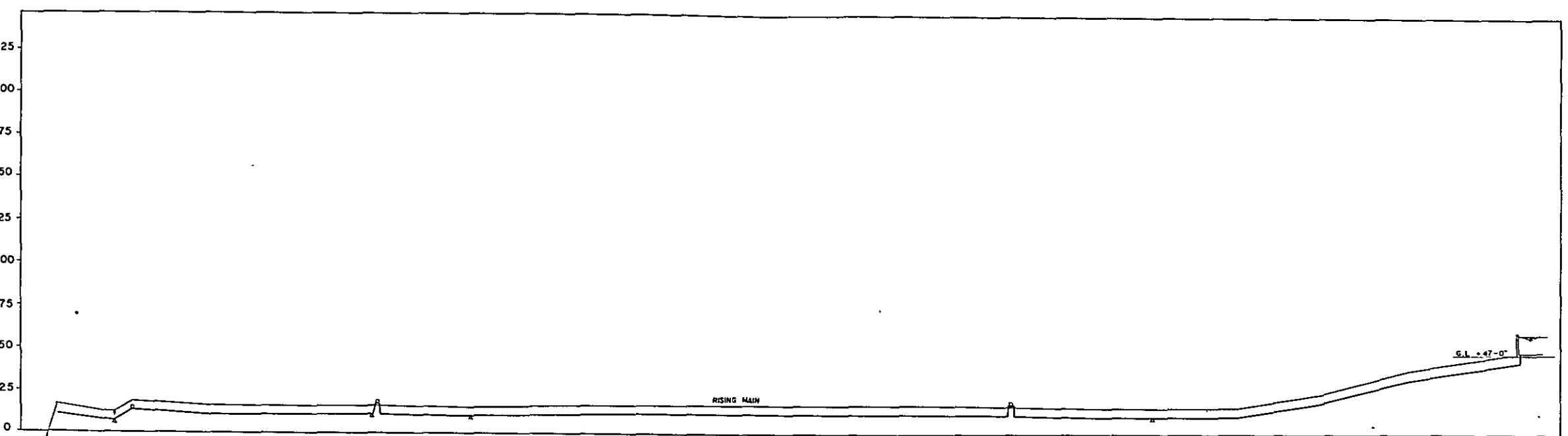
REMARKS
 1. REFER TO DRAWG. NO. MTD-15435 STANDARD DRAWG. FOR VALVE BOX HYDRANT etc., MTD-15435 SPECIAL FITTINGS FOR LAYING PIPE.

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 WATER SUPPLY PROJECT
 I. H. B. CHAN
 CONSULTING ENGINEER
 NOV 25 - 57
 DISTRIBUTION MAIN
MTD-15420

HEIGHT (ft)

SCALE
 HORZ 1" = 250
 VERT 1" = 25

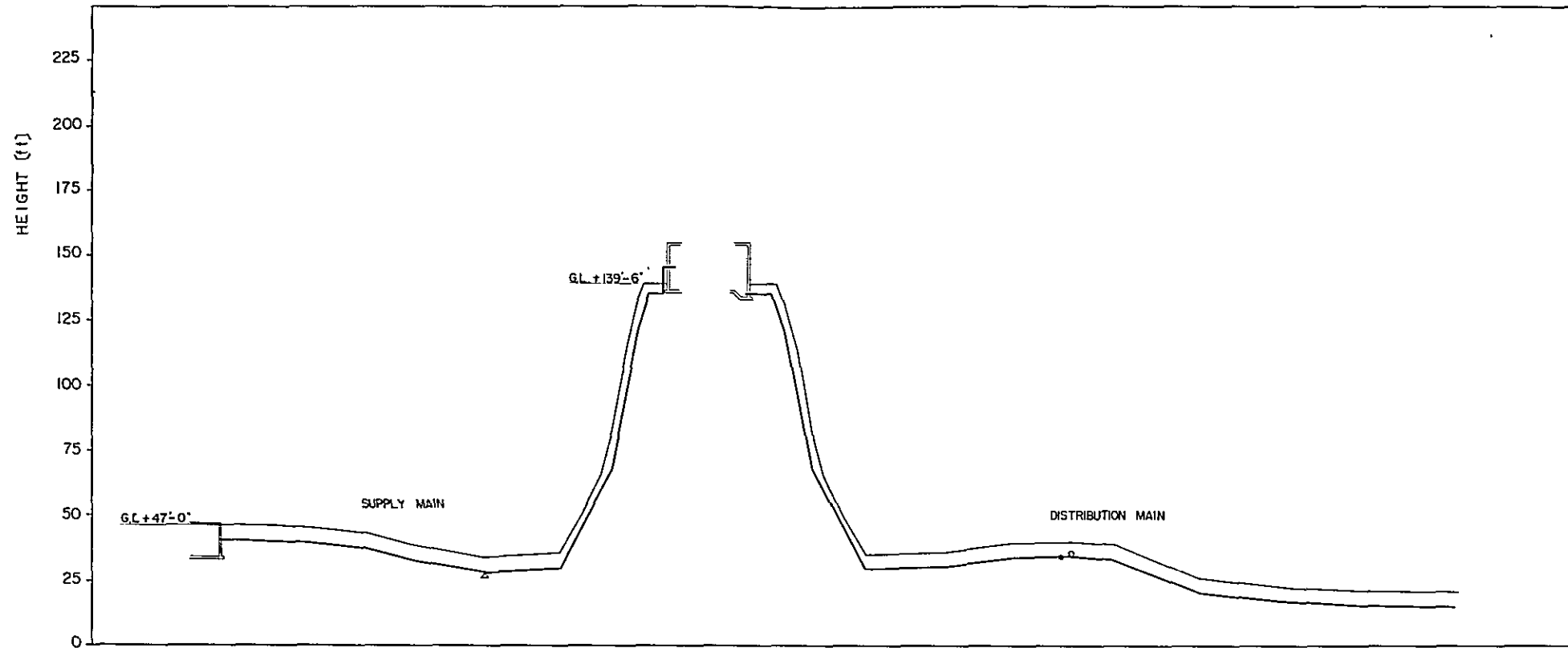
(DATUM) 0



EXIST GROUND HEIGHT	FORMATION HEIGHT	DISTANCE	TOTAL DISTANCE	SURVEY POINT	MATERIAL & DIA. OF PIPE	REMARKS
11.12	11.12	0	0	1	10" ACP	CHYANE ROAD
11.15	11.15	100	100	2	10" ACP	BM OF EXISTING MAIN VALVE AIR RELIEF VALVE
11.18	11.18	200	200	3	10" ACP	DRAIN VALVE AIR RELIEF VALVE
11.21	11.21	300	300	4	10" ACP	DRAIN VALVE
11.24	11.24	400	400	5	10" ACP	
11.27	11.27	500	500	6	10" ACP	
11.30	11.30	600	600	7	10" ACP	
11.33	11.33	700	700	8	10" ACP	
11.36	11.36	800	800	9	10" ACP	
11.39	11.39	900	900	10	10" ACP	
11.42	11.42	1000	1000	11	10" ACP	
11.45	11.45	1100	1100	12	10" ACP	
11.48	11.48	1200	1200	13	10" ACP	
11.51	11.51	1300	1300	14	10" ACP	
11.54	11.54	1400	1400	15	10" ACP	
11.57	11.57	1500	1500	16	10" ACP	
11.60	11.60	1600	1600	17	10" ACP	
11.63	11.63	1700	1700	18	10" ACP	
11.66	11.66	1800	1800	19	10" ACP	
11.69	11.69	1900	1900	20	10" ACP	
11.72	11.72	2000	2000	21	10" ACP	
11.75	11.75	2100	2100	22	10" ACP	
11.78	11.78	2200	2200	23	10" ACP	
11.81	11.81	2300	2300	24	10" ACP	
11.84	11.84	2400	2400	25	10" ACP	
11.87	11.87	2500	2500	26	10" ACP	
11.90	11.90	2600	2600	27	10" ACP	
11.93	11.93	2700	2700	28	10" ACP	
11.96	11.96	2800	2800	29	10" ACP	
11.99	11.99	2900	2900	30	10" ACP	
12.02	12.02	3000	3000	31	10" ACP	
12.05	12.05	3100	3100	32	10" ACP	
12.08	12.08	3200	3200	33	10" ACP	
12.11	12.11	3300	3300	34	10" ACP	
12.14	12.14	3400	3400	35	10" ACP	
12.17	12.17	3500	3500	36	10" ACP	
12.20	12.20	3600	3600	37	10" ACP	
12.23	12.23	3700	3700	38	10" ACP	
12.26	12.26	3800	3800	39	10" ACP	
12.29	12.29	3900	3900	40	10" ACP	
12.32	12.32	4000	4000	41	10" ACP	
12.35	12.35	4100	4100	42	10" ACP	
12.38	12.38	4200	4200	43	10" ACP	
12.41	12.41	4300	4300	44	10" ACP	
12.44	12.44	4400	4400	45	10" ACP	
12.47	12.47	4500	4500	46	10" ACP	
12.50	12.50	4600	4600	47	10" ACP	
12.53	12.53	4700	4700	48	10" ACP	
12.56	12.56	4800	4800	49	10" ACP	
12.59	12.59	4900	4900	50	10" ACP	
12.62	12.62	5000	5000	51	10" ACP	
12.65	12.65	5100	5100	52	10" ACP	
12.68	12.68	5200	5200	53	10" ACP	
12.71	12.71	5300	5300	54	10" ACP	
12.74	12.74	5400	5400	55	10" ACP	
12.77	12.77	5500	5500	56	10" ACP	
12.80	12.80	5600	5600	57	10" ACP	
12.83	12.83	5700	5700	58	10" ACP	
12.86	12.86	5800	5800	59	10" ACP	
12.89	12.89	5900	5900	60	10" ACP	
12.92	12.92	6000	6000	61	10" ACP	
12.95	12.95	6100	6100	62	10" ACP	
12.98	12.98	6200	6200	63	10" ACP	
13.01	13.01	6300	6300	64	10" ACP	
13.04	13.04	6400	6400	65	10" ACP	
13.07	13.07	6500	6500	66	10" ACP	
13.10	13.10	6600	6600	67	10" ACP	
13.13	13.13	6700	6700	68	10" ACP	
13.16	13.16	6800	6800	69	10" ACP	
13.19	13.19	6900	6900	70	10" ACP	
13.22	13.22	7000	7000	71	10" ACP	
13.25	13.25	7100	7100	72	10" ACP	
13.28	13.28	7200	7200	73	10" ACP	
13.31	13.31	7300	7300	74	10" ACP	
13.34	13.34	7400	7400	75	10" ACP	
13.37	13.37	7500	7500	76	10" ACP	
13.40	13.40	7600	7600	77	10" ACP	
13.43	13.43	7700	7700	78	10" ACP	
13.46	13.46	7800	7800	79	10" ACP	
13.49	13.49	7900	7900	80	10" ACP	
13.52	13.52	8000	8000	81	10" ACP	
13.55	13.55	8100	8100	82	10" ACP	
13.58	13.58	8200	8200	83	10" ACP	
13.61	13.61	8300	8300	84	10" ACP	
13.64	13.64	8400	8400	85	10" ACP	
13.67	13.67	8500	8500	86	10" ACP	
13.70	13.70	8600	8600	87	10" ACP	
13.73	13.73	8700	8700	88	10" ACP	
13.76	13.76	8800	8800	89	10" ACP	
13.79	13.79	8900	8900	90	10" ACP	
13.82	13.82	9000	9000	91	10" ACP	
13.85	13.85	9100	9100	92	10" ACP	
13.88	13.88	9200	9200	93	10" ACP	
13.91	13.91	9300	9300	94	10" ACP	
13.94	13.94	9400	9400	95	10" ACP	
13.97	13.97	9500	9500	96	10" ACP	
14.00	14.00	9600	9600	97	10" ACP	
14.03	14.03	9700	9700	98	10" ACP	
14.06	14.06	9800	9800	99	10" ACP	
14.09	14.09	9900	9900	100	10" ACP	
14.12	14.12	10000	10000	101	10" ACP	

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU MALAYSIA
 GUNGA WATER SUPPLY PROJECT
 PROFILE OF RISING MAIN
 CONSULTING ENGINEER
 TCA J M

SCALE
 HORZ. 1" = 250'
 VERT. 1" = 25'



EXIST GROUND HEIGHT	(ft)	FORMATION HEIGHT	(ft)	DISTANCE	(ft)	TOTAL DISTANCE	(ft)	SURVEY POINT	MATERIAL & DIA OF PIPE	REMARKS
47.00	47.00	0.00	0.00	0	0	0			12" CP	WATER TREATMENT PLANT
48.00	48.00	0.00	0.00	223	223	223			10" ACP	T.B.M.
45.00	45.00	0.00	0.00	366	366	366			10" ACP	DRAIN VALVE
43.00	43.00	0.00	0.00	551	551	551			10" ACP	
48.00	48.00	0.00	0.00	720	720	720			10" ACP	
93.00	93.00	45.00	45.00	883	883	883			10" ACP	RESERVOIR
139.60	139.60	92.60	92.60	1000	1000	1000			10" ACP	RESERVOIR
139.60	139.60	92.60	92.60	1100	1100	1100			10" ACP	
48.00	48.00	0.00	0.00	1260	1260	1260			10" ACP	VENTURI HOUSE AIR RELIEF VALVE
48.00	48.00	0.00	0.00	1487	1487	1487			10" ACP	TO TOWN

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 DUNGUN WATER SUPPLY PROJECT

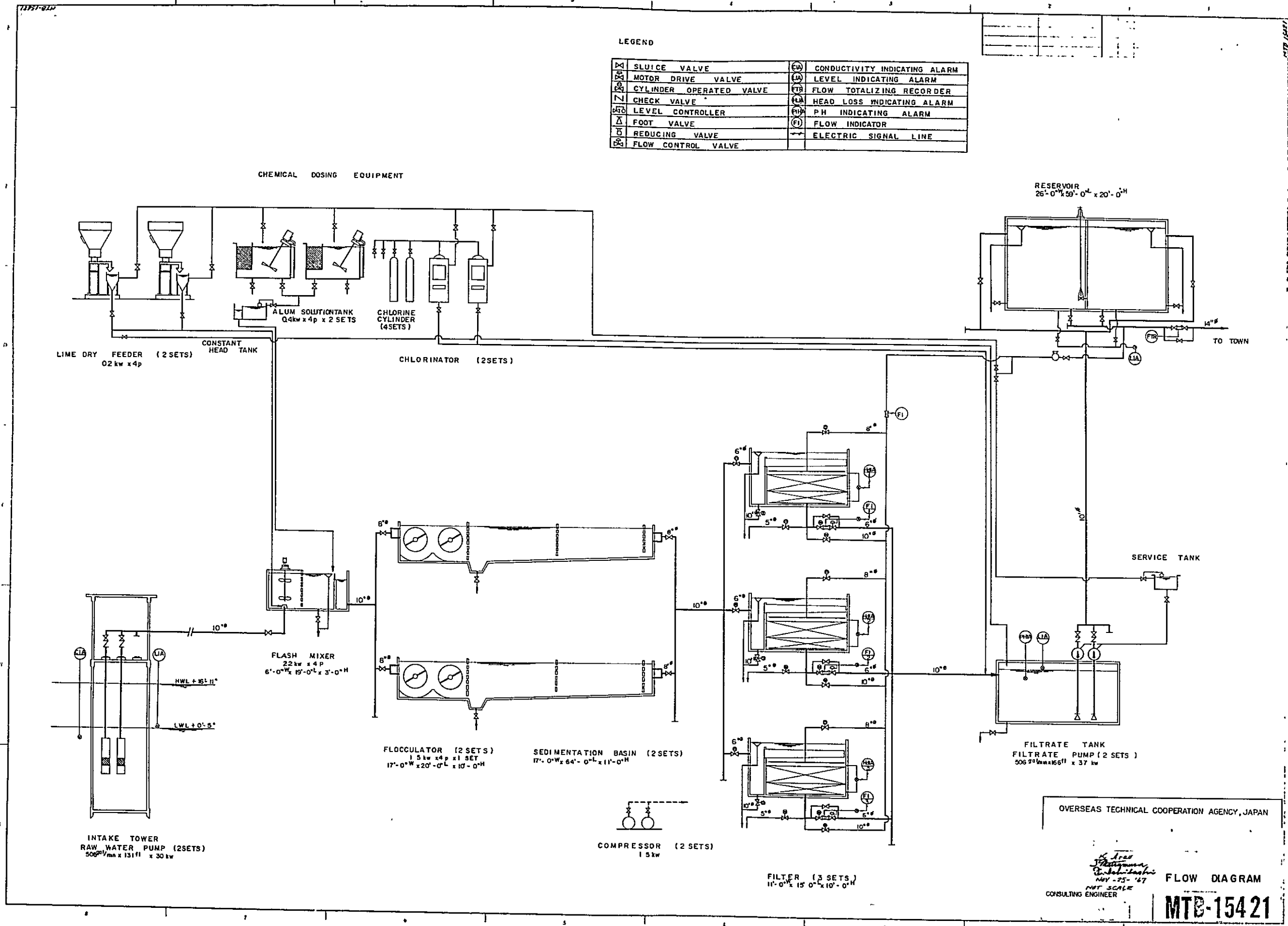
DRAWN BY: *K. Arai*
 CHECKED BY: *K. Arai*
 APPROVED BY: *K. Arai*
 DATE: *NOV. 25 '67*
 SCALE: *VERT. 1" = 25' HORIZ. 1" = 250'*

CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD.
 TOKYO, JAPAN

DRWG. NO. **MTB-15442**

LEGEND

⊠	SLUICE VALVE	⊞	CONDUCTIVITY INDICATING ALARM
⊞	MOTOR DRIVE VALVE	⊞	LEVEL INDICATING ALARM
⊞	CYLINDER OPERATED VALVE	⊞	FLOW TOTALIZING RECORDER
⊞	CHECK VALVE	⊞	HEAD LOSS INDICATING ALARM
⊞	LEVEL CONTROLLER	⊞	P H INDICATING ALARM
⊞	FOOT VALVE	⊞	FLOW INDICATOR
⊞	REDUCING VALVE	⊞	ELECTRIC SIGNAL LINE
⊞	FLOW CONTROL VALVE		

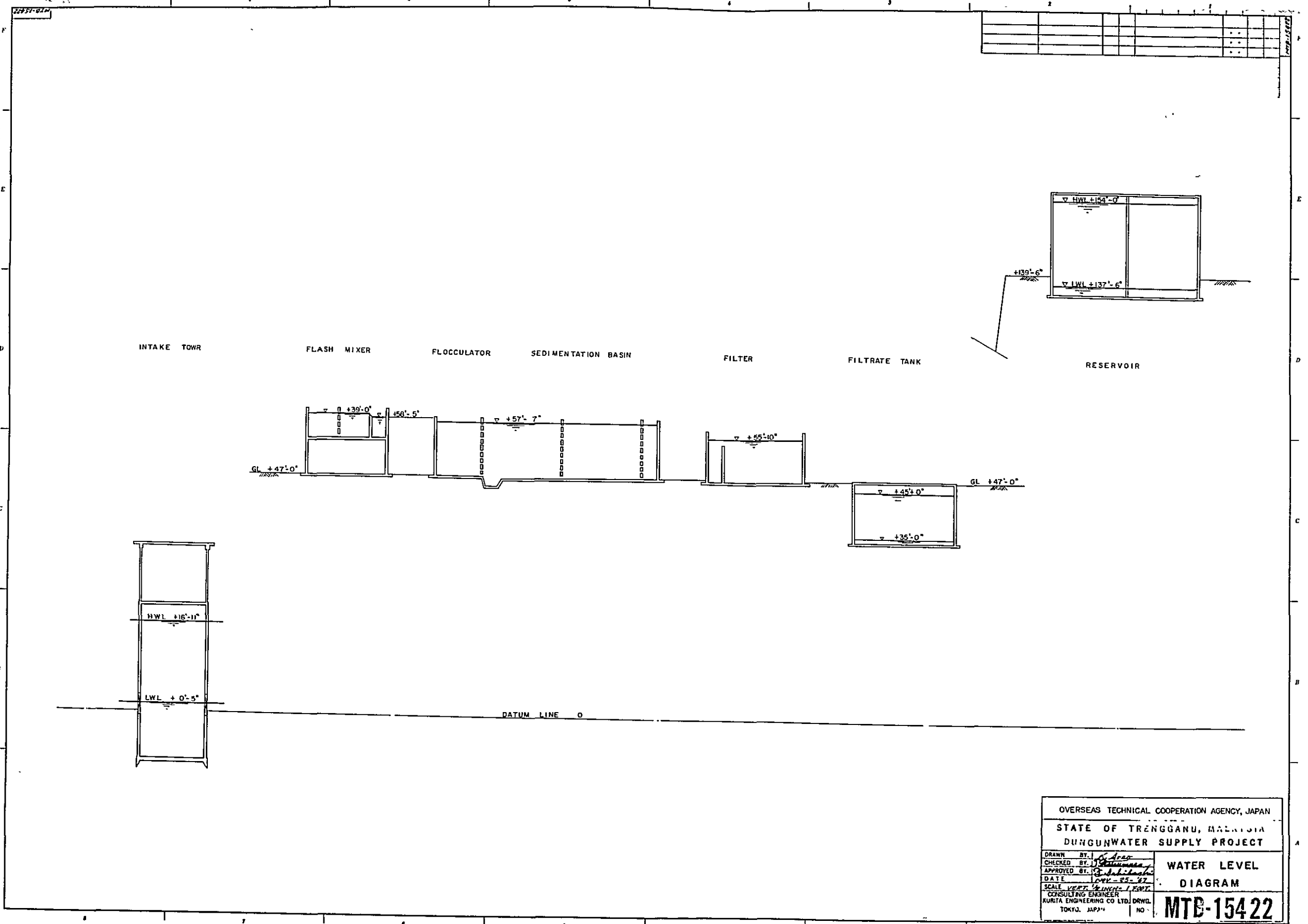


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

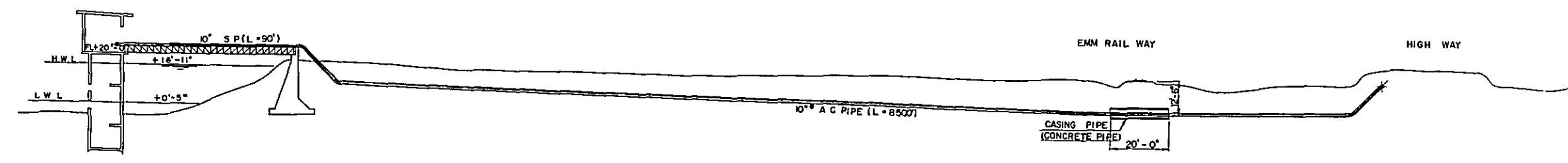
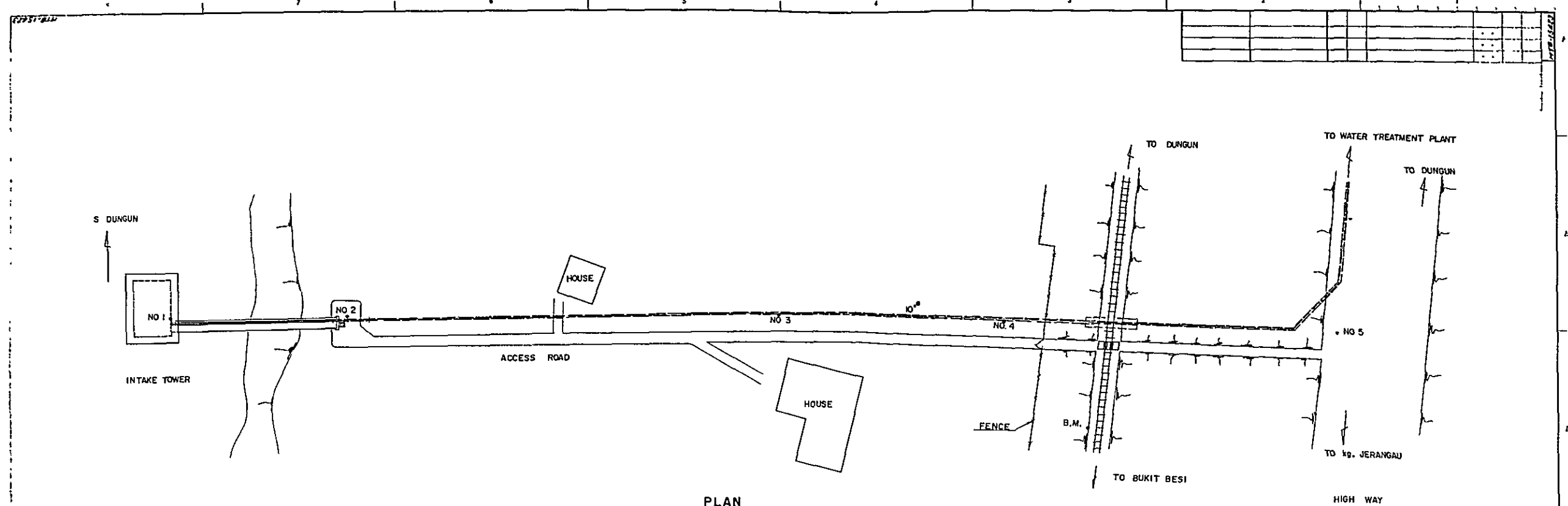
Shiro
Shigemasa
Shibata
MAY - 25 - '67
CONSULTING ENGINEER

FLOW DIAGRAM

MTB-15421

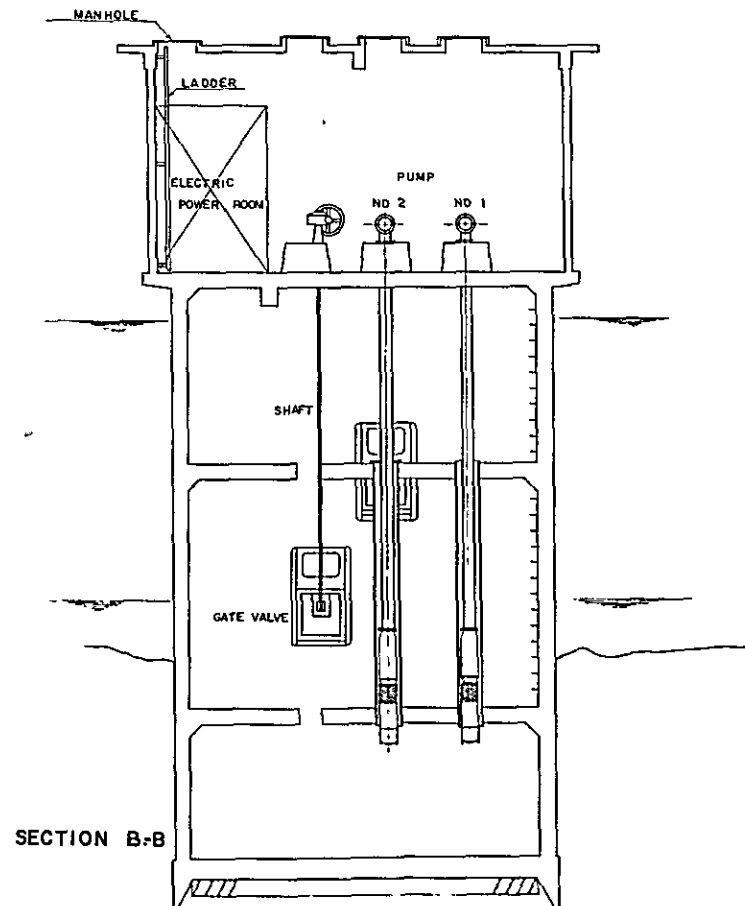
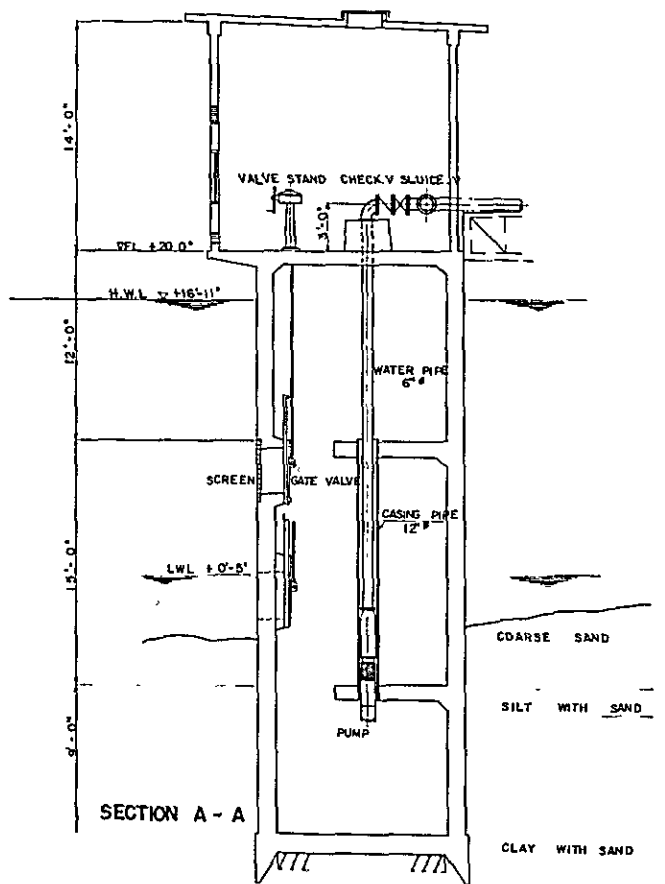
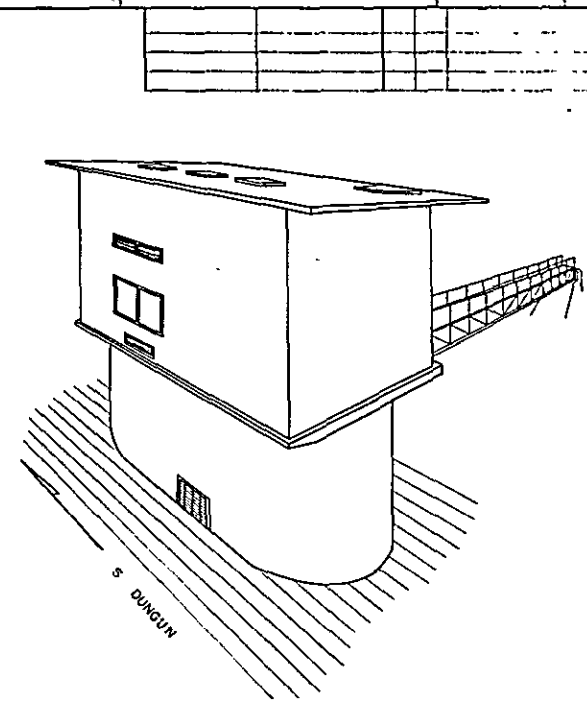
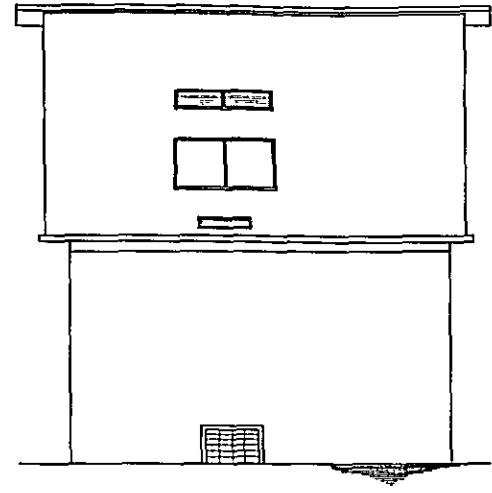
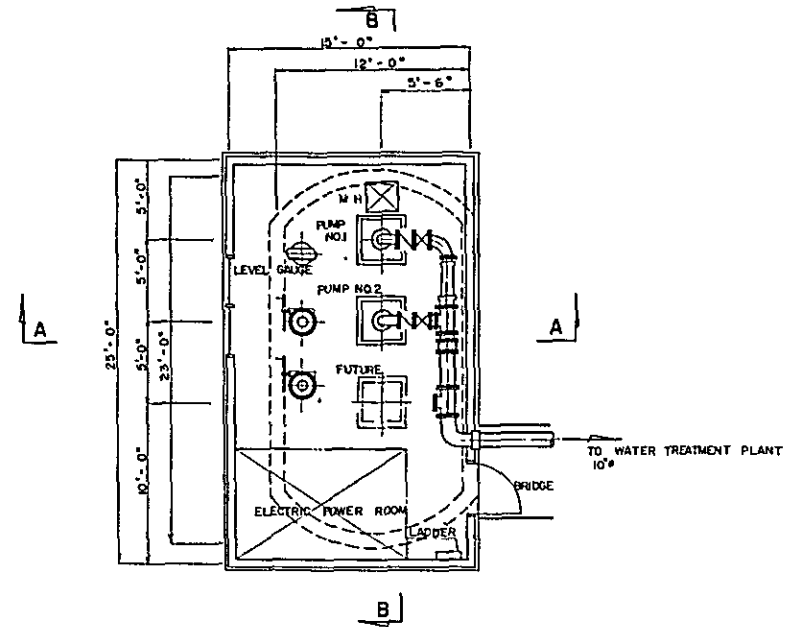


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUNWATER SUPPLY PROJECT	
DRAWN BY: <i>J. S. Lee</i> CHECKED BY: <i>J. S. Lee</i> APPROVED BY: <i>J. S. Lee</i> DATE: 1974-05-27 SCALE: 1/2" = 1'-0" CONSULTING ENGINEER KURITA ENGINEERING CO. LTD. DRWG. TOKYO, JAPAN	WATER LEVEL DIAGRAM MTB-15422



REMARKS
NO. 1-5 ARE SURVEY POINT, REFER TO DRWG NO MTB-15441 PROFILE.

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUN WATER SUPPLY PROJECT	
DRAWN BY <i>K. Asa</i>	PLAN AND PLOT FOR INTAKE SITE
CHECKED BY <i>S. S. S. S.</i>	
APPROVED BY <i>S. S. S. S.</i>	MTB-15423
DATE <i>NOV-65-67</i>	
SCALE <i>1/4" = 1'-0"</i>	
CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. DRWG. TOKYO, JAPAN	



FINISH

INTERNAL FINISH

	WALLS	CEILINGS	FLOORS
PUMP HOUSE	PLASTER	PLASTER	MORTAR
TOWER	BARE	BARE	BARE

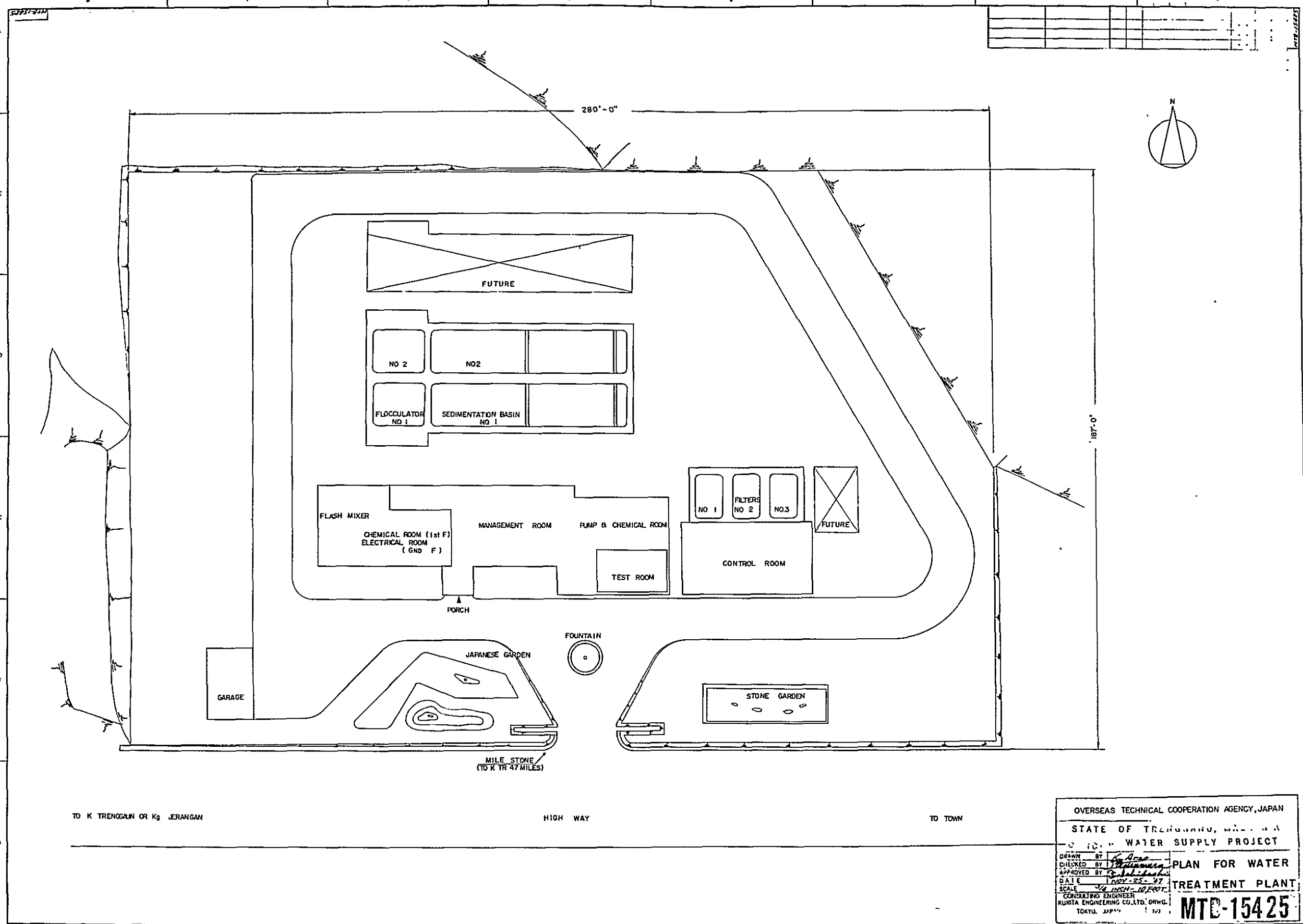
EXTERNAL FINISH

PUMP HOUSE WALLS COLOR MORTAR
 ROOF WATER-PROOF MORTAR
 TOWER ALL BARE

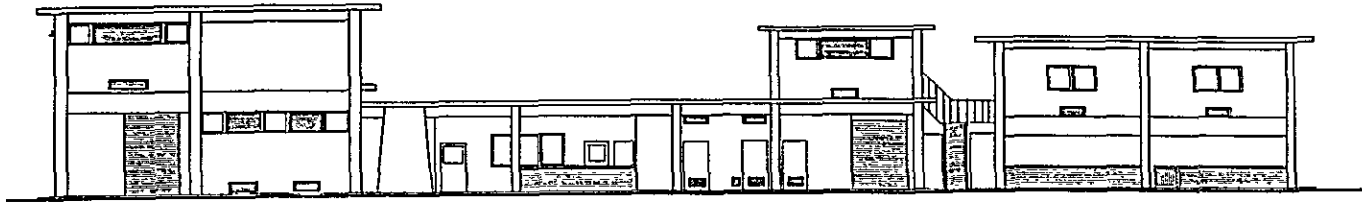
REMARKS

ALL CONCRETE MADE

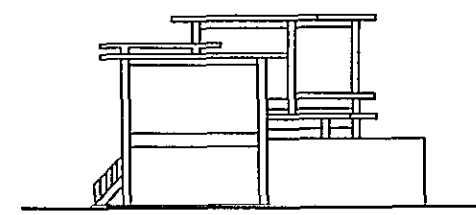
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 DUNGUN WATER SUPPLY PROJECT
 PLAN FOR INTAKE STATION
 DRAWN BY K. Arai
 CHECKED BY S. Shimizu
 APPROVED BY S. Shimizu
 DATE NOV. 25 '67
 SCALE 1/8" = 1 FOOT
 CONSULTING ENGINEER
 T. S. ENGINEERING CO., LTD. FROM
 TOKYO, JAPAN NO. **MTL-15424**



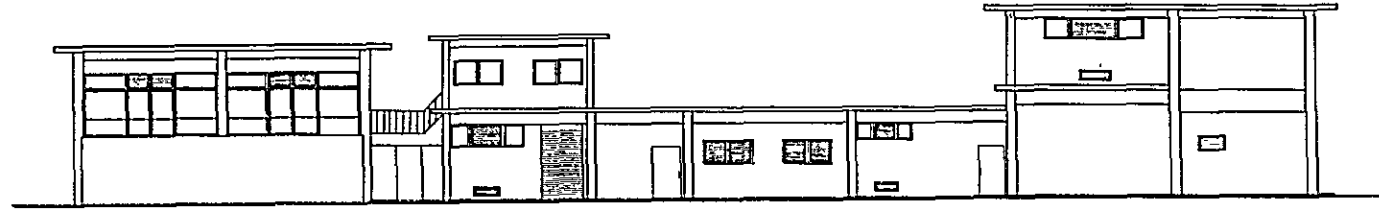
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
WATER SUPPLY PROJECT	
PLAN FOR WATER TREATMENT PLANT	
DRAWN BY <i>K. Arai</i>	MTD-15425 <small>1/3</small>
CHECKED BY <i>[Signature]</i>	
APPROVED BY <i>[Signature]</i>	
DATE <i>1987-23-87</i>	
SCALE <i>1/8" = 10'-0"</i>	
CONSULTING ENGINEER KUMITA ENGINEERING CO., LTD. DRWG. TOKYO, JAPAN	



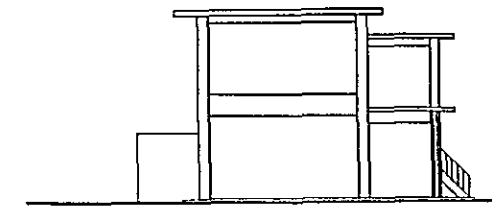
FRONT ELEVATION



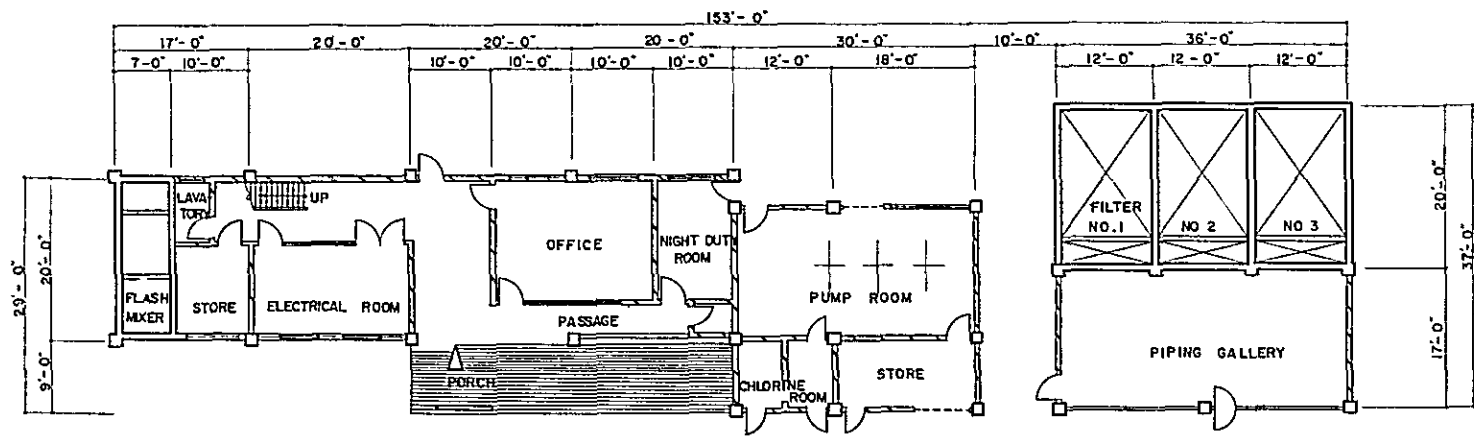
SIDE ELEVATION



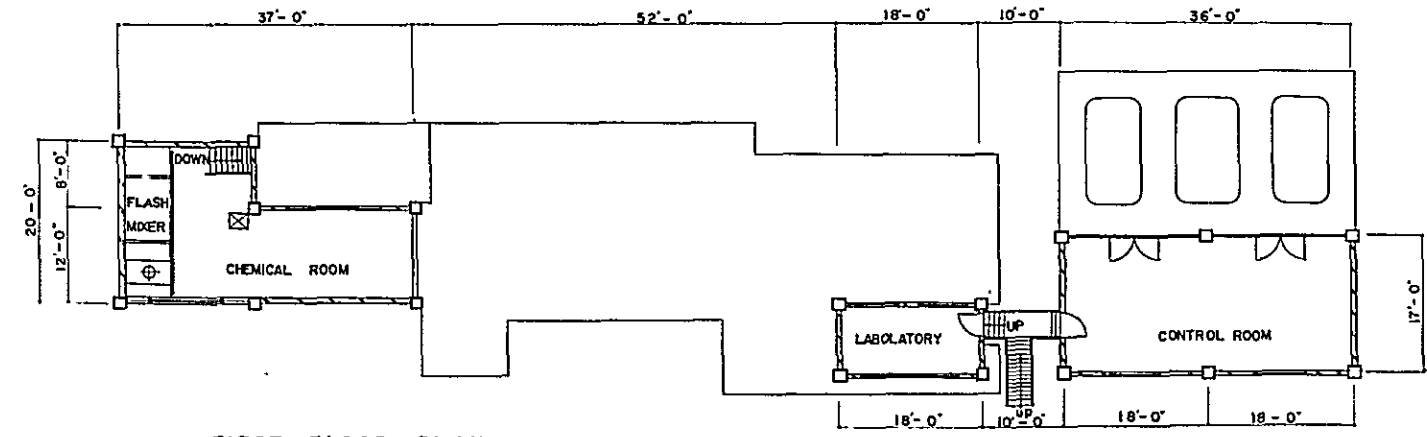
REAR ELEVATION



SIDE ELEVATION



GROUND FLOOR PLAN



FIRST FLOOR PLAN

FINISH

INTERNAL FINISH

	WAINSCOTTING	WALLS	CEILINGS	FLOORS
PORCH	PLASTER	PLASTER	ACOUSTIC BOARD	CLINKER TILE
OFFICE	PLASTER	PLASTER	ACOUSTIC BOARD	LINOLEUM
NIGHT DUTY ROOM	PLASTER	PLASTER	ACOUSTIC BOARD	LINOLEUM
LAVATORY	MOSAIC TILE	PLASTER	BARE	MOSAIC TILE
KETTLE ROOM	MOSAIC TILE	MOSAIC TILE	PLASTER	MOSAIC TILE
PASSAGE	PLASTER	PLASTER	ACOUSTIC BOARD	CLINKER TILE
ELECTRICAL ROOM	PLASTER	PLASTER	BARE	LINOLEUM
PUMP ROOM	VINYL PAINT	PLASTER	BARE	TERRAZZO TILE
STORE	BARE	BARE	BARE	BARE
CHLORINE ROOM	ACID PROOF MORTAR	ACID PROOF MORTAR	ACID PROOF MORTAR	ACID PROOF MORTAR
PIPING GALLERY	BARE	BARE	BARE	BARE
LABORATORY	MOSAIC TILE	PLASTER	ACOUSTIC BOARD	MOSAIC TILE
CHEMICAL ROOM	ACID PROOF MORTAR	ACID PROOF MORTAR	ACID PROOF MORTAR	ACID PROOF MORTAR
CONTROL ROOM	VINYL PAINT	PLASTER	PLASTER	LINOLEUM

EXTERNAL FINISH

WALLS	COLORED MORTAR
COLUMNS	BARE
ROOFS	WATER PROOF MORTAR

- REMARKS
- BRICK WALLS
 - CONCRETE COLUMNS
 - DENOTES CEILING ABOVE

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA

DUNGUN WATER SUPPLY PROJECT

DRAWN BY: *A. Arao*

CHECKED BY: *J. Kishimura*

APPROVED BY: *S. Ishikawa*

DATE: *1961-03-27*

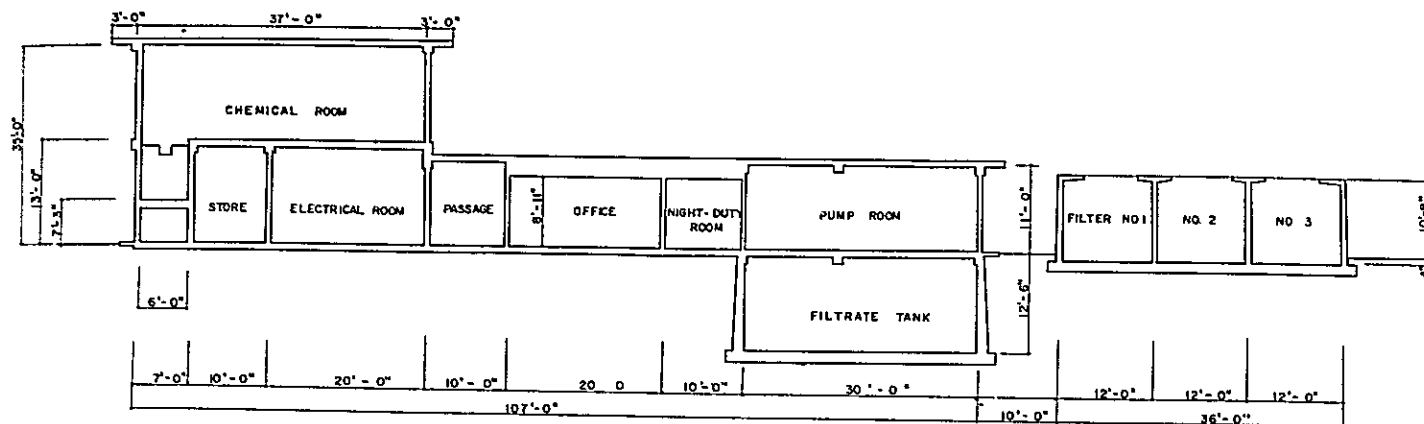
SCALE: *1/4" = 1'-0"*

CONSULTING ENGINEER

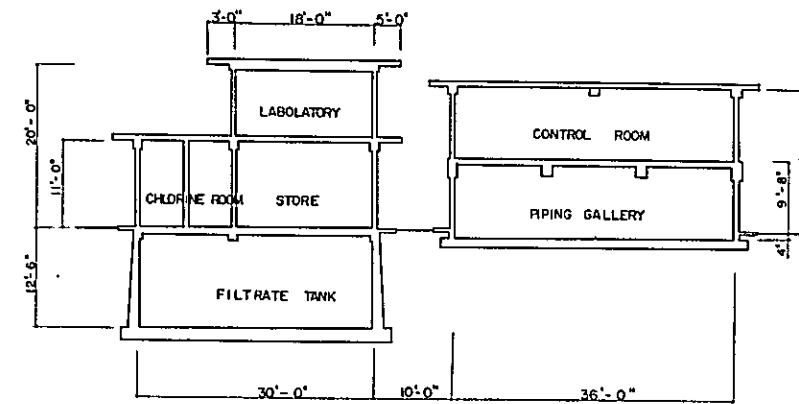
KUMITA ENGINEERING CO. LTD. DRWG. NO. *MTL-15426*

TOKYO, JAPAN

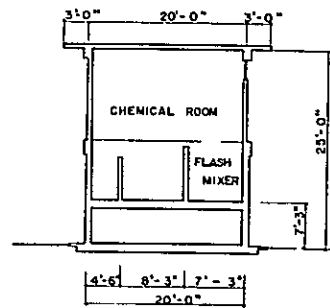
FLOOR & ELEVATION PLAN FOR CONTROL BUILDING



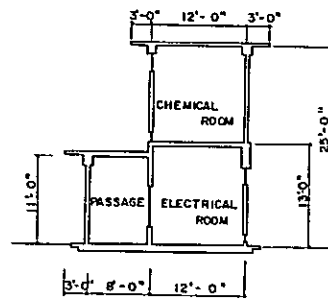
SECTION A - A



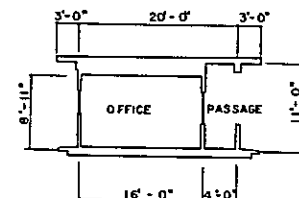
SECTION B - B



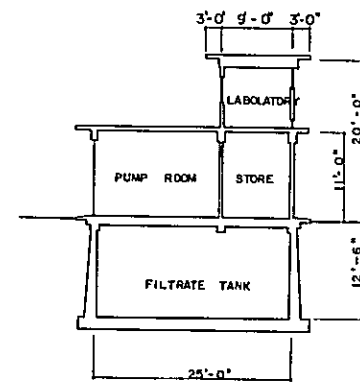
SECTION C - C



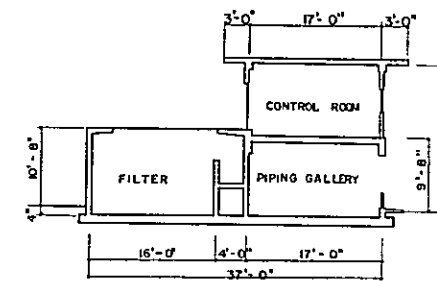
SECTION D - D



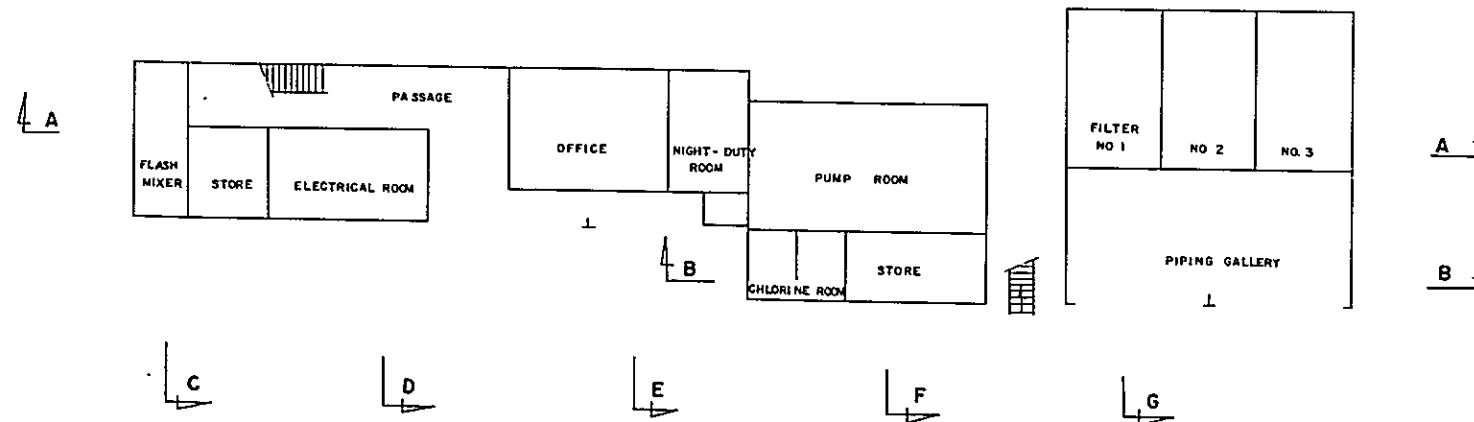
SECTION E - E



SECTION F - F

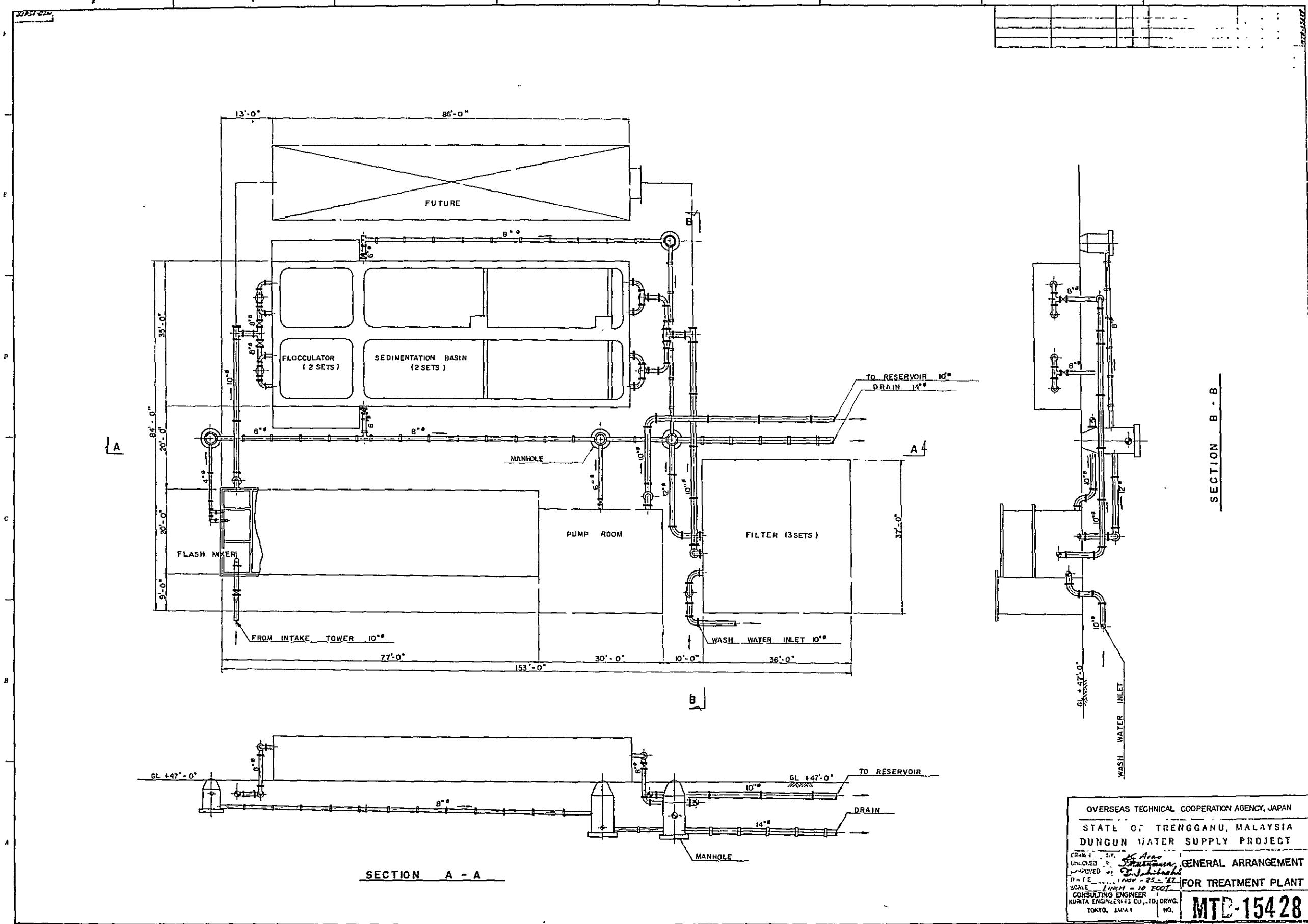


SECTION G - G



OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TERENGGANU, MALAYSIA
 MUN. WATER SUPPLY PROJECT
 SECTION FOR
 CONTROL BUILDING
 DRAWN BY: *K. Arao*
 CHECKED BY: *S. Shimada*
 APPROVED BY: *S. Sakai*
 DATE: NOV. 25, '87
 SCA - 100000000
 CONSULTING ENGINEER
 PURTA - PUNCEBUNG COLLEGE DRNG.
 112, JAPAN

MTD-15427

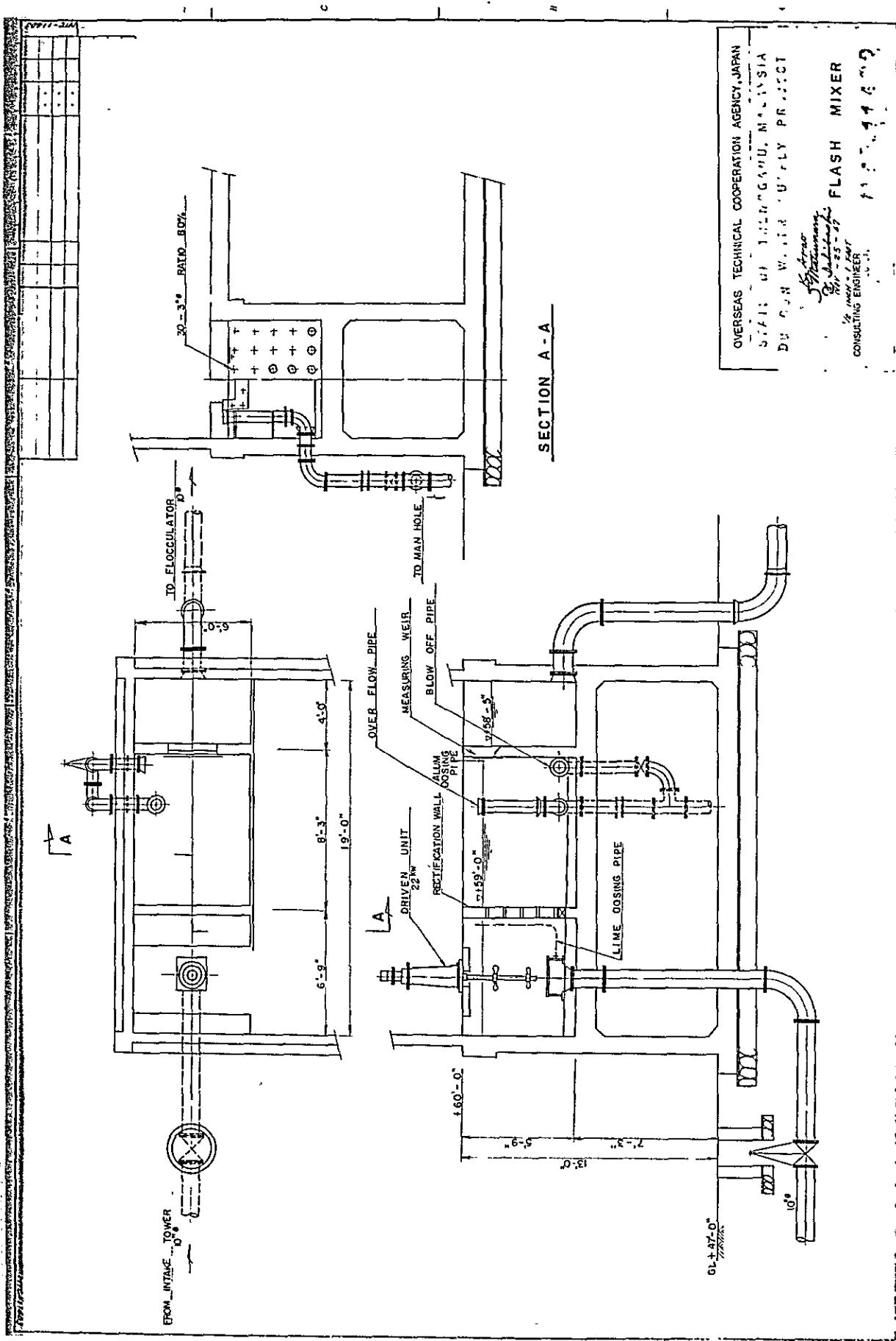


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 DUNGUN WATER SUPPLY PROJECT

GENERAL ARRANGEMENT
 FOR TREATMENT PLANT

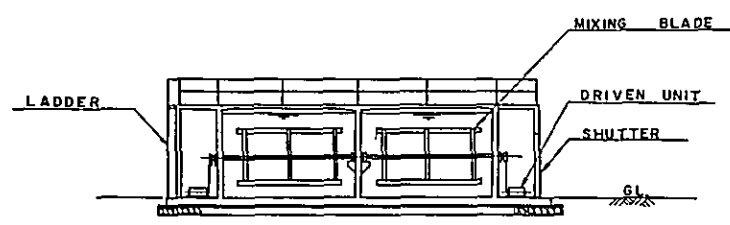
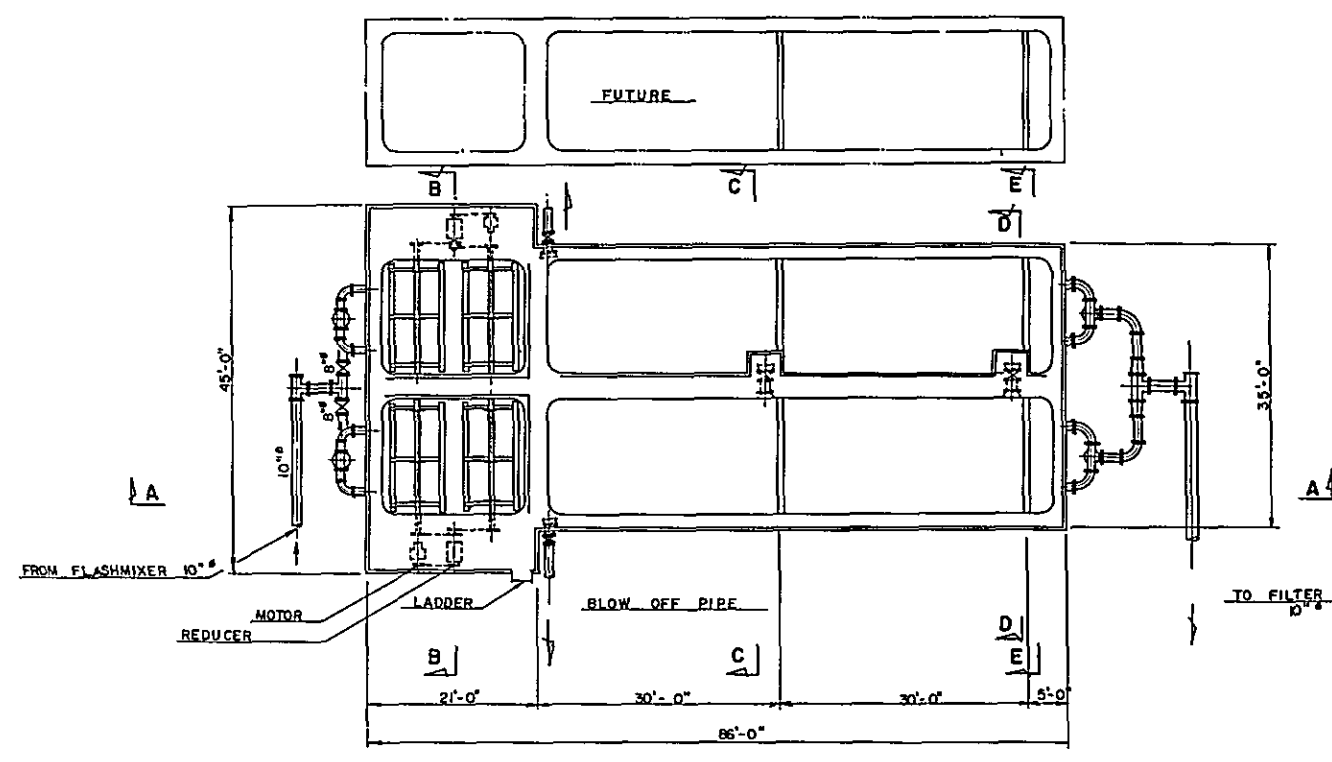
NO. **MTD-15428**

DATE: 11/25/62
 SCALE: 1" = 10' FOOT
 CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRWG.
 TOKYO, JAPAN

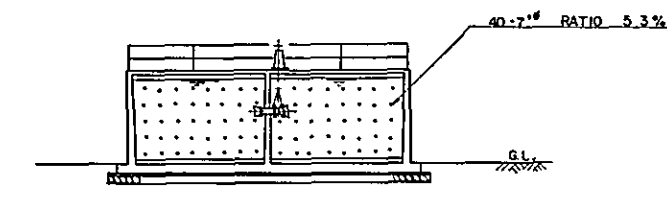


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STAFF: U. THIRUGANU, MALAYSIA
 DR. S. N. W. I. R. SURESH PRASAD
S. Aravindan
S. Subramanian
 1/2 inch = 1 foot
 CONSULTING ENGINEER
 11.11.69

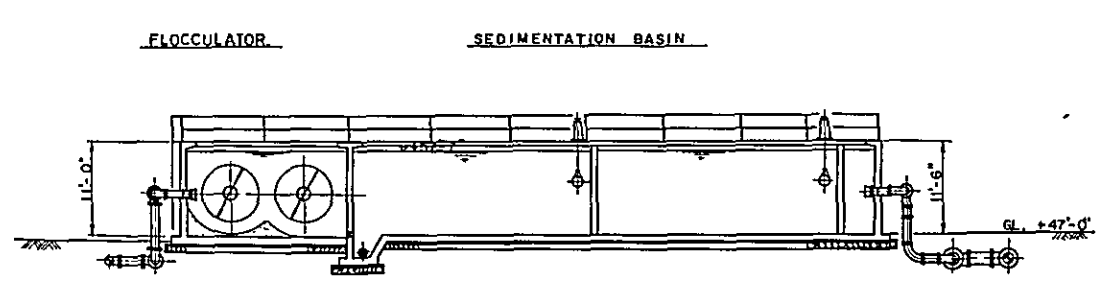
SECTION A - A



SECTION B-B



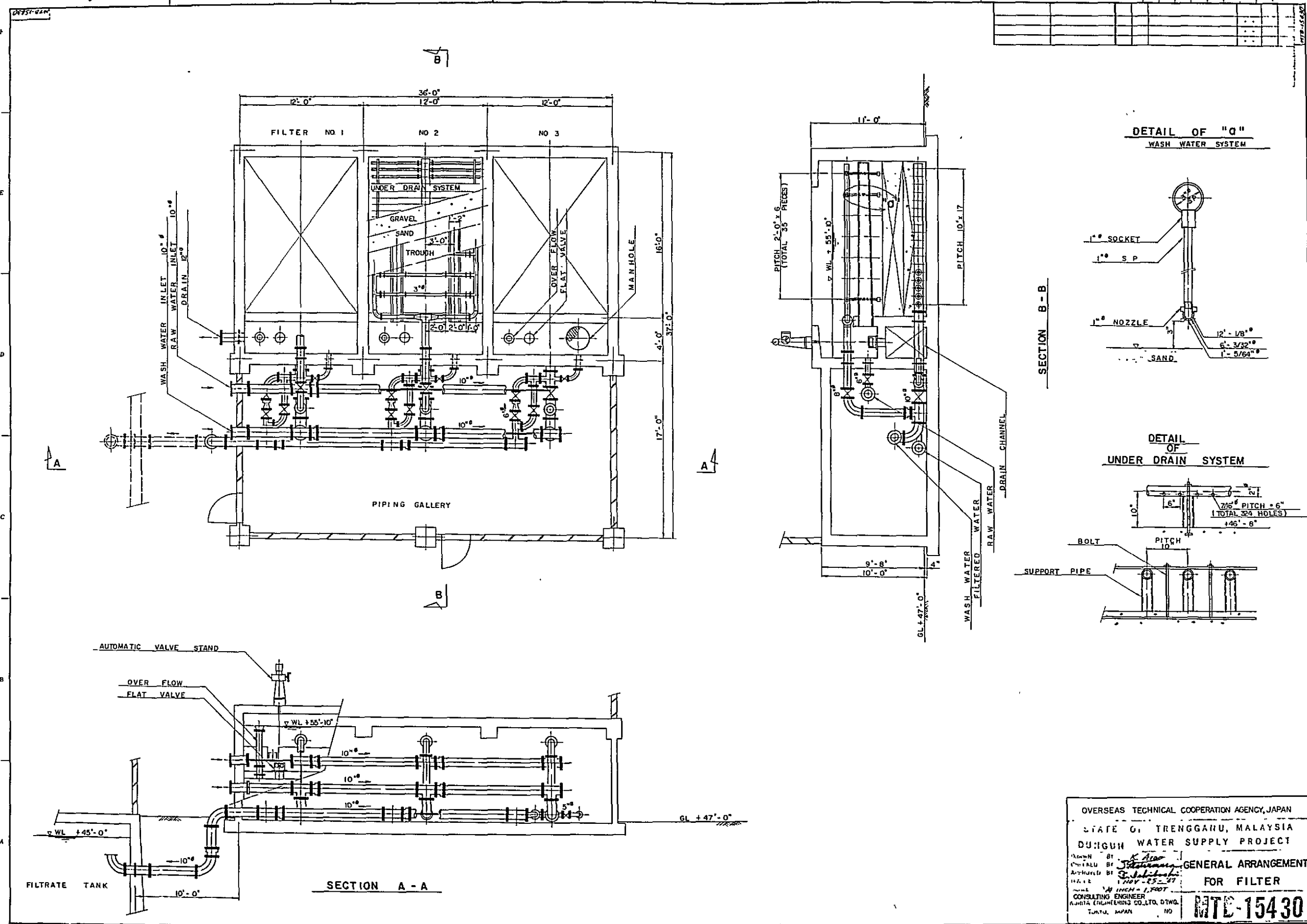
STANDARD SECTION (RECTIFICATION WALL)
APPLY THIS TO SECTION C-C, D-D, E-E

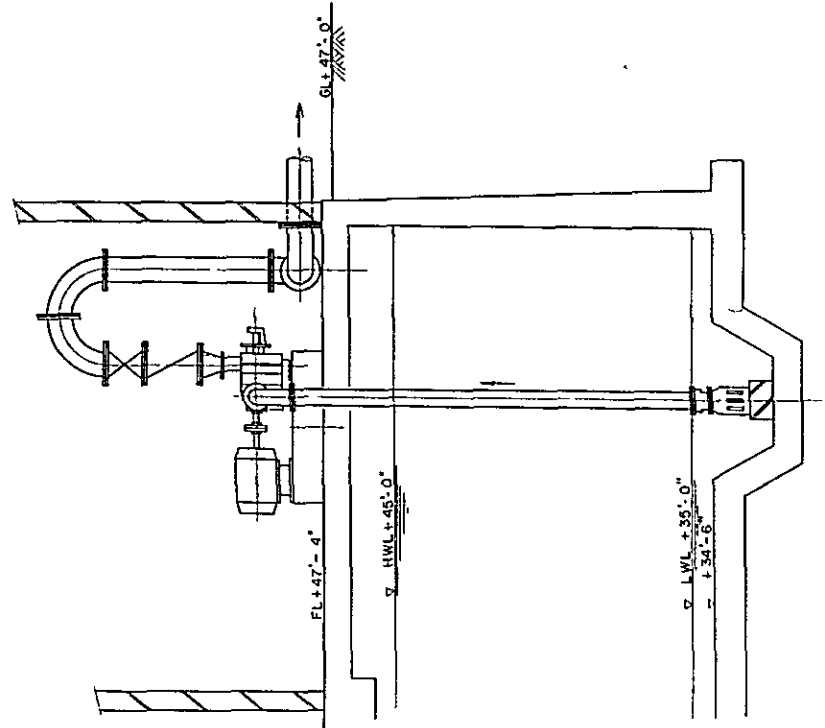
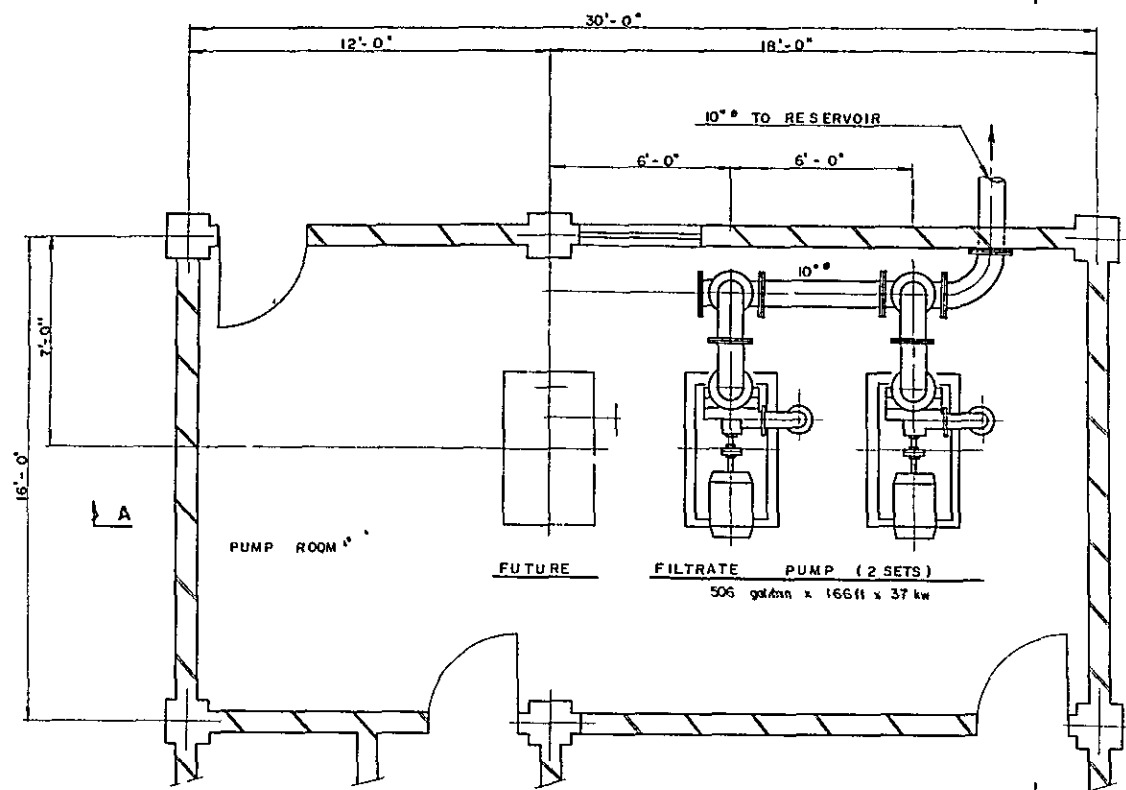


SECTION A-A

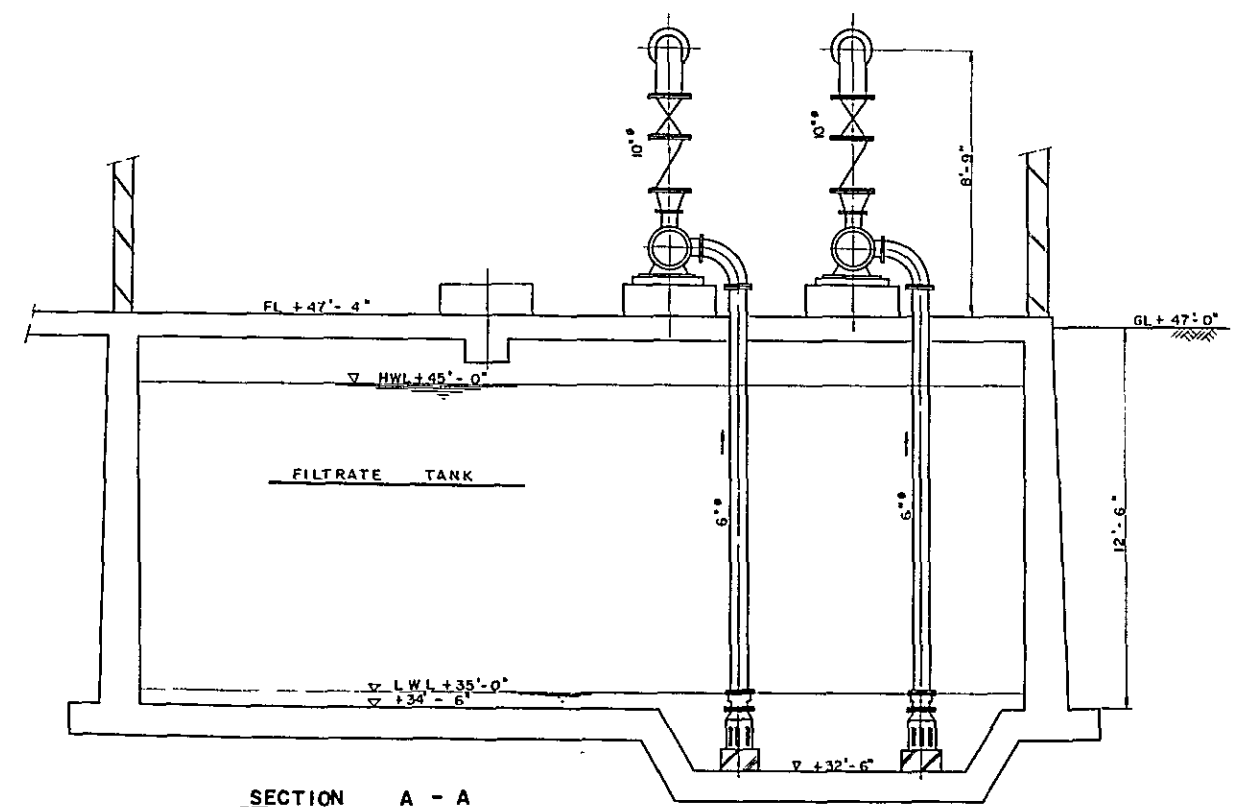
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 DUNGUN WATER SUPPLY PROJECT
 GENERAL ARRANGEMENT
 FOR CLALIFIER
 MTD-15429

DRAWN BY: *[Signature]*
 APPROVED BY: *[Signature]*
 DATE: Nov-25-57
 SCALE: 1/4" = 10'-00"
 CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRAG.
 TOKYO, JAPAN





SECTION B - B



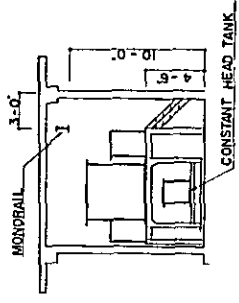
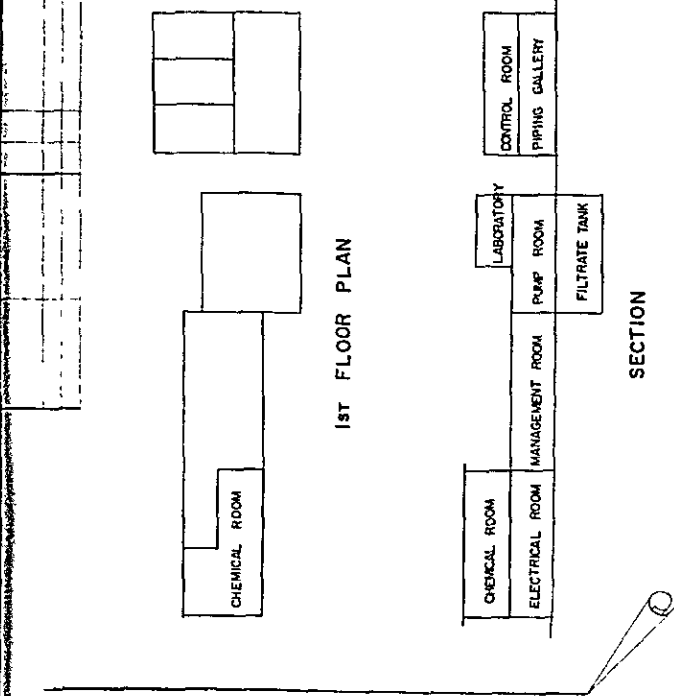
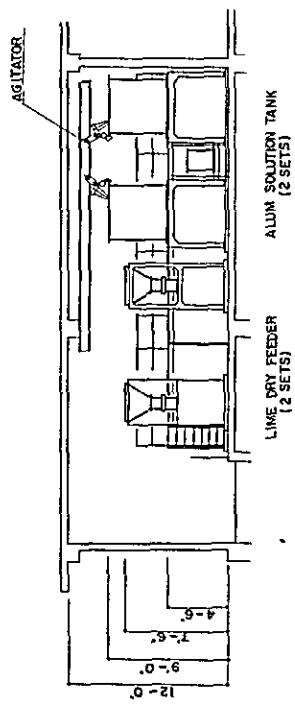
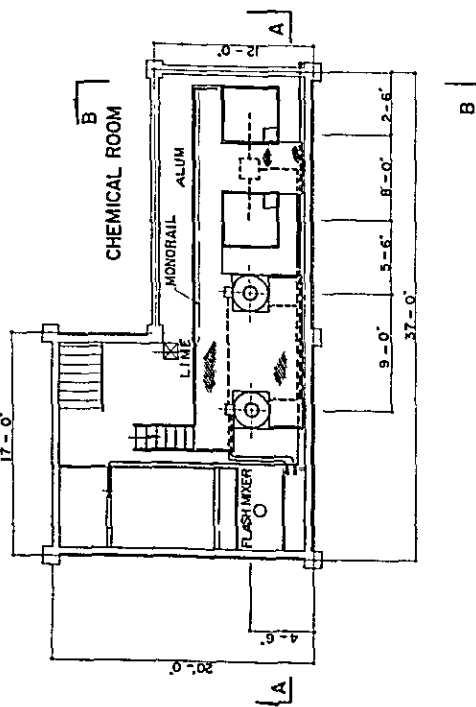
SECTION A - A

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

K. Iino
S. Shimizu
S. Sakibashi
 NOV - 25 - 67
 1/4" INCH = 1 FOOT
 CONSULTING ENGINEER

GENERAL ARRANGEMENT
 FOR FILTRATE PUMP

MTD-15431



OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA

DUNGUN WATER SUPPLY PROJECT

DESIGNED BY *Aras*

ENGINEERED BY *S. S. S. S.*

DATE *NOV 25 1971*

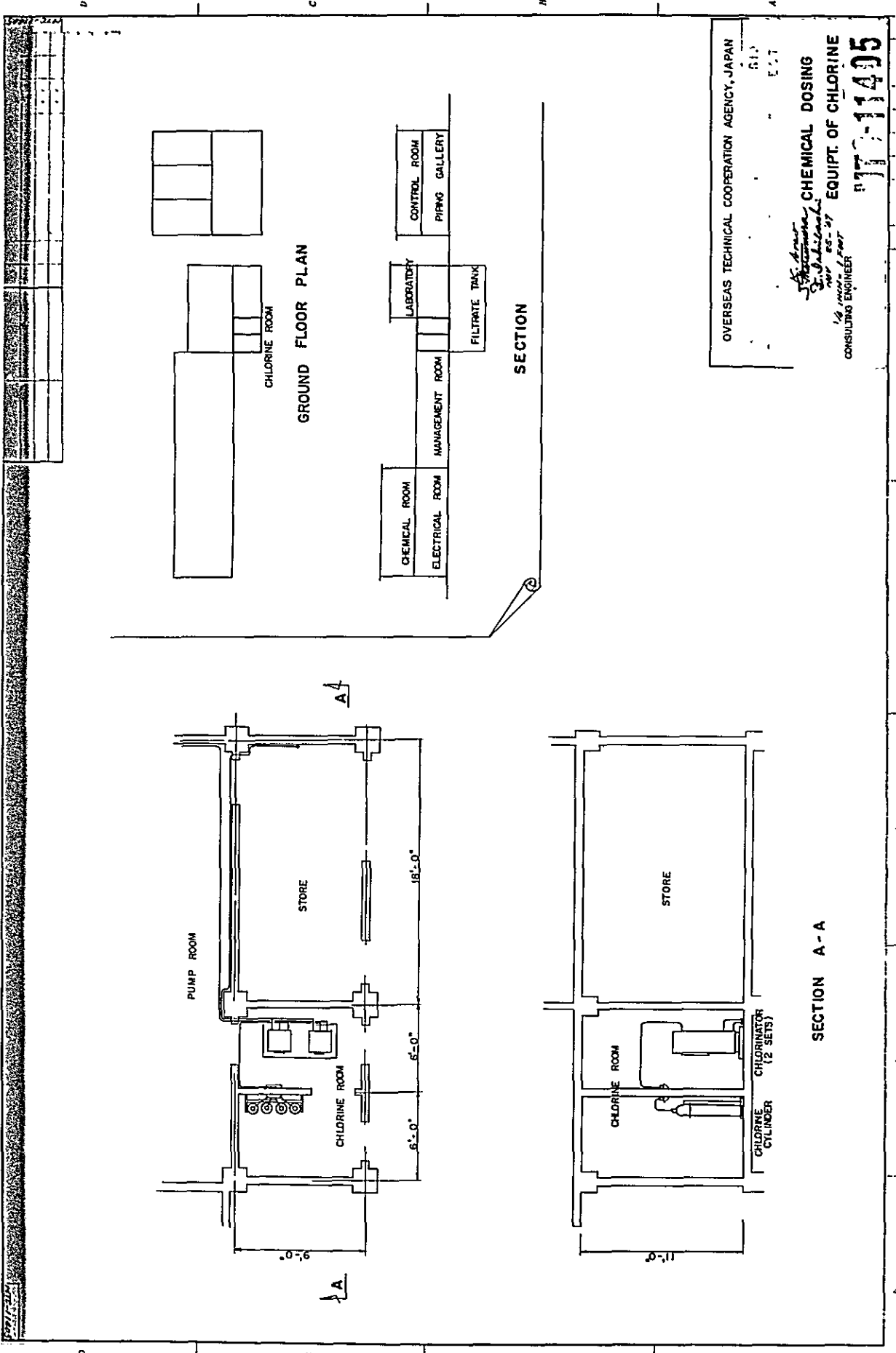
PROJECT *CHEMICAL DOSING EQUIP.*

CONSULTING ENGINEER

YAMAGUCHI ENGINEERING CO. LTD. DRNG.

1-1-1 HIRAKAWA, TOKYO, JAPAN

MT-11494



GROUND FLOOR PLAN

SECTION

SECTION A - A

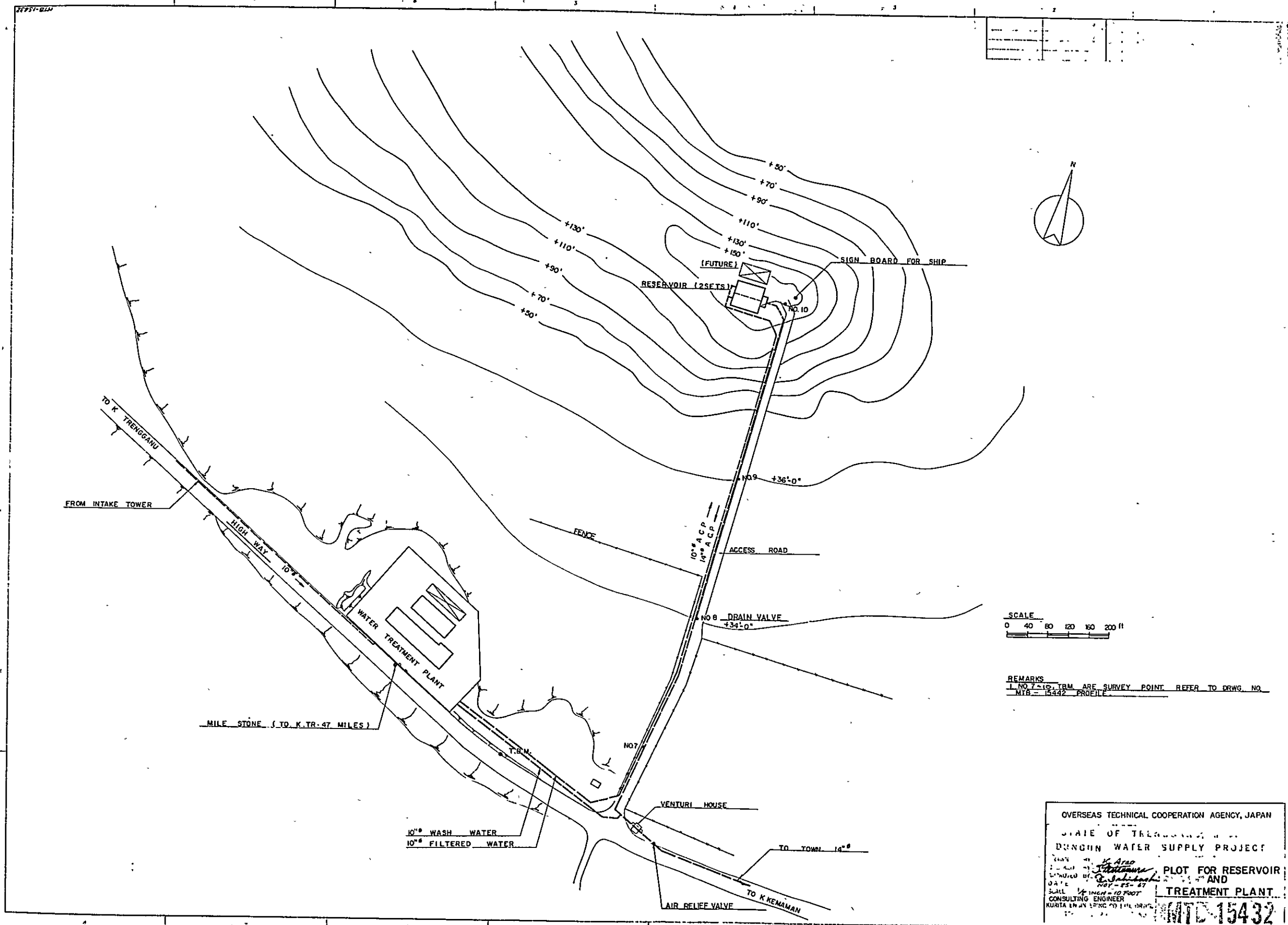
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

51.1
E. 1.1

Shigeo
S. Ishikawa
1/4 inch = 1 foot
1957-58-59
CONSULTING ENGINEER

CHEMICAL DOSING
EQUIPT. OF CHLORINE

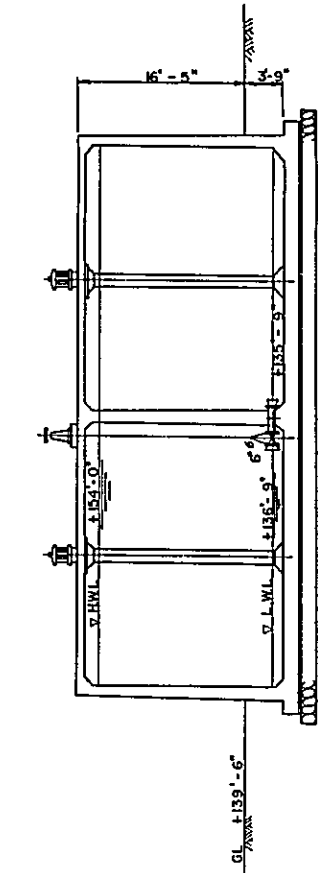
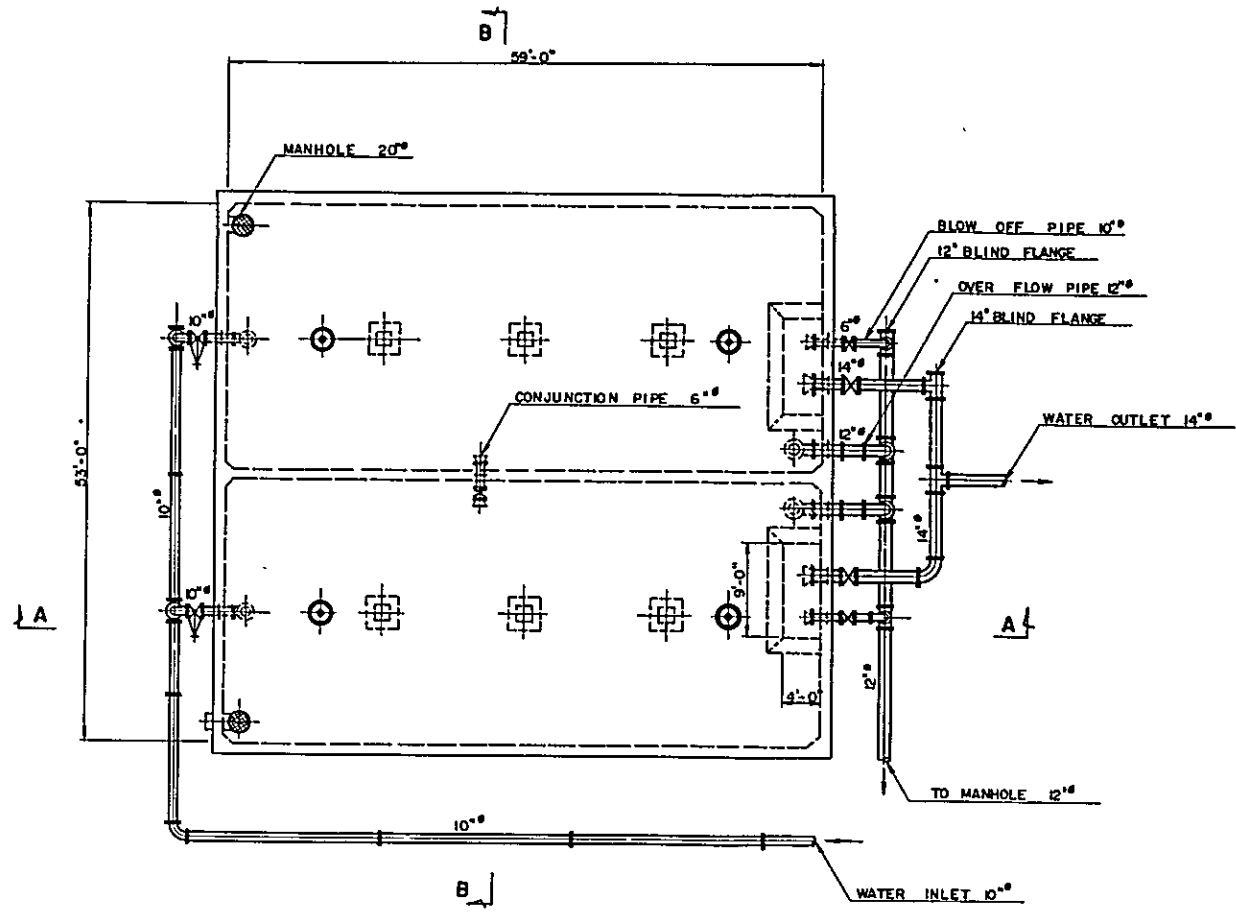
117-11405



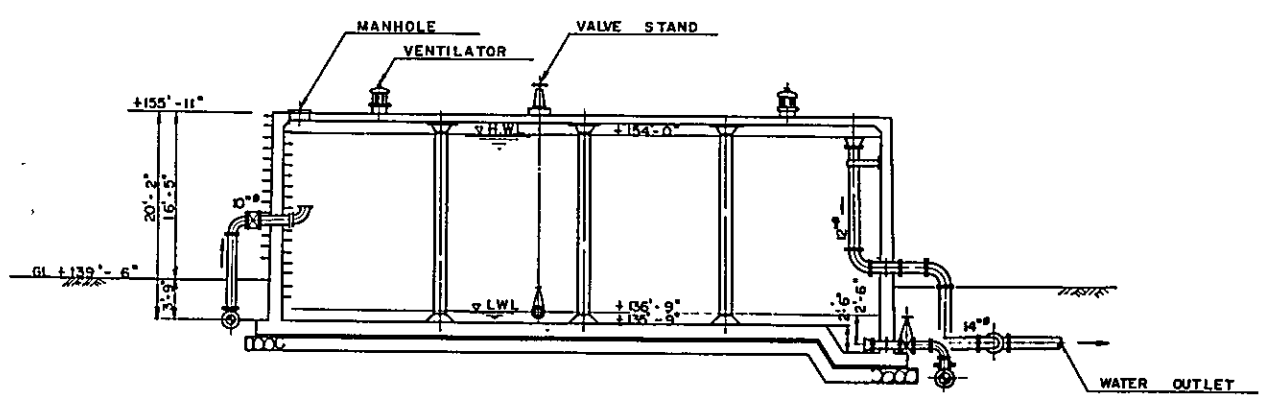
SCALE
0 40 80 120 160 200 ft

REMARKS
1. NO. 7 & 8 T.B.M. ARE SURVEY POINT. REFER TO DRWG. NO. MTS-15442 PROFILE.

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
STATE OF TERENGGANU
DUNGUN WATER SUPPLY PROJECT
PLOT FOR RESERVOIR AND TREATMENT PLANT
DESIGNED BY: *K. Aris*
DATE: *NOV-25-57*
SCALE: 1/4" = 10' FOOT
CONSULTING ENGINEER: *KURITA ENYU ENGINEERING CO. LTD.*
MTD-15432

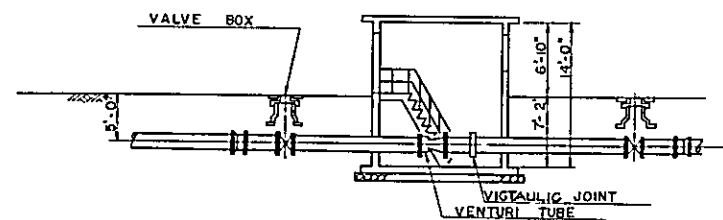
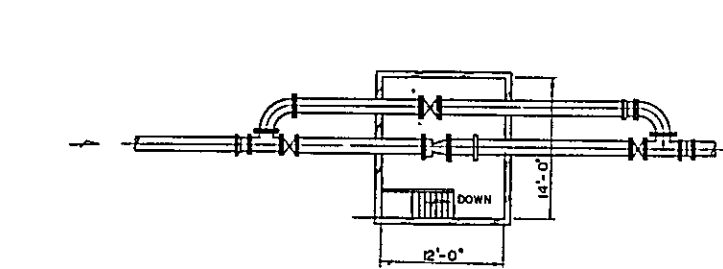


SECTION B - B

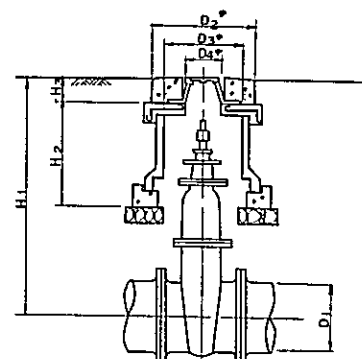
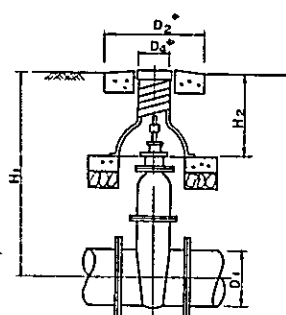
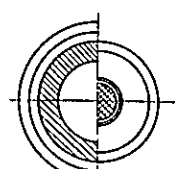
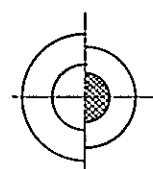


SECTION A - A

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUN WATER SUPPLY PROJECT	
DRAWN BY: <i>S. Anoo</i> CHECKED BY: <i>S. Anoo</i> APPROVED BY: <i>S. Anoo</i> DATE: 1962.02.17 SCALE: 1/4" = 1'-0"	RESERVOIR
CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. TOKYO, JAPAN	DRWG. NO. MTL-15433

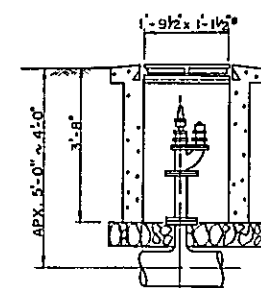
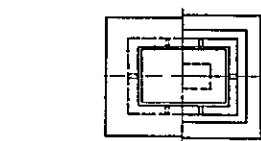


VENTURI HOUSE (WITH BYPASS)

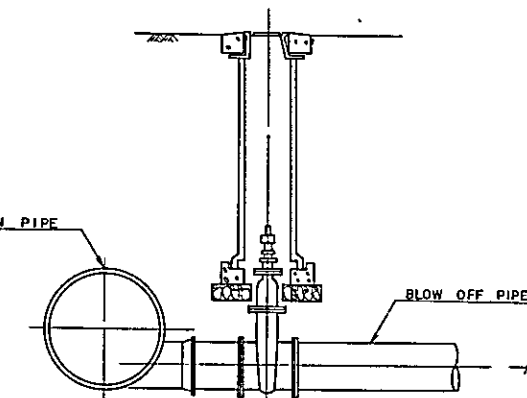


SLUICE VALVE BOX (1)
APPLY TO BOX (2)

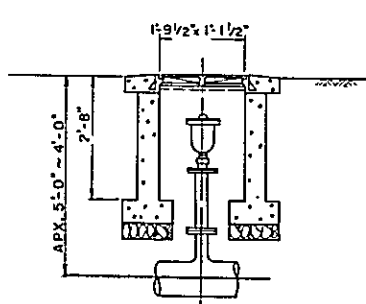
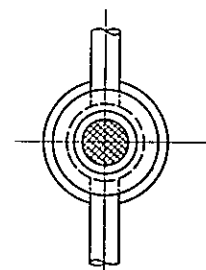
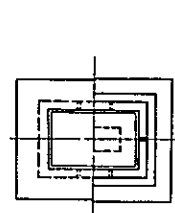
SLUICE VALVE BOX (2)



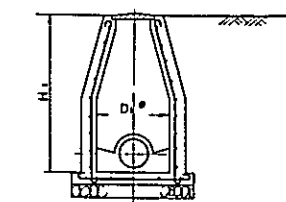
HYDRANT



DRAIN VALVE

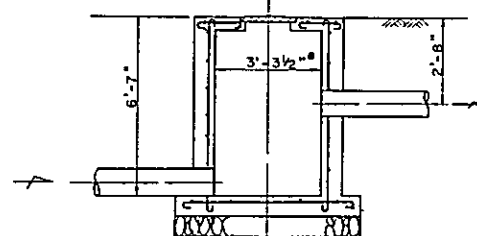
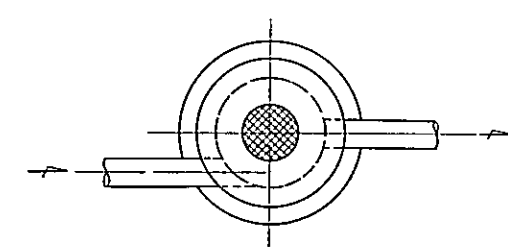


AIR RELIEF VALVE

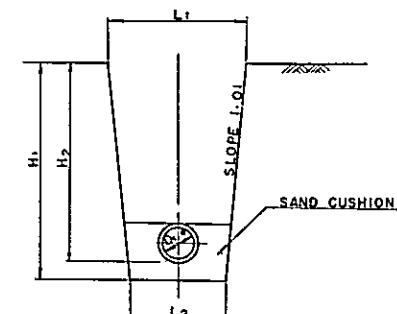


D₁ = 2'-0" to 4'-0"
H₁ VARIES WITH FORMATION HEIGHT AND DIAMETER OF PIPES

MANHOLE



MANHOLE FOR DRAINAGE OF RESERVOIR



STANDARD SECTION FOR LAYING A.C. PIPE

SLUICE VALVE BOX

D ₁	D ₂	D ₃	D ₄	H ₁	H ₂	H ₃	REMARKS
3"	1'-8"	7 7/8"	7 1/8"	4'-1 1/2"	3'-8"	5 1/2"	(1)
4"	1'-8"	7 7/8"	7 1/8"	4'-1 1/2"	3'-8"	5 1/2"	(1)
5"	1'-8"	7 7/8"	7 1/8"	4'-1 1/2"	3'-8"	5 1/2"	(1)
6"	1'-8"	7 7/8"	7 1/8"	4'-1 1/2"	3'-8"	5 1/2"	(1)
8"	1'-8"	7 7/8"	7 1/8"	4'-1 1/2"	3'-8"	5 1/2"	(1)
10"	2'-0"	1'-2"	8 7/8"	4'-3 1/2"	4'-10"	5 1/2"	(2)
12"	2'-0"	1'-2"	8 7/8"	4'-3 1/2"	4'-10"	5 1/2"	(2)
14"	2'-0"	1'-2"	8 7/8"	4'-3 1/2"	4'-10"	5 1/2"	(2)

STANDARD DIMENSION FOR A.C. PIPE

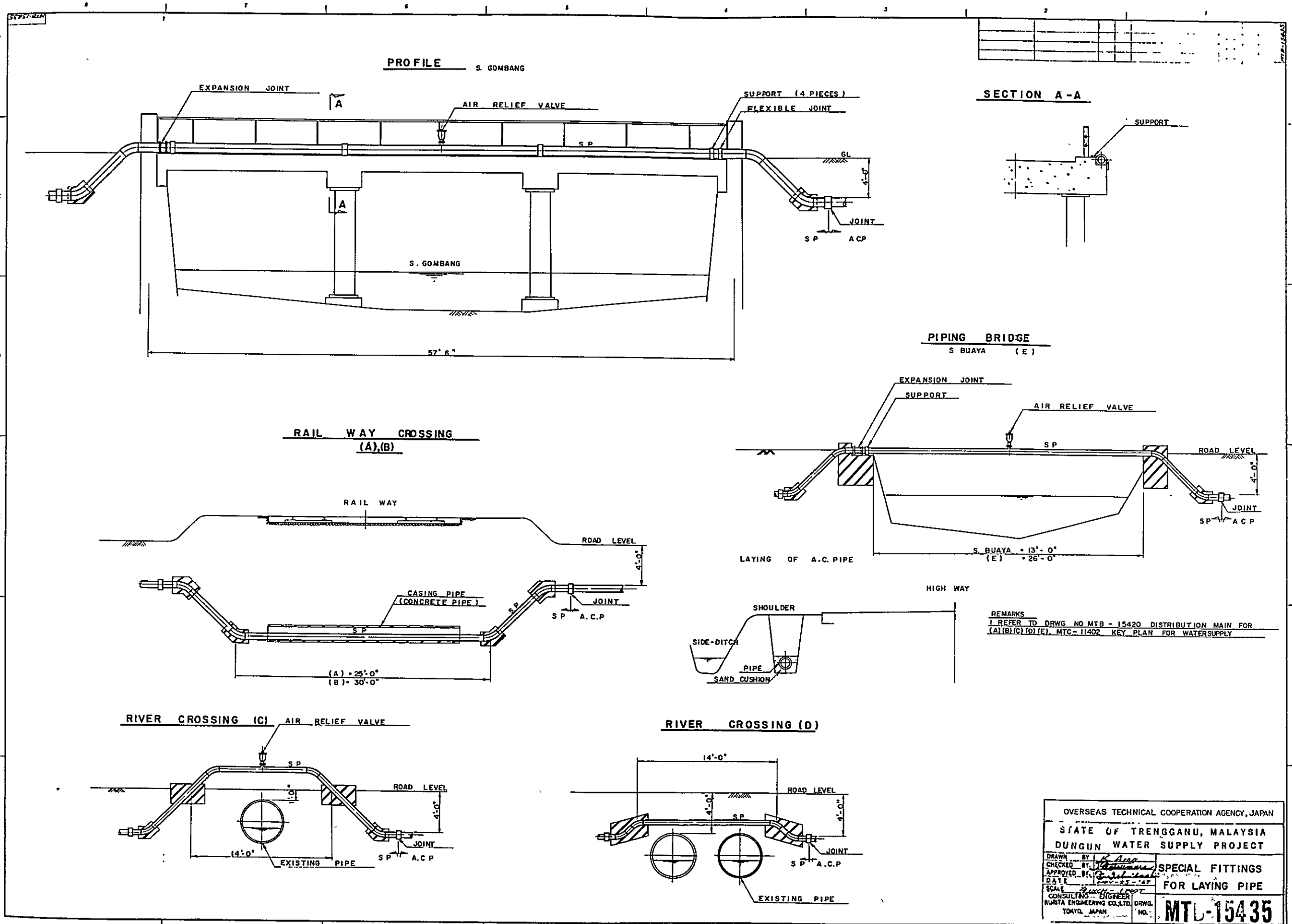
D ₁	L ₁	L ₂	H ₁	H ₂	REMARKS
3"	1'-10"	10"	4'-9"	4'-3"	USE SAND CUSHION
4"	1'-11"	11"	4'-10"	4'-4"	WHERE THE BASE IS
5"	1'-11 1/2"	1'-0"	4'-11"	4'-5"	ROCKY ONLY
6"	1'-11 1/2"	1'-1"	4'-11"	4'-5"	
8"	2'-3 1/2"	1'-3"	5'-2 1/2"	4'-8"	
10"	2'-7"	1'-6"	5'-7"	4'-10"	
12"	2'-9 1/2"	1'-9"	5'-10"	5'-1"	
14"	3'-1"	1'-11"	6'-3 1/2"	5'-3"	

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 DUNGUN WATER SUPPLY PROJECT

DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 DATE: 10/05/57
 SCALE: NET SCALE
 CONSULTING ENGINEER
 KURIYA ENGINEERING CO., LTD., DRWG.
 TOKYO, JAPAN

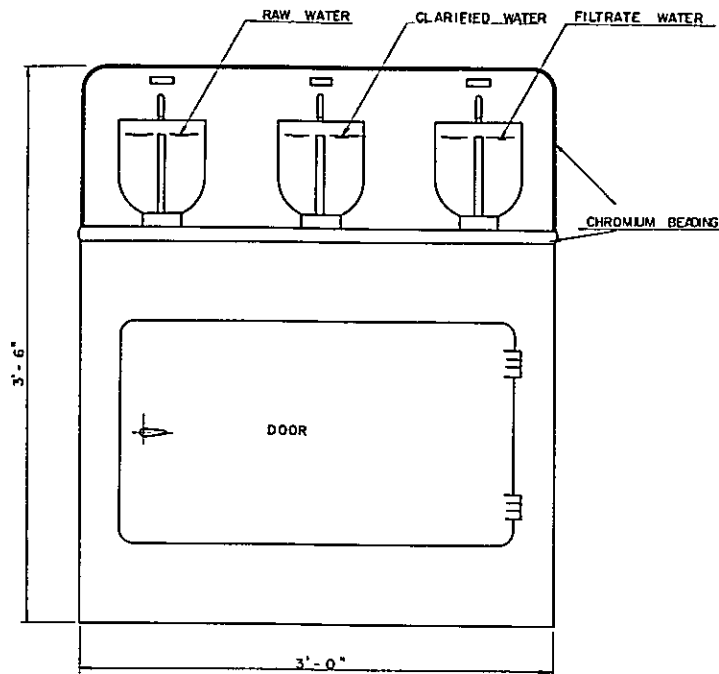
STANDARD DRWG. FOR
 VALVE BOX HYDRANT etc.

NO. **MTB-15434**

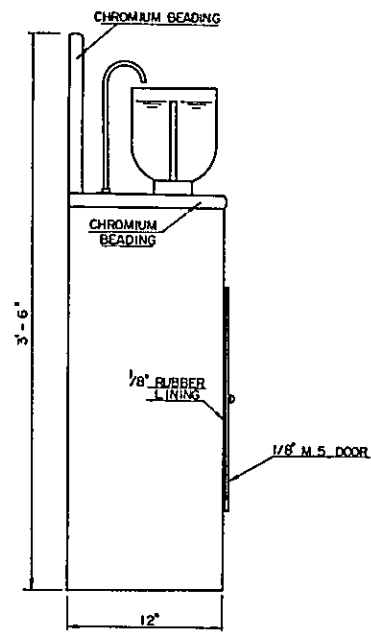


REMARKS
 1 REFER TO DRWG NO MTB - 15420 DISTRIBUTION MAIN FOR
 (A)(B)(C)(D)(E), MTC-11402 KEY PLAN FOR WATERSUPPLY

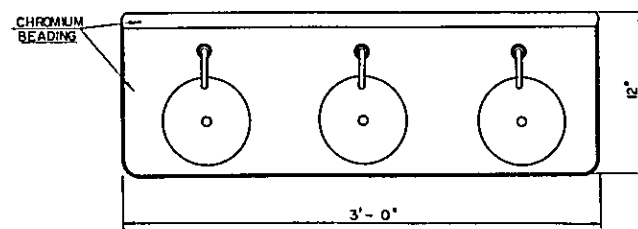
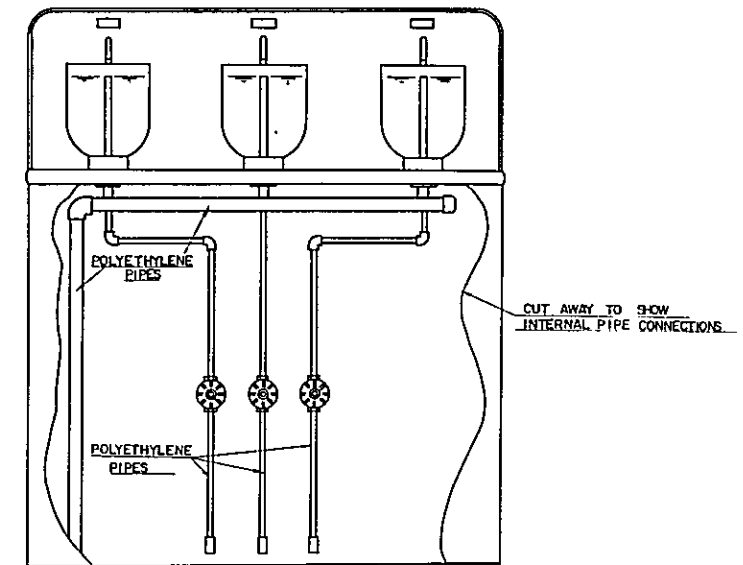
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUIN WATER SUPPLY PROJECT	
DRAWN BY: <i>K. Arai</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: <i>1957-05-27</i> SCALE: <i>1/2" = 1'-0"</i> CONSULTING ENGINEER NURITA ENGINEERING CO., LTD. DRWG. NO.: TOKYO, JAPAN	SPECIAL FITTINGS FOR LAYING PIPE MTL-15435



FRONT VIEW



SIDE VIEW

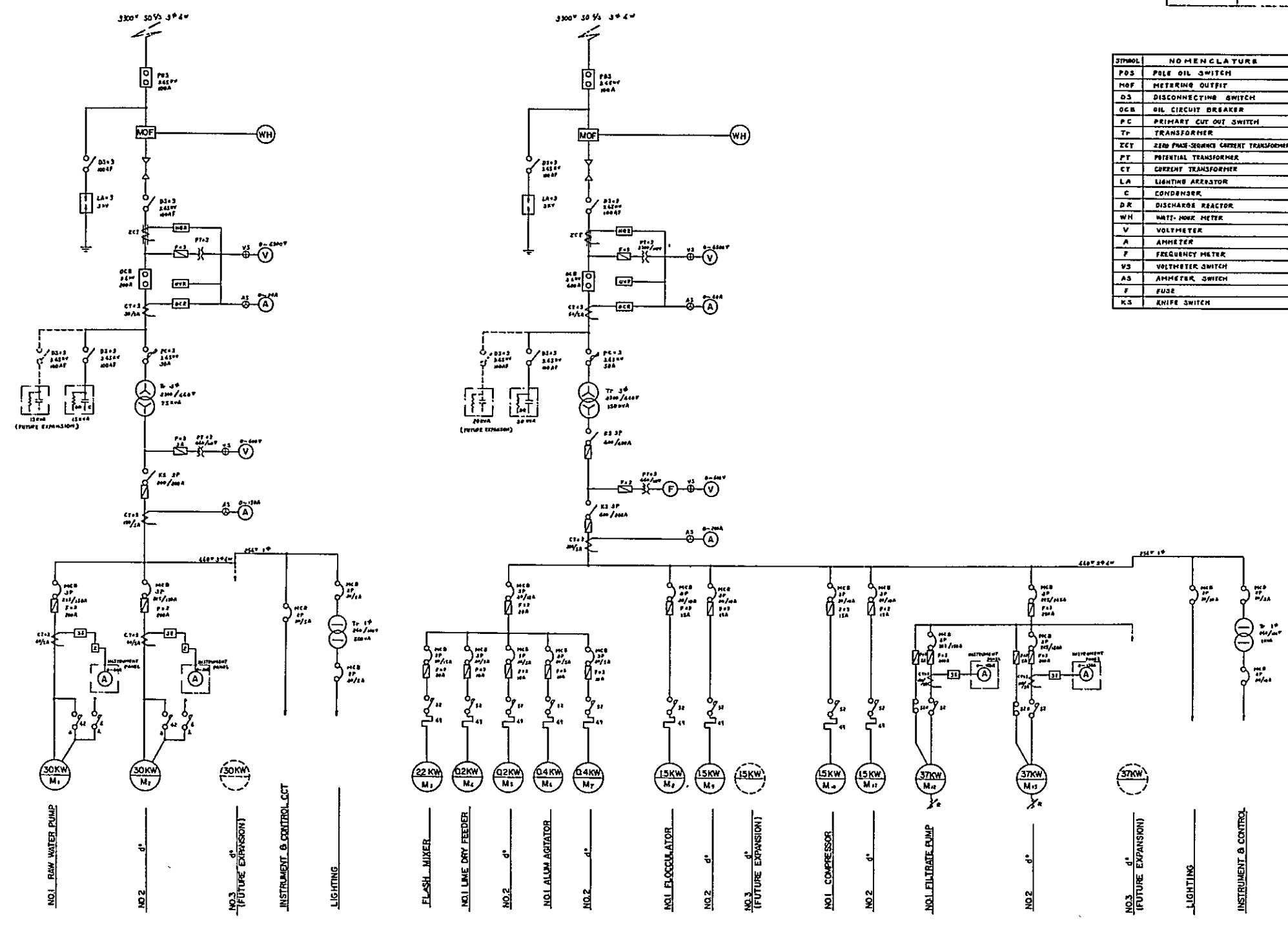


PLAN

NOTES

- 1 MATERIAL OF CONSOLE TO BE 1/2" M.S. SHEET AND STIFFENED WHERE NECESSARY WITH 45° ANGLE
- 2 EXTERIOR TO ANY S.S. COLOUR
- 3 INTERIOR WHITE ENAMEL
- 4 CHROMIUM BEADING
- 5 CONSOLE TO BE PROVIDED WITH FRONT BACK OR SIDE EXCESS TO MEET CUSTOMERS REQUIREMENTS

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
DUNGUN WATER SUPPLY PROJECT	
DRAWN BY: <i>K. Aino</i>	CLARITY BOWL CONSOLE
CHECKED BY: <i>S. S. S. S.</i>	
APPROVED BY: <i>S. S. S. S.</i>	
DATE: <i>20. 05. 67</i>	
SCALE: <i>1/4" = 1'-0"</i>	
CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. (JAWA) TOKYO, JAPAN	



SYMBOL	NOMENCLATURE	SYMBOL	NOMENCLATURE
POS	POLE OIL SWITCH	MCB	MOLDED CASE CIRCUIT BREAKER
MOF	METERING OUTFIT	MGR	HIGH VOLTAGE GROUND RELAY
D.S	DISCONNECTING SWITCH	UVR	UNDER VOLTAGE RELAY
OCB	OIL CIRCUIT BREAKER	OCR	OVER CURRENT RELAY
PC	PRIMARY CUT OUT SWITCH	SM	ELECTRO MAGNETIC SWITCH CONTACTOR
Tr	TRANSFORMER	22V	d ² (AUXILIARY CONTACT)
ZCT	ZERO FUNK-SECONDS CURRENT TRANSFORMER	6	d ³ (TIE A CONNECTION)
PT	POTENTIAL TRANSFORMER	42	d ⁴ (TIE B CONNECTION)
CT	CURRENT TRANSFORMER	49	THERMAL RELAY
LA	LIGHTING ARRESTOR	JE	THREE ELEMENT PROTECTING RELAY
C	CONDENSER	Z	CURRENT CONVERTING BRIDGE
DR	DISCHARGE REACTOR	R	STARTING COMPENSATION RESISTOR
WH	WATT-HOUR METER		
V	VOLTMETER		
A	AMMETER		
F	FREQUENCY METER		
VS	VOLTMETER SWITCH		
AS	AMMETER SWITCH		
F	FUSE		
KS	KNIFE SWITCH		

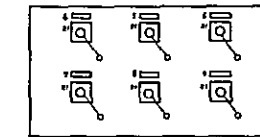
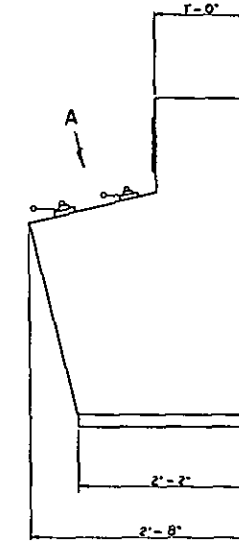
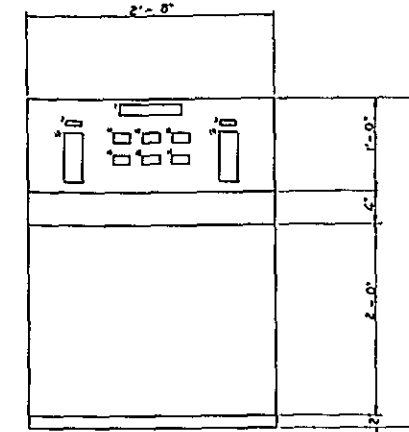
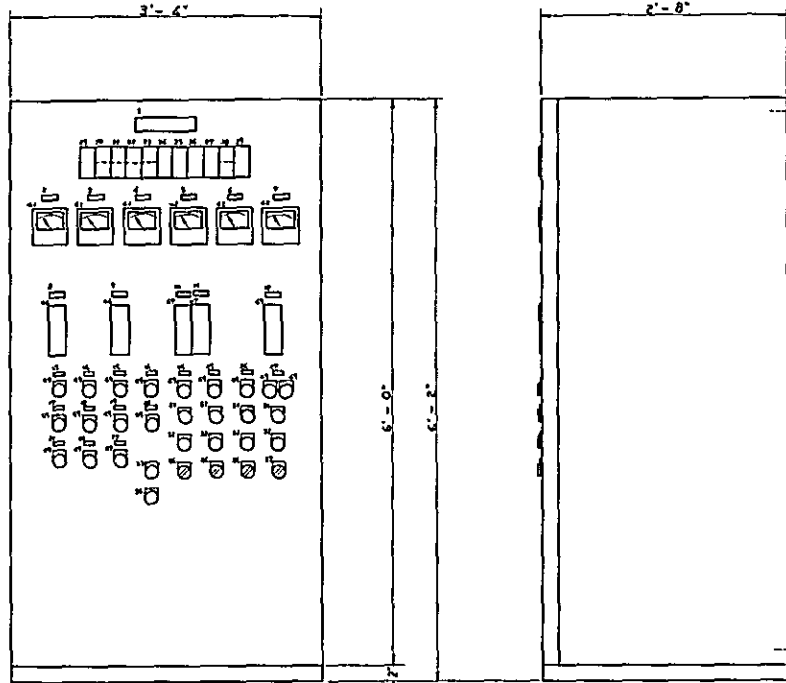
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 DUNGUN WATER SUPPLY PROJECT

DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*
 DATE: *[Date]*
 SCALE: *[Scale]*

CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD.
 TOKYO, JAPAN

DRWG. NO.: **ETB-20017**

ONE LINE
 CONNECTION DIAGRAM



'A' VIEW

- 1) COLOURED ITEMS DENOTE THE PARTS AND INSTRUMENTS TO BE INSTALLED AT THE FUTURE EXPANSION AND THESE PARTS ARE BURNED WITH PIECES OF STEEL PLATES ALL NAME PLATES HAVE BEEN ATTACHED
- 2) THICKNESS OF THE PLATE - 7/16" FOR MOUNTING PLATE 3/16" FOR OTHER PART
- 3) REQUIRED NO. 1587
- 4) COLOUR FINISH - OUTSIDE INSIDE

- 1) THICKNESS OF THE PLATE 5/16" OVERALL
- 2) REQUIRED NOS TOTAL 33 NOS FOR FILTERS NO. 1 TO NO. 3 1 SET FOR EACH
- 3) COLOUR FINISH DESSIDE INSIDE

NO.	ITEM NO.	DESCRIPTION	SPECIFICATION	ENGRAVED LETTERS	REMARKS	NO.	ITEM NO.	DESCRIPTION	SPECIFICATION	ENGRAVED LETTERS	REMARKS
1	1	NAME PLATE		INSTRUMENT PANEL		30	1	ILLUMINATION LAMP	6V-12V 25W	RED	ALARM
2	1			NO. 1 RAW WATER PUMP		31	1			RED	FILTERS (SEE MOUNTING)
3	1			NO. 2	FUTURE EXPANSION	32	1			RED	NO. 2 RAW WATER PUMP
4	1			NO. 3	FUTURE EXPANSION	33	1			RED	FUTURE EXPANSION
5	1			NO. 1 FILTER PUMP		34	1			RED	NO. 1 FILTER MARKER INDICATOR
6	1			NO. 2	FUTURE EXPANSION	35	1			RED	NO. 2
7	1			NO. 3	FUTURE EXPANSION	36	1			RED	NO. 3
8	1			RAW WATER DETECTION		37	1			RED	FUTURE EXPANSION
9	1			FILTERS ONE WATER LEVEL		38	1			RED	FUTURE EXPANSION
10	1			NO. 1 RESERVE WATER LEVEL		39	1			RED	NO. 1
11	1			NO. 2	FUTURE EXPANSION	40	1			RED	NO. 2
12	1			RESERVE TANK PH		41	2	AMMETER	0-100 AMP	BLACK	PH
13	1			NO. 1 LINE OXY REDDER		42	1		0-100 AMP	RED	NO. 1
14	1			NO. 2		43	1			RED	NO. 2
15	1			NO. 1 ALUM. ARIMATH		44	1	EXHAUST INDICATOR	0-100% MAX	BLACK	NO. 1
16	1			NO. 2		45	1	LEVEL INDICATOR	0-100%	BLACK	NO. 2
17	1			FLUSH MIXER		46	1		0-100%	BLACK	NO. 1
18	1			NO. 1 FLOCCULATOR		47	1	PH INDICATOR	0-10 PH	BLACK	NO. 1
19	1			NO. 2		48	1			BLACK	NO. 2
20	1			NO. 1 FILTER PUMP	FUTURE EXPANSION	49	1	INDICATING LAMP	6V-12V 25W	RED	PH
21	1			NO. 2	FUTURE EXPANSION	50	1			RED	OFF
22	1			NO. 3	FUTURE EXPANSION	51	1	PUSH BUTTON SWITCH	BLACK	RED	PH
23	1			NO. 1 RAW WATER PUMP		52	1		RED	OFF	PH
24	1			NO. 2	FUTURE EXPANSION	53	1		GREEN	RED	PH
25	1			NO. 3	FUTURE EXPANSION	54	1		RED	RED	PH
26	1			NO. 1 COMPRESSOR		55	1	SELECT SWITCH	3 POSITIONS	BLACK	STOP-AUTO
27	1			NO. 2		56	1		2 POSITIONS	BLACK	NO. 1 - NO. 2
28	1			ILLUMINATION LAMP	6V-12V 25W	57	1			RED	ALARM

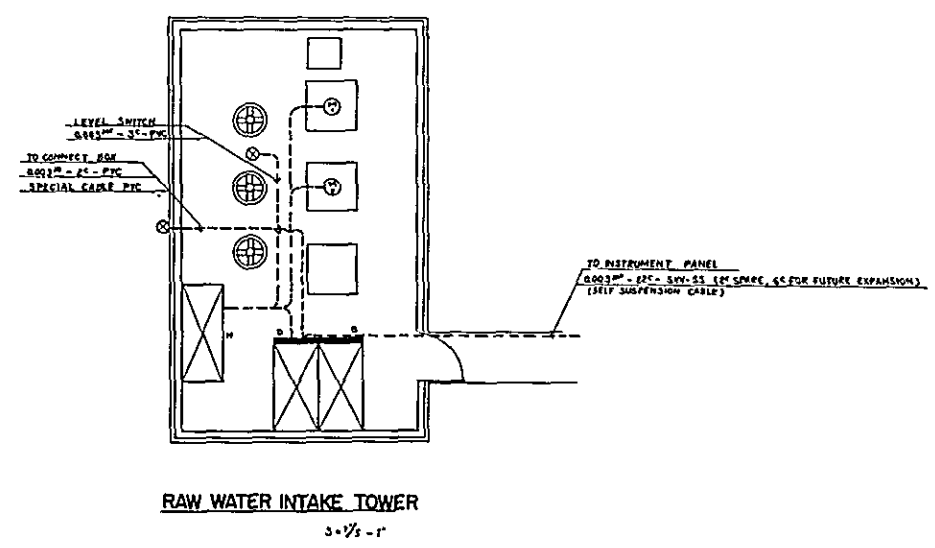
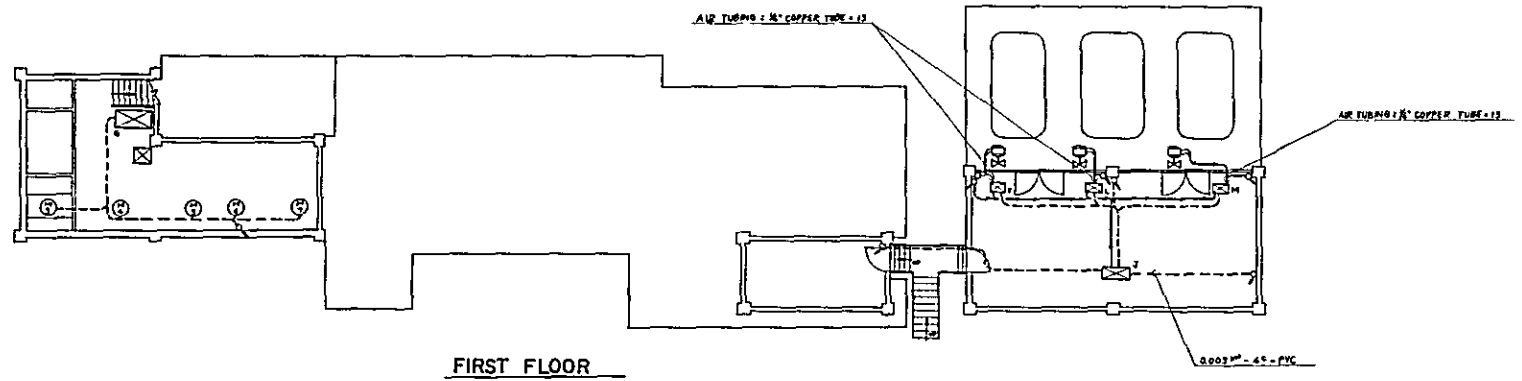
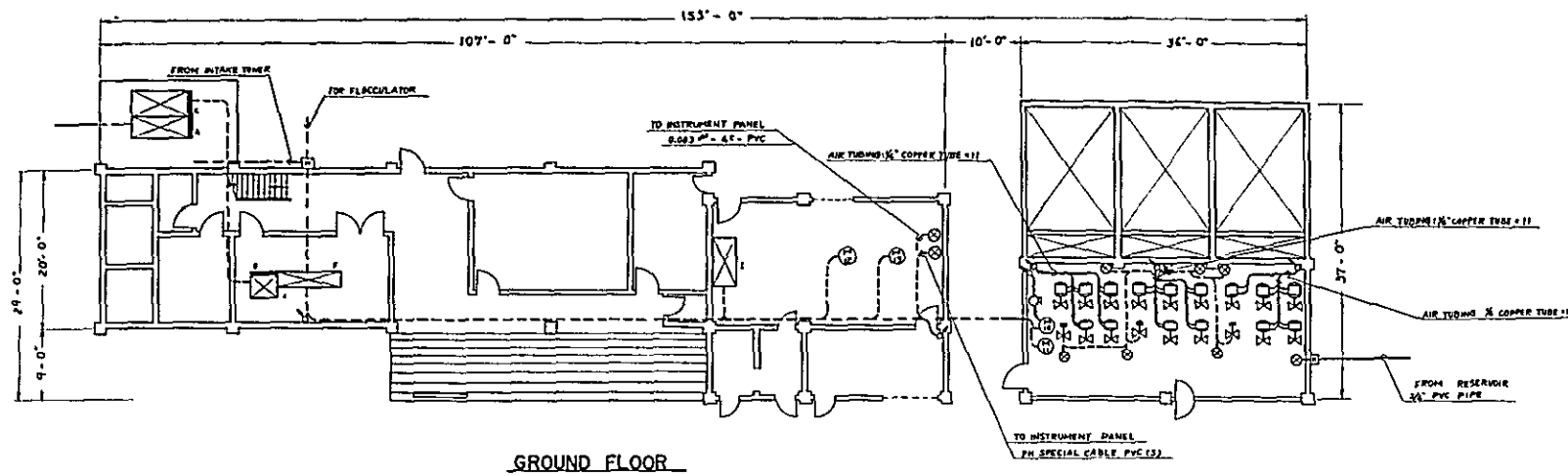
NO.	ITEM NO.	DESCRIPTION	SPECIFICATION	ENGRAVED LETTERS	REMARKS
1	1	NAME PLATE		FILTER CONTROL PANEL	
2	1			HEAD LOSS	
3	1			OUTLET FLOW	
4	1			RAW WATER INLET VALVE	
5	1			FILTERS OUTLET VALVE	
6	1			SURFACE RAW WATER VALVE	
7	1			BACK WASH WATER VALVE	
8	1			RAW WATER OUTLET VALVE	
9	1			BLW VALVE	
10	1	INDICATING LAMP	6V-12V 25W	RAW WATER INLET VALVE	
11	1			FILTERS OUTLET VALVE	
12	1			SURFACE RAW WATER VALVE	
13	1			BACK WASH WATER VALVE	
14	1			RAW WATER OUTLET VALVE	
15	1			BLW VALVE	
17	1	DIFFERENTIAL PRESSURE INDICATOR	0-100 PSI		
18	1	FLOW INDICATOR	0-1000 GPM		
21	1	FLOW METER	0-1000 GPM		

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
STATE OF TRENGGANU, MALAYSIA
DUNGUNG WATER SUPPLY PROJECT

DRAWN BY: *K. Aris*
CHECKED BY: *M. S. ...*
APPROVED BY: *M. S. ...*
DATE: *1971-11-27*

INSTRUMENT PANEL
FILTER CONTROL PANEL

SCALE: 1/8" = 1'
CONSULTING ENGINEER
KURITA ENGINEERING CO., LTD. DRWG. NO. **E10-20018**
TOKYO, JAPAN



SYMBOL	NOMENCLATURE	CAPACITY	CABLE & CONDUIT PIPE	REMARKS
(P)	NO. 1 RAW WATER PUMP	30 GPM	(0.82) 1/2" - 45 - PVC	
(P)	NO. 2	4"	4"	
(P)	FLASH MIXER	2.0 GPM	(0.0043) 1/2" - 45 - PVC	
(P)	NO. 1 LINE DRY FEEDER	4.2 GPM	4"	
(P)	NO. 2	4"	4"	
(P)	NO. 1 ALUM. AGITATOR	4.6 GPM	4"	
(P)	NO. 2	4"	4"	
(P)	NO. 1 COMPRESSOR	1.5 GPM	4"	
(P)	NO. 2	4"	4"	
(P)	NO. 1 FILTRATE PUMP	3.9 GPM	(0.002) 1/2" - 45 - PVC	
(P)	NO. 2	4"	4"	
(A)	HIGH TENSION BOARD	2.5"	(0.042) 1/2" - 45 - PVC	
(A)	TRANSFORMER BOARD	4"	(0.007) 1/2" - 45 - PVC	
(A)	DISTRIBUTION BOARD	4"	(0.0) 1/2" - 45 - PVC	
(A)	LOAD CENTRE	4"	(0.0) 1/2" - 45 - PVC	
(A)	COMBINATION STARTER	4"	(0.0043) 1/2" - 45 - PVC	
(A)	NO. 1	4"	(0.1) 1/2" - 45 - PVC	
(A)	NO. 2	4"	4"	
(A)	INSTRUMENT PANEL	4"	(0.003) 1/2" - 45 - PVC	
(A)	NO. 1 FILTER CONTROL PANEL	4"	(0.003) 1/2" - 45 - PVC	
(A)	NO. 2	4"	4"	
(A)	NO. 3	4"	4"	
(A)	CYLINDER OPERATED VALVE	4"	4"	
(A)	FLOW CONTROL VALVE	4"	4"	
(C)	CABLE LINE	4"	4"	
(P)	AIR PIPING	4"	4"	
(H)	HAND HOLE	4"	4"	
(R)	REDUCING VALVE	4"	4"	
(D)	DETECTOR	4"	4"	

GENERAL NOTES FOR CABLES.

ALL CABLES ARE OF TWIN OR MULTI-CORE COPPER CONDUCTORS AND EXCLUSIVE OF 1/2" CABLES, THEY ARE OF PVC CLASS INSULATION TYPE.

EACH CORE IN A CABLE HAS THE SAME NOMINAL CROSS SECTIONAL AREA.

DESCRIPTION OF CABLES

R/A - RUBBER-INSULATED, CHLOROPRENE SHEATHED.

PVC - P.V.C. INSULATED - AND SHEATHED.

P/P - PAPER INSULATED, LEAD SHEATHED, TAPE ARMORED AND PVC SHEATHED OVERALL.

M/P - P.V.C. INSULATED - AND-BRAIDED WIRE ARMORED AND P.V.C. SHEATHED OVERALL.

A/P - P.V.C. INSULATED - AND-BRAIDED WITH SELF-SUSPENSION WIRE.

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA

DUNGUN WATER SUPPLY PROJECT

DRAWN BY: *K. Adar*

CHECKED BY: *Y. S. S. S. S.*

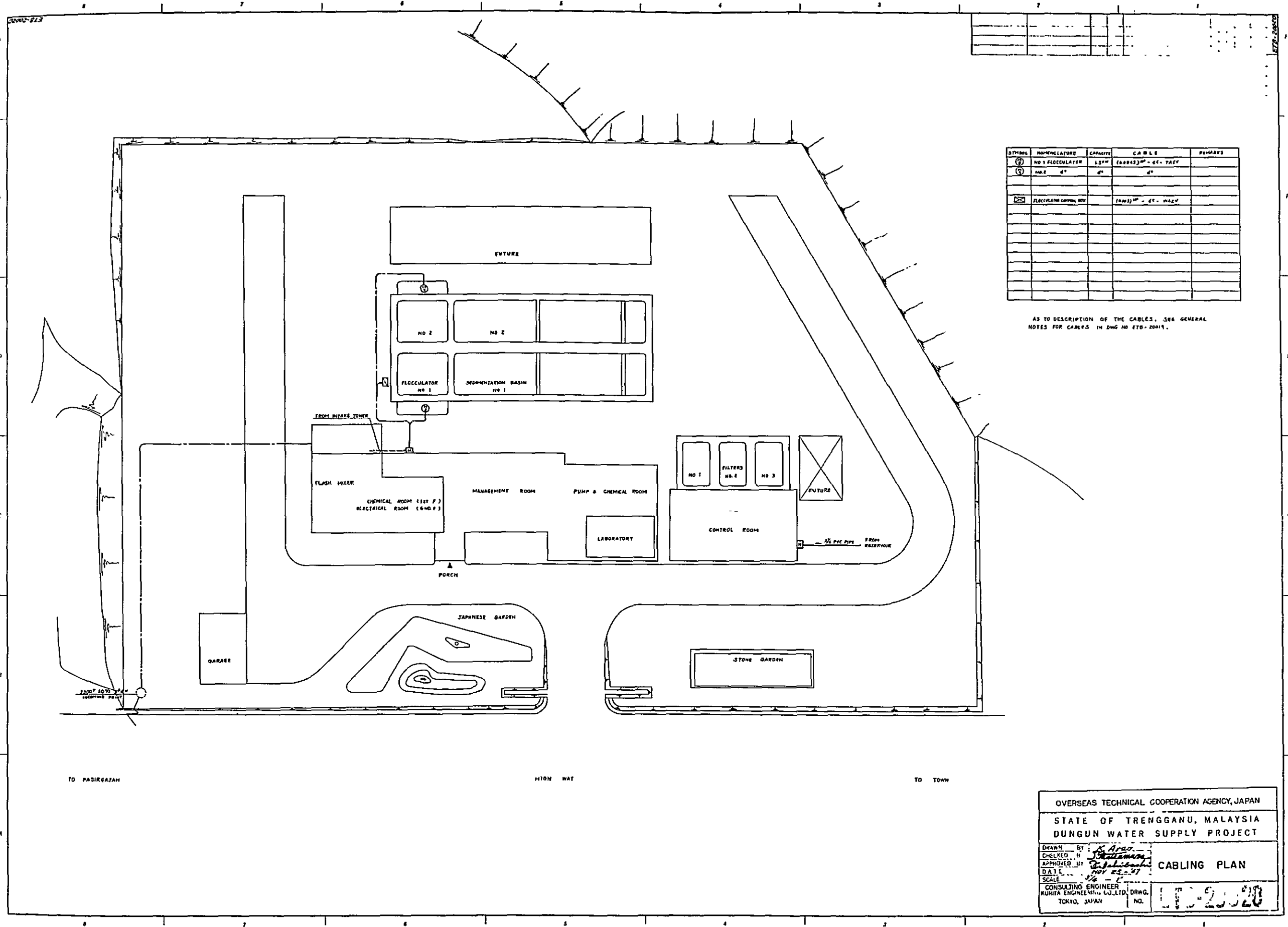
APPROVED BY: *Y. S. S. S. S.*

DATE: *10/25/77*

SCALE: 1" = 10'

CONSULTING ENGINEER
KURITA ENGINEERING CO., LTD. DRWG. NO. **LTD-29319**
TOKYO, JAPAN

CABLING & PIPING PLAN



SYMBOL	NOMENCLATURE	CAPACITY	CABLE	REMARKS
①	NO 1 FLOCCULATOR	1.5 M ³	(6.6x4.5)M - 6.6 - 7.65M	
②	NO 2 " "	" "	" "	
③	NO 3 " "	" "	" "	
④	FLOCCULANT COMMON BOX		(1.8x1.5)M - 6.6 - 7.65M	

AS TO DESCRIPTION OF THE CABLES, SEE GENERAL NOTES FOR CABLES IN DWG NO ETD-20019.

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
STATE OF TRENGGANU, MALAYSIA
DUNGUN WATER SUPPLY PROJECT

DRAWN BY	K. ARAO
CHECKED BY	[Signature]
APPROVED BY	[Signature]
DATE	NOV 25, 87
SCALE	1/4" = 1'

CONSULTING ENGINEER
KURITA ENGINEERING CO., LTD. DRWG. NO. ETD-20020
TOKYO, JAPAN

SOIL PROFILE

LOCATION: DUNGUN
 BOREHOLE NO: B 1
 BORING DEPTH (FT) 66.0
 DRILLING METHOD: HAND AUGER
 GROUND HEIGHT (FT): 16 B36

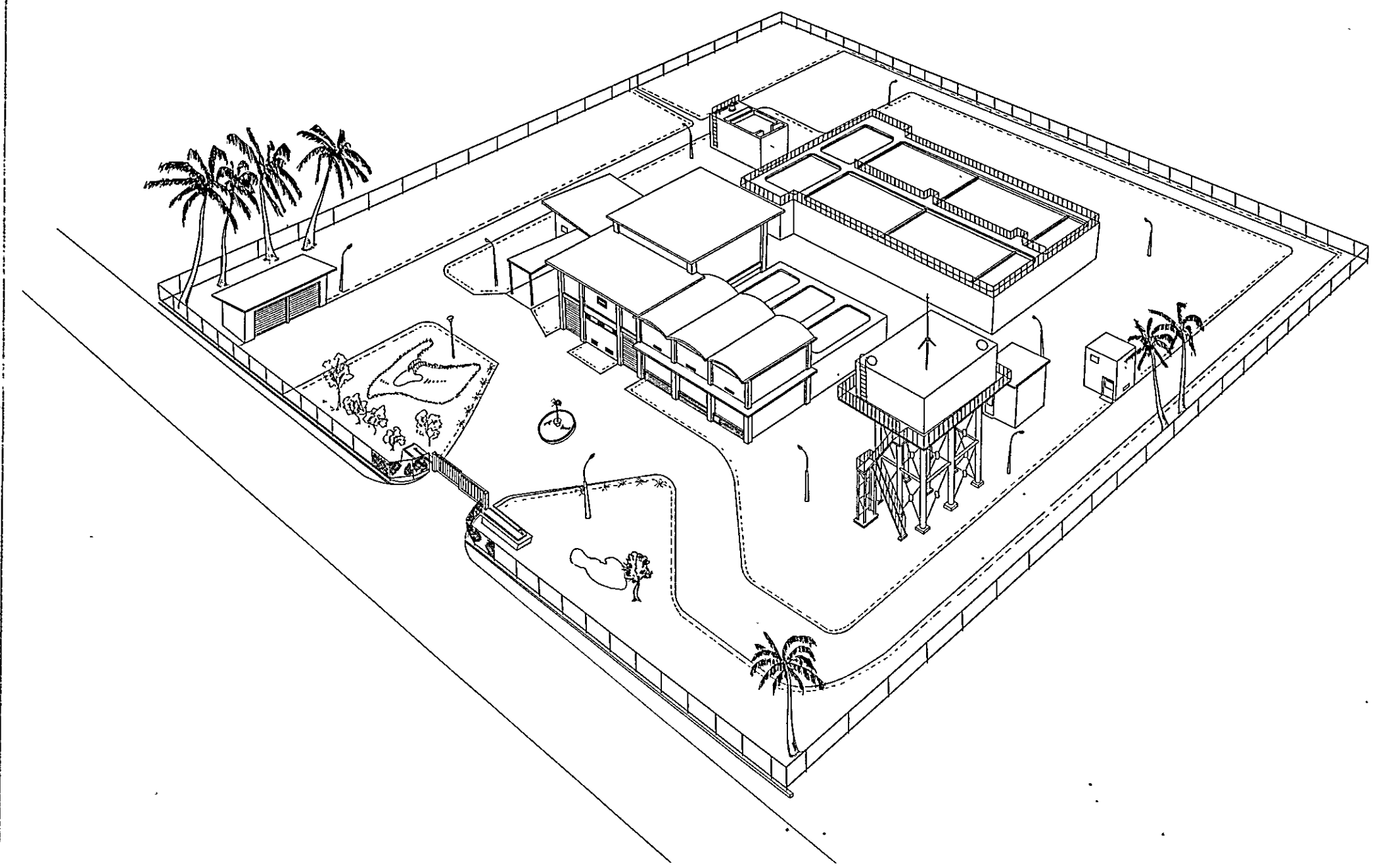
PERFORMED DATE 5 - 8, SEPTEMBER 1967
 CHIEF ENGINEER: YOSHIO FURUYA
 FOREMAN: SIOU LEONG YOKE

DATE	SCALE (FT)	DEPTH (FT)	SOIL			WATER LEVEL (FT)	DESCRIPTION	PRESUMED N-VALUE				
			SYMBOL	CLASSIFICATION	COLOUR			10	20	30	40	50
SEPT				CLAY	YELLOWISH GREY		CONTAIN A LITTLE MICA					
		6.5		CLAY WITH SAND	YELLOWISH GREY		SAND CONTENT ABOUT 10% LOW WATER CONTENT					
		8.5		SILT WITH SAND	GREY		SAND CONTENT ABOUT 20%					
		13.5										
		15.0				15.0						
		22.5		CORSE SAND	BROWNISH GREY		CONTAIN A LITTLE PEBBLE AND SILT					
		23.5		SILT WITH SAND	DARK GREY		SAND CONTENT ABOUT 25%					
		31.0		CLAY WITH SAND	YELLOWISH GREY		SAND CONTENT ABOUT 15% STRONG COHESION MEDIUM WATER CONTENT,					
		36.0		CLAY WITH SAND	REDDISH GREY		SAND CONTENT ABOUT 20% VERY STIFF AND STRONG COHESION					
		49.0		CLAY	GREY		WEATHERED METAMORPHIC ROCK CONTAIN A LITTLE SAND MEDIUM WATER CONTENT					
6		49.0										
		57.0		SILTY CLAY	GREY		VERY STIFF WEATHERED METAMORPHIC ROCK. CONTAIN A LITTLE SAND AND GRAVEL. LOW WATER CONTENT					
7		57.0										
		64.0		SILTY CLAY	DARK GREY		CONTAIN ROTTED WOOD AND ORGANICS,					
8		64.0										
		66.0		GRAVEL	GREY		GRAVEL DIAMETER 2" CONTAIN A LITTLE CLAY					
10		66.0										

KEMAMAN WATER WORKS - DRAWING INDEX

1	MTB - 15400	BIRD VIEW	20.	MTB - 15411	GENERAL ARRANGEMENT FOR FILTER
2.	MTC - 11396	VICINITY PLAN	21.	MTB - 15412	GENERAL ARRANGEMENT FOR FILTRATE PUMP
3.	MTC - 11397	KEY PLAN FOR WATER SUPPLY	22.	MTC - 11399	CHEMICAL DOSING EQUIPMENT OF LIME AND ALUM
4.	MTB - 15401	DISTRIBUTION MAIN	23.	MTC - 11400	CHEMICAL DOSING EQUIPMENT OF CHLORINE
5	MTB - 15436	PROFILE OF RISING AND SUPPLY MAIN (NO.1)	24.	MTB - 15413	HEAD TANK
6.	MTB - 15437	PROFILE OF SUPPLY MAIN (NO.2)	25.	MTB - 15414	SURGE TANK
7.	MTB - 15438	" " (NO.3)	26.	MTB - 15415	PLOT FOR RESERVOIR
8.	MTB - 15439	" " (NO.4)	27.	MTB - 15416	RESERVOIR
9	MTB - 15440	PROFILE OF DISTRIBUTION MAIN	28	MTB - 15417	STANDARD DRAWINGS FOR VALVE BOX, HYDRANT etc.
10	MTB - 15402	FLOW DIAGRAM	29.	MTC - 11406	SPECIAL FITTINGS FOR LAYING PIPE
11.	MTB - 15403	WATER LEVEL DIAGRAM	30	MTB - 15445	CLARITY BOWL CONSOLE
12	MTB - 15404	PLAN AND PLOT FOR INTAKE SITE	31	ETB - 20012	ONE LINE CONNECTION DIAGRAM
13	MTB - 15405	PLAN FOR INTAKE STATION	3 2.	ETB - 20013	INSTRUMENT PANEL AND FILTER CONTROL PANEL
14	MTB - 15406	PLAN FOR WATER TREATMENT PLANT	3 3.	ETB - 20014	CABLING AND PIPING PLAN
15.	MTB - 15407	FLOOR AND ELEVATION FOR CONTROL BUILDING	3 4	ETB - 20015	CABLING PLAN
16.	MTB - 15408	SECTION FOR CONTROL BUILDING	3 5.	ETB - 20016	CABLING PLAN
17.	MTB - 15409	GENERAL ARRANGEMENT FOR WATER TREATMENT PLANT			
18.	MTC - 11398	FLASH MIXER			
19	MTB - 15410	GENERAL ARRANGEMENT FOR CLARIFIER			

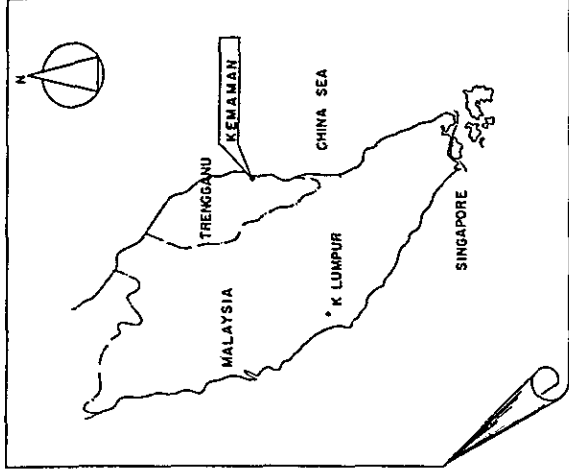
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OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 JAIL OF TRINGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

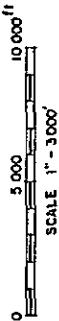
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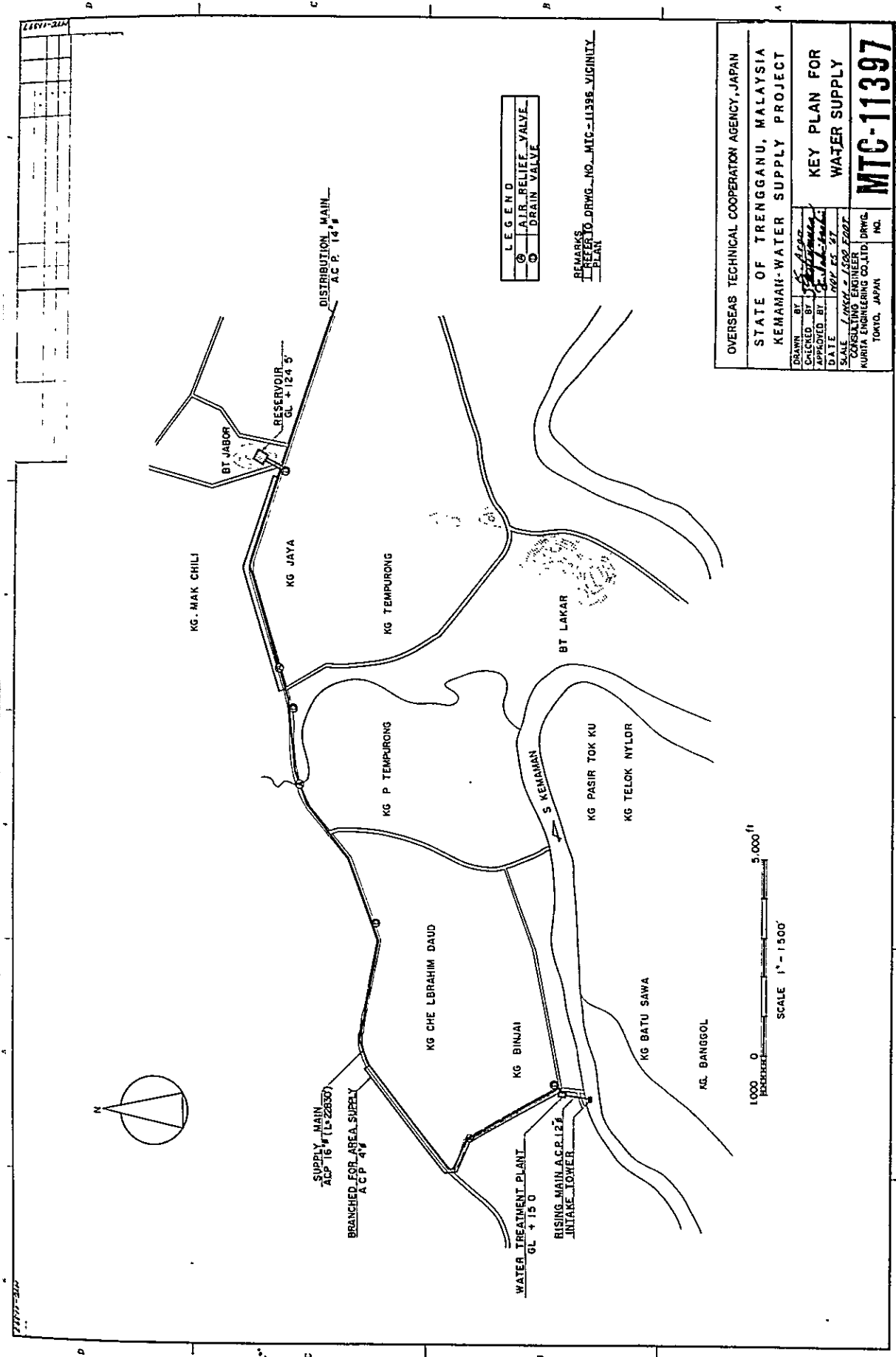
NOT SCALE
 CONSULTING ENGINEER
 MTC 15400



REMARKS
 ----- WATER SUPPLY AREA

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN			
STATE OF TRENGGANU, MALAYSIA			
KEMAMAN WATER SUPPLY PROJECT			
DRAWN BY	CHIEF ENGINEER	VICINITY PLAN	
CHECKED BY	CONSULTING ENGINEER	MTC-11396	
APPROVED BY	A. SHIBATA		
DATE	MAR 25 77		
SCALE	1/2500 = 1/3000		
CONSULTING ENGINEER			
FURUTA ENGINEERING CONSULTANTS			
TOKYO, JAPAN	NO.		





LEGEND

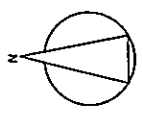
⊙	A.I.R. RELIEF VALVE
⊖	DRAIN VALVE

REMARKS
 REFER TO DRWG. NO. MIC-11396 VICINITY PLAN

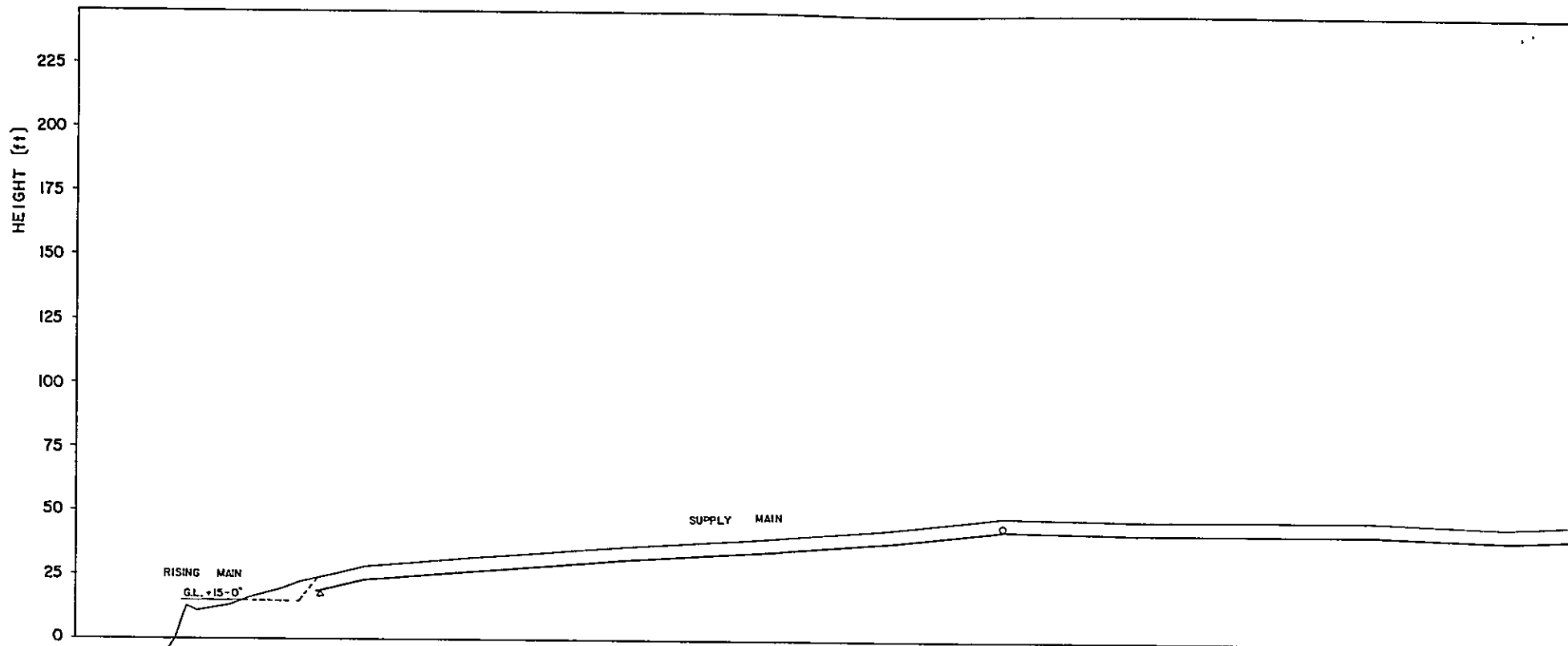
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
KEMAMAN-WATER SUPPLY PROJECT	
DRAWN BY	<i>S. A. Aja</i>
CHECKED BY	<i>S. A. Aja</i>
APPROVED BY	<i>S. A. Aja</i>
DATE	17 FEB. 67
SCALE	1" = 1500'
PROJECT NO.	11397
DESIGNED BY	KURITA ENGINEERING CO. LTD.
ENGINEER	KURITA ENGINEERING CO. LTD.
NO.	TOKYO, JAPAN

KEY PLAN FOR WATER SUPPLY

MTC-11397



SCALE
 HORZ. 1" = 250'
 VERT. 1" = 25'



EXIST. GROUND HEIGHT (ft)	FORMATION HEIGHT (ft)	DISTANCE (ft)	TOTAL DISTANCE (ft)	SURVEY POINT	MATERIAL & DIA OF PIPE	REMARKS
16.48		0		NO 1	12" P. S.P.	INTAKE POINT
17.57		10		NO 2		
18.10		20		NO 3		
23.86		40		NO 4		
24.12		50		NO 5	12" P. S.P.	
27.43		100		NO 6	12" P. S.P.	WATER TREATMENT PLANT
27.43		150		NO 7	12" P. S.P.	
27.43		200		NO 8	12" P. S.P.	
27.43		250		NO 9	12" P. S.P.	
27.43		300		NO 10	12" P. S.P.	DRAIN VALVE
27.43		350		NO 11	12" P. S.P.	
27.43		400		NO 12	12" P. S.P.	
28.76		500			16" P. A.C.P.	
31.49		1000			16" P. A.C.P.	
32.76		1500			16" P. A.C.P.	
36.49		2000			16" P. A.C.P.	
38.47		2500			16" P. A.C.P.	
43.50		3000			16" P. A.C.P.	
48.42		3500			16" P. A.C.P.	AIR RELIEF VALVE
47.77		4000			16" P. A.C.P.	
47.30		4500			16" P. A.C.P.	
47.50		5000			16" P. A.C.P.	
45.89		5500			16" P. A.C.P.	

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

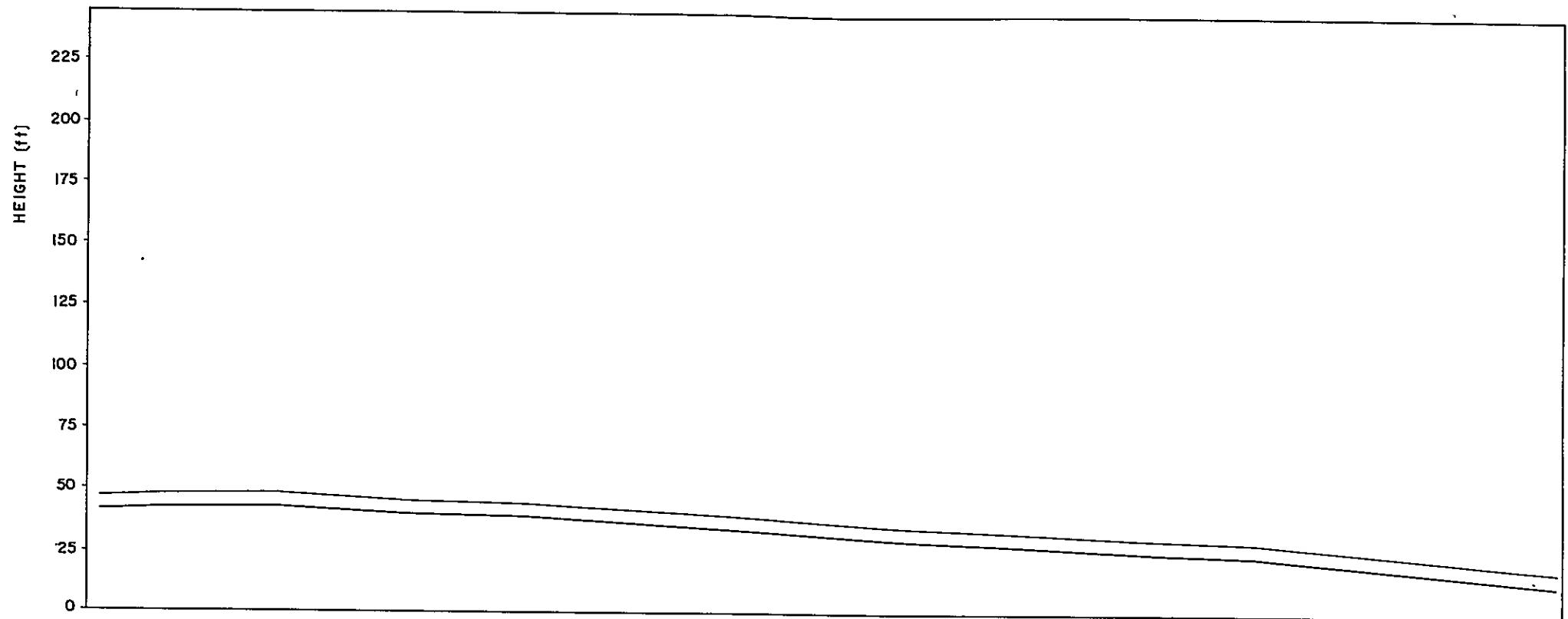
DRAWN BY: *K. Arai*
 CHECKED BY: *S. Saito*
 APPROVED BY: *S. Saito*
 DATE: *NOV 25 - 87*

SCALE: VERT. 1" = 25', HORZ. 1" = 250'

CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRWG. NO
 TOKYO, JAPAN

PROFILE OF RISING AND SUPPLY MAIN (NO.1)
MTB-15436

SCALE
 HORZ. 1" = 250'
 VERT. 1" = 25'



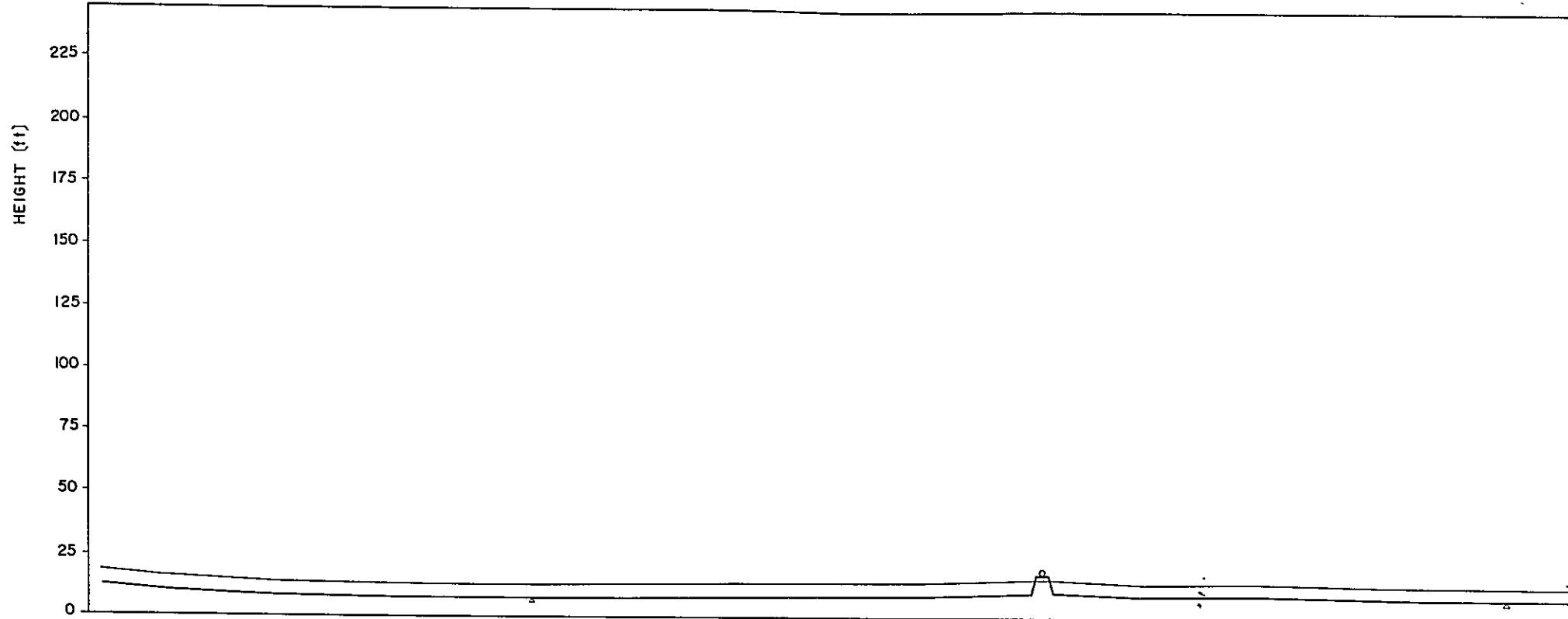
EXIST, GROUND HEIGHT (ft)	43.99	42.22	42.44	40.15	37.53	38.16	37.65	33.02	31.74	30.74	28.77	26.40	25.62
FORMATION HEIGHT (ft)	43.99	42.22	41.46	40.45	37.53	36.16	37.65	33.02	31.74	30.74	28.77	26.40	25.62
DISTANCE (ft)	500	500	500	500	500	500	500	500	500	500	500	500	500
TOTAL DISTANCE (ft)	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500
SURVEY POINT													
MATERIAL & DIA. OF PIPE	16" φ ACP												
REMARKS	① MILE STONE CHUKAI 4 ②												

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

PROFILE OF
 SUPPLY MAIN (NO.2)

DRAWN BY: *S. Aiso*
 CHECKED BY: *S. Aiso*
 APPROVED BY: *S. Aiso*
 DATE: *1974.05.27*
 SCALE: *VERT. 1" = 25' HORZ. 1" = 250'*
 CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRWG. NO. **MTD-15437**
 TOKYO, JAPAN

SCALE
 HORZ. 1" = 250'
 VERT 1" = 25'



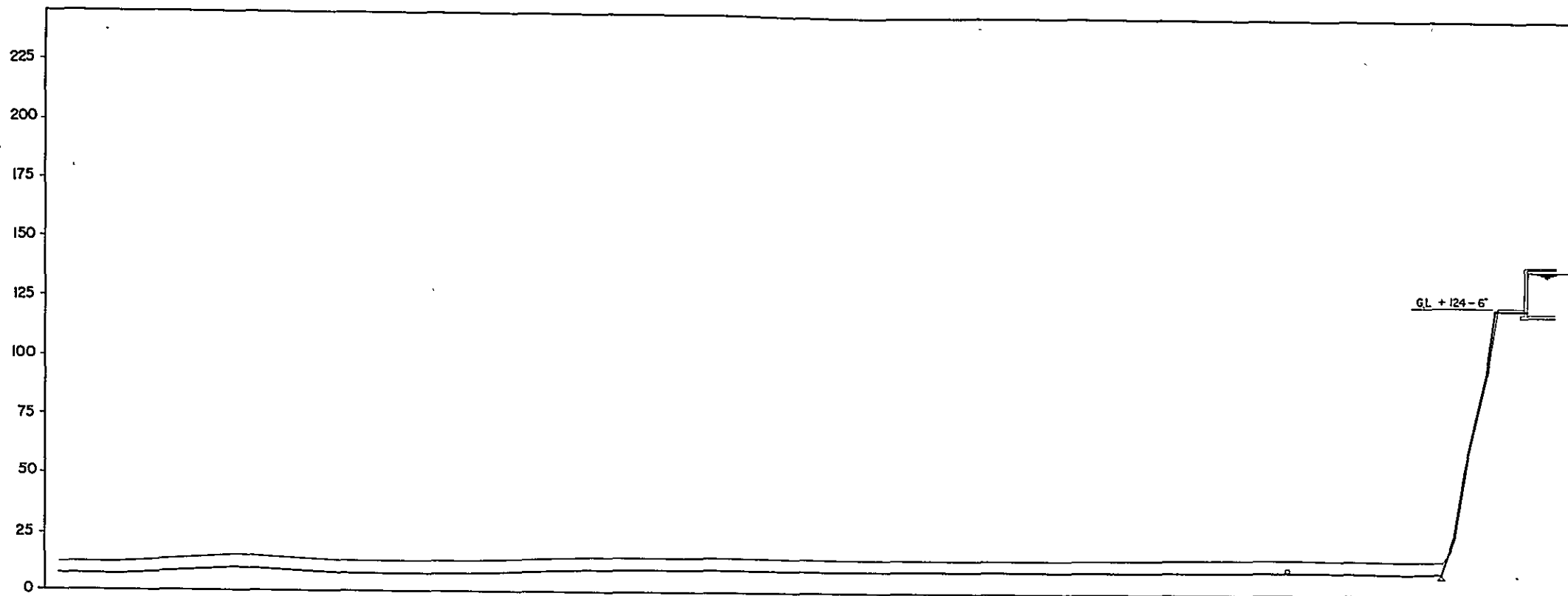
EXIST. GROUND HEIGHT (ft)	FORMATION HEIGHT (ft)	DISTANCE (ft)	TOTAL DISTANCE (ft)	SURVEY POINT	MATERIAL & DIA OF PIPE	REMARKS
11.62	11.62	300	300			①
13.10	9.10	300	600			
14.77	8.77	300	900			
12.41	8.61	300	1200		16" ACP	DRAIN VALVE
12.94	8.94	300	1500			
13.36	9.36	300	1800			
13.20	9.50	500	2300			
13.30	9.50	76.57	2376.57			MILE STONE CHUKAI 3
10.87	10.87	623.61	11000		16" S.P.	BRIDGE AIR RELIEF VALVE
10.90	10.90	10.90	11010.90			
10.87	10.87	10.87	11021.77			
12.83	9.33	667.11	11688.88			
10.56	9.56	300	12000		16" ACP	
12.12	8.12	300	12300			
10.87	8.87	300	12600			DRAIN VALVE ②

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

PROFILE OF SUPPLY MAIN (NO.3)

DRAWN BY: *K. Arita*
 CHECKED BY: *J. Saito*
 APPROVED BY: *J. Saito*
 DATE: *Nov 25, 87*
 SCALE: *VERT 1" = 25' HORZ 1" = 250'*
 CONSULTING ENGINEER:
 KURITA ENGINEERING CO., LTD. DRWG. NO. **MTC-15438**
 TOKYO, JAPAN

HEIGHT (ft)



SCALE
 HORZ. 1" = 250'
 VERT. 1" = 25'

EXIST. GROUND HEIGHT (ft)	FORMATION HEIGHT (ft)	DISTANCE (ft)	TOTAL DISTANCE (ft)	SURVEY POINT	MATERIAL & DIA. OF PIPE	REMARKS
10.00	8.00	500	500		16" ACP	
10.00	8.00	500	1000		16" ACP	AIR RELIEF VALVE
10.00	8.00	500	1500		16" ACP	MILE STONE CHUKAI 2
10.00	8.00	500	2000		16" ACP	
10.00	8.00	500	2500		16" ACP	
10.00	8.00	500	3000		16" ACP	
10.00	8.00	500	3500		16" ACP	
10.00	8.00	500	4000		16" ACP	
10.00	8.00	500	4500		16" ACP	
10.00	8.00	500	5000		16" ACP	
10.00	8.00	500	5500		16" ACP	
10.00	8.00	500	6000		16" ACP	
10.00	8.00	500	6500		16" ACP	
10.00	8.00	500	7000		16" ACP	
10.00	8.00	500	7500		16" ACP	
10.00	8.00	500	8000		16" ACP	
10.00	8.00	500	8500		16" ACP	
10.00	8.00	500	9000		16" ACP	
10.00	8.00	500	9500		16" ACP	
10.00	8.00	500	10000		16" ACP	
10.00	8.00	500	10500		16" ACP	
10.00	8.00	500	11000		16" ACP	
10.00	8.00	500	11500		16" ACP	
10.00	8.00	500	12000		16" ACP	
10.00	8.00	500	12500		16" ACP	
10.00	8.00	500	13000		16" ACP	
10.00	8.00	500	13500		16" ACP	
10.00	8.00	500	14000		16" ACP	
10.00	8.00	500	14500		16" ACP	
10.00	8.00	500	15000		16" ACP	
10.00	8.00	500	15500		16" ACP	
10.00	8.00	500	16000		16" ACP	
10.00	8.00	500	16500		16" ACP	
10.00	8.00	500	17000		16" ACP	
10.00	8.00	500	17500		16" ACP	
10.00	8.00	500	18000		16" ACP	
10.00	8.00	500	18500		16" ACP	
10.00	8.00	500	19000		16" ACP	
10.00	8.00	500	19500		16" ACP	
10.00	8.00	500	20000		16" ACP	
10.00	8.00	500	20500		16" ACP	
10.00	8.00	500	21000		16" ACP	
10.00	8.00	500	21500		16" ACP	
10.00	8.00	500	22000		16" ACP	
10.00	8.00	500	22500		16" ACP	
10.00	8.00	500	23000		16" ACP	
10.00	8.00	500	23500		16" ACP	
10.00	8.00	500	24000		16" ACP	
10.00	8.00	500	24500		16" ACP	
10.00	8.00	500	25000		16" ACP	
10.00	8.00	500	25500		16" ACP	
10.00	8.00	500	26000		16" ACP	
10.00	8.00	500	26500		16" ACP	
10.00	8.00	500	27000		16" ACP	
10.00	8.00	500	27500		16" ACP	
10.00	8.00	500	28000		16" ACP	
10.00	8.00	500	28500		16" ACP	
10.00	8.00	500	29000		16" ACP	
10.00	8.00	500	29500		16" ACP	
10.00	8.00	500	30000		16" ACP	
10.00	8.00	500	30500		16" ACP	
10.00	8.00	500	31000		16" ACP	
10.00	8.00	500	31500		16" ACP	
10.00	8.00	500	32000		16" ACP	
10.00	8.00	500	32500		16" ACP	
10.00	8.00	500	33000		16" ACP	
10.00	8.00	500	33500		16" ACP	
10.00	8.00	500	34000		16" ACP	
10.00	8.00	500	34500		16" ACP	
10.00	8.00	500	35000		16" ACP	
10.00	8.00	500	35500		16" ACP	
10.00	8.00	500	36000		16" ACP	
10.00	8.00	500	36500		16" ACP	
10.00	8.00	500	37000		16" ACP	
10.00	8.00	500	37500		16" ACP	
10.00	8.00	500	38000		16" ACP	
10.00	8.00	500	38500		16" ACP	
10.00	8.00	500	39000		16" ACP	
10.00	8.00	500	39500		16" ACP	
10.00	8.00	500	40000		16" ACP	
10.00	8.00	500	40500		16" ACP	
10.00	8.00	500	41000		16" ACP	
10.00	8.00	500	41500		16" ACP	
10.00	8.00	500	42000		16" ACP	
10.00	8.00	500	42500		16" ACP	
10.00	8.00	500	43000		16" ACP	
10.00	8.00	500	43500		16" ACP	
10.00	8.00	500	44000		16" ACP	
10.00	8.00	500	44500		16" ACP	
10.00	8.00	500	45000		16" ACP	
10.00	8.00	500	45500		16" ACP	
10.00	8.00	500	46000		16" ACP	
10.00	8.00	500	46500		16" ACP	
10.00	8.00	500	47000		16" ACP	
10.00	8.00	500	47500		16" ACP	
10.00	8.00	500	48000		16" ACP	
10.00	8.00	500	48500		16" ACP	
10.00	8.00	500	49000		16" ACP	
10.00	8.00	500	49500		16" ACP	
10.00	8.00	500	50000		16" ACP	

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

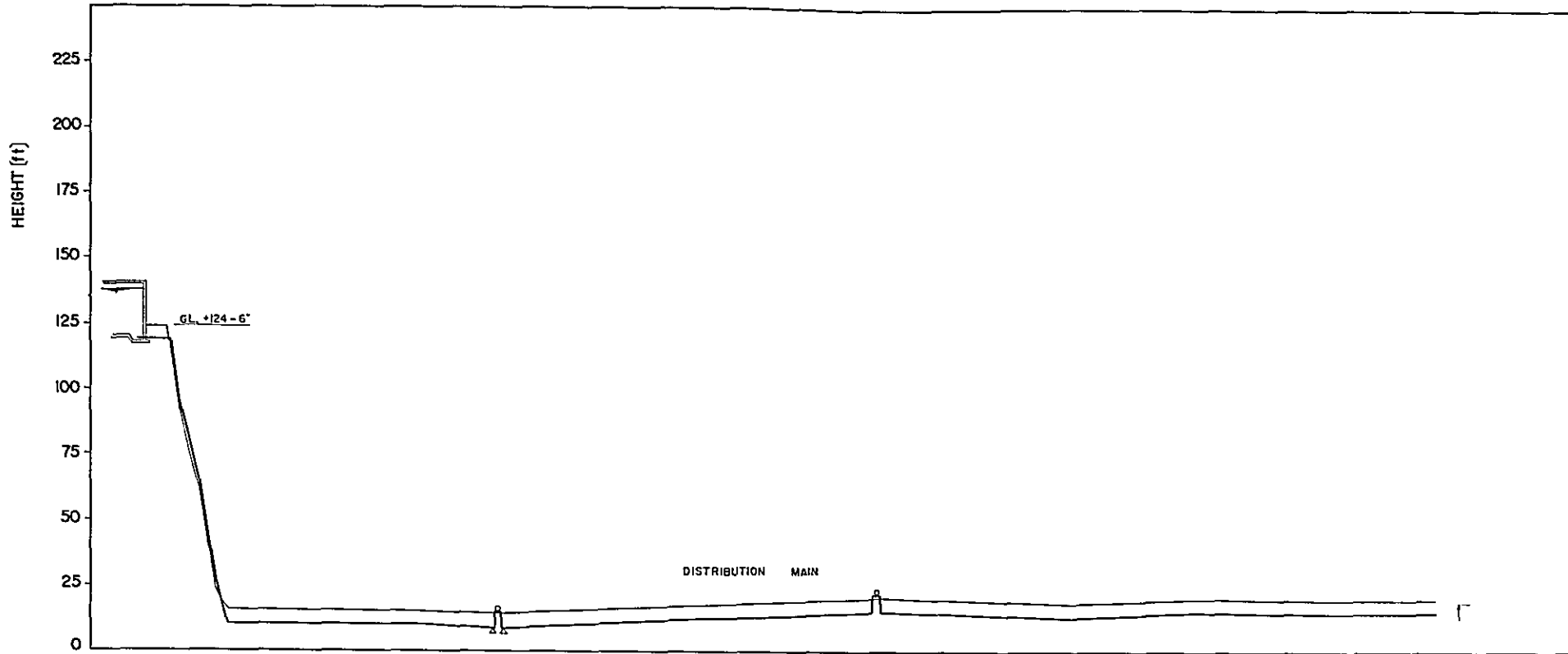
PROFILE OF
 SUPPLY MAIN (NO.4)

DRAWN BY: *K. Arai*
 CHECKED BY: *K. Arai*
 APPROVED BY: *S. S. S. S.*
 DATE: *MAY 22 '87*
 SCALE: *VERT. 1" = 25'*
 CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRWG.
 TOKYO, JAPAN

NO. **MTB-15439**

MTB-1544U

MTB-1544U



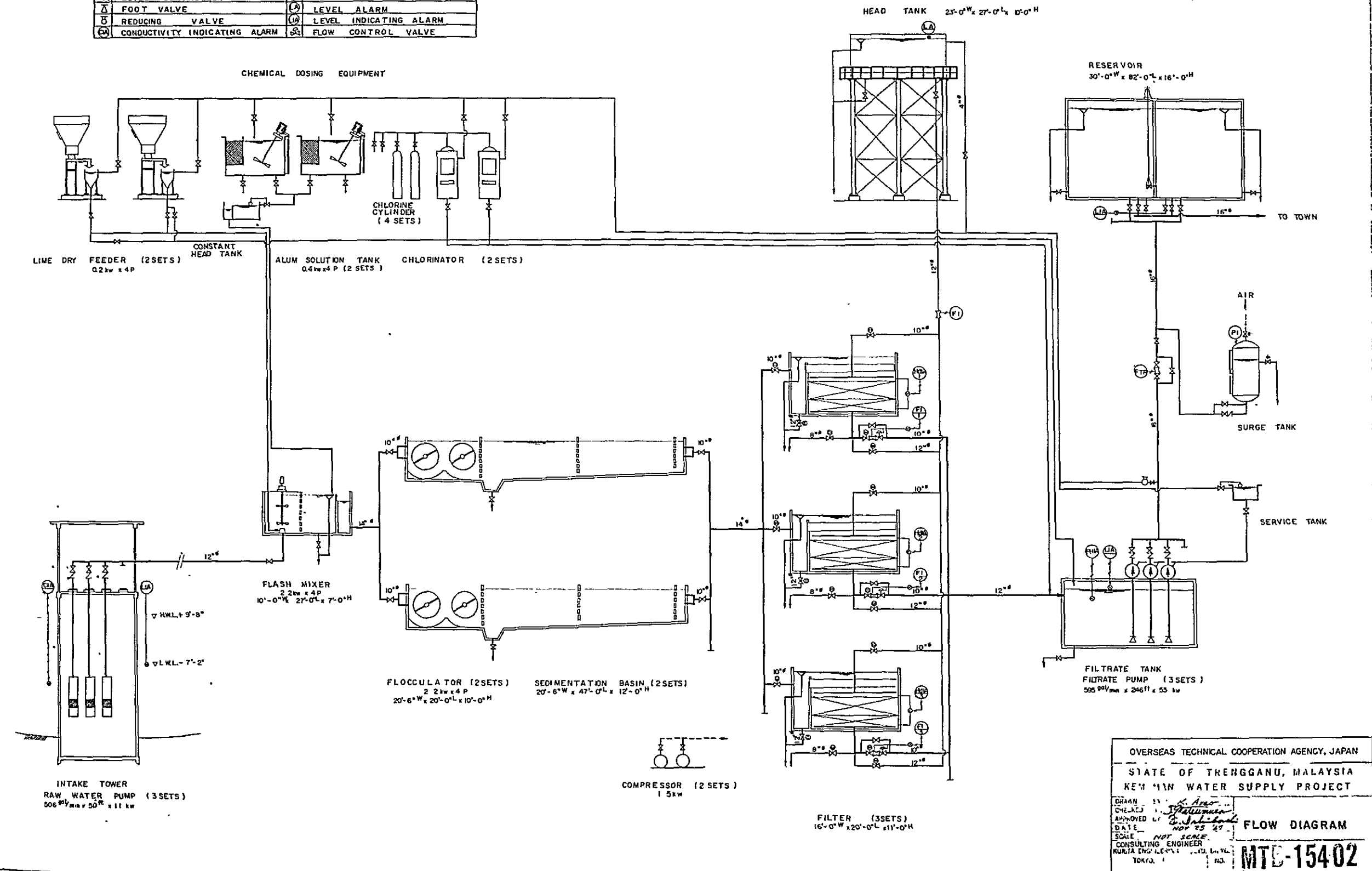
SCALE
 HORZ. 1" = 250'
 VERT. 1" = 25'

EXIST. GROUND HEIGHT	(ft)	FORMATION HEIGHT	(ft)	DISTANCE	(ft)	TOTAL DISTANCE	(ft)	SURVEY POINT	MATERIAL & DIA. OF PIPE	REMARKS
119.20	119.20	0.00	0.00	0	0				18" CIP	RESERVOIR
124.60	124.60	0.00	0.00	100	100				18" SP	
124.60	124.60	0.00	0.00	200	200				18" ACP	BRIDGE DRAIN VALVE AIR RELIEF VALVE
124.60	124.60	0.00	0.00	300	300				18" ACP	MILE STONE CHUKAI
124.60	124.60	0.00	0.00	400	400				18" SP	
124.60	124.60	0.00	0.00	500	500				18" ACP	BRIDGE AIR RELIEF VALVE
124.60	124.60	0.00	0.00	600	600				18" ACP	
124.60	124.60	0.00	0.00	700	700				18" ACP	
124.60	124.60	0.00	0.00	800	800				18" ACP	
124.60	124.60	0.00	0.00	900	900				18" ACP	
124.60	124.60	0.00	0.00	1000	1000				18" ACP	TO TOWN B.M. OF SURVEY DEPARTMENT

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: <i>[Date]</i> SCALE: VERT. 1" = 25' HORZ. 1" = 250' CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. DRWG. TOKYO, JAPAN	PROFILE OF DISTRIBUTION MAIN NO. MTB-1544U

LEGEND

▽	SLUICE VALVE	—	ELECTRIC SIGNAL LINE
⊗	MOTOR DRIVE VALVE	⊗	HEAD LOSS INDICATING ALARM
⊙	CYLINDER OPERATED VALVE	⊙	PH INDICATING ALARM
⊘	RELIEF VALVE	⊘	PRESSURE INDICATOR
∟	CHECK VALVE	∟	FLOW INDICATOR
⊡	LEVEL CONTROLLER	⊡	FLOW TOTALIZING RECORDER
⊢	FOOT VALVE	⊢	LEVEL ALARM
⊣	REDUCING VALVE	⊣	LEVEL INDICATING ALARM
⊤	CONDUCTIVITY INDICATING ALARM	⊤	FLOW CONTROL VALVE

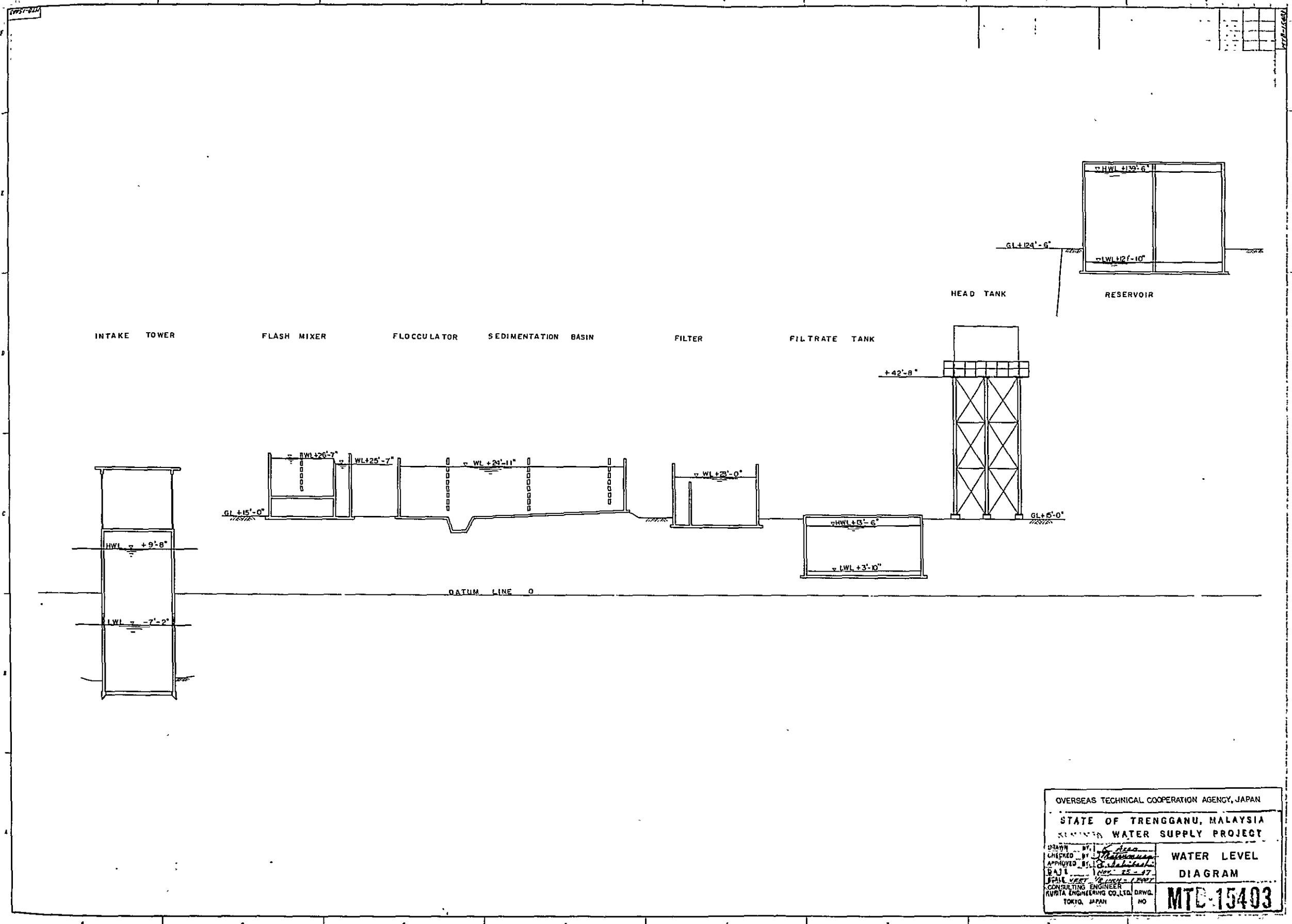


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAH WATER SUPPLY PROJECT

DRAMAN BY *K. Arao*
 CHECKED BY *S. S. S. S.*
 APPROVED BY *S. S. S. S.*
 DATE *Nov 25 77*

SCALE *NOT SHOWN*
 CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. TOKYO, JAPAN

FLOW DIAGRAM
MTC-15402

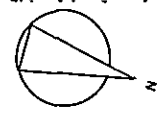


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

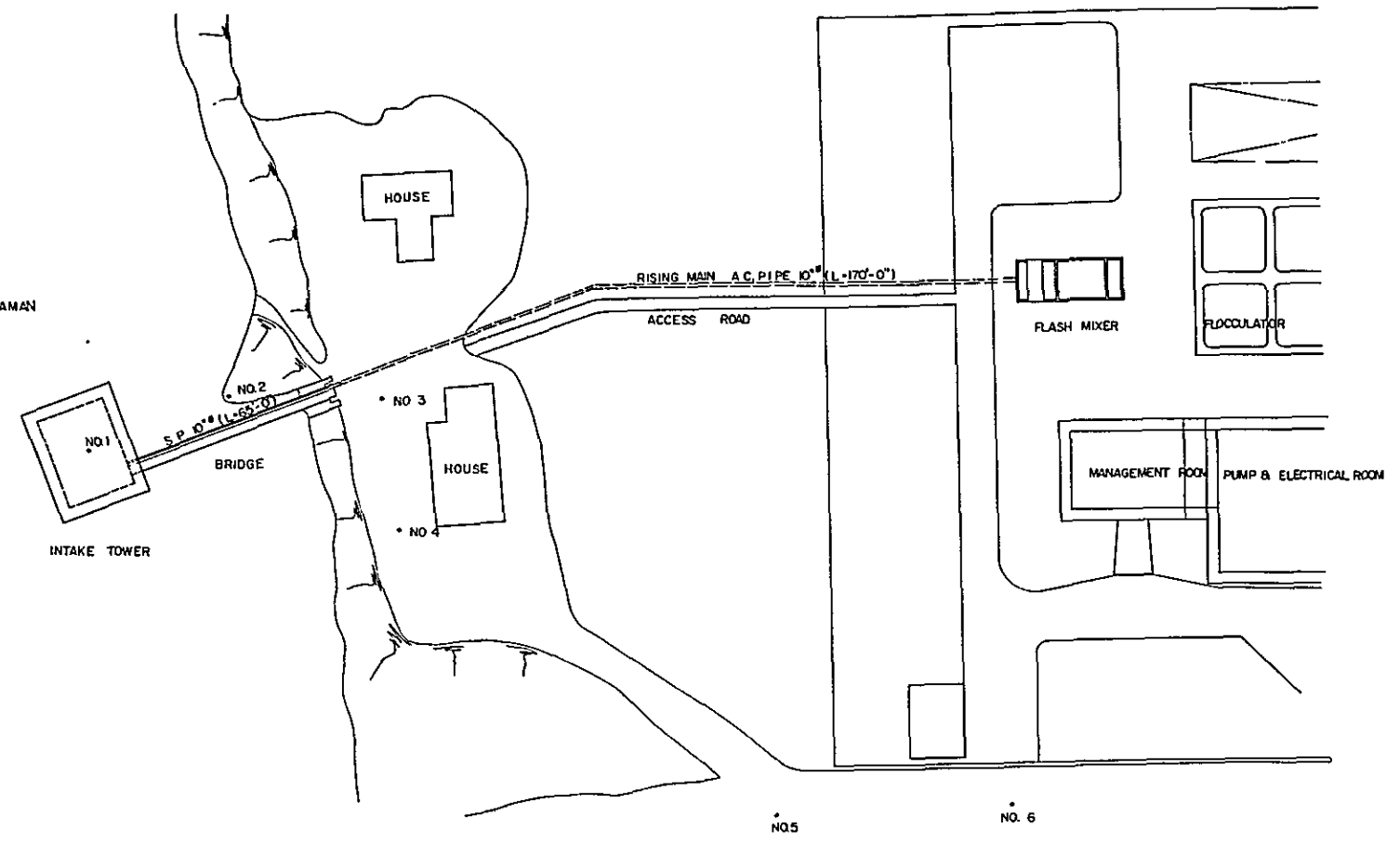
STATE OF TRENGGANU, MALAYSIA

KUATIN WAH WATER SUPPLY PROJECT

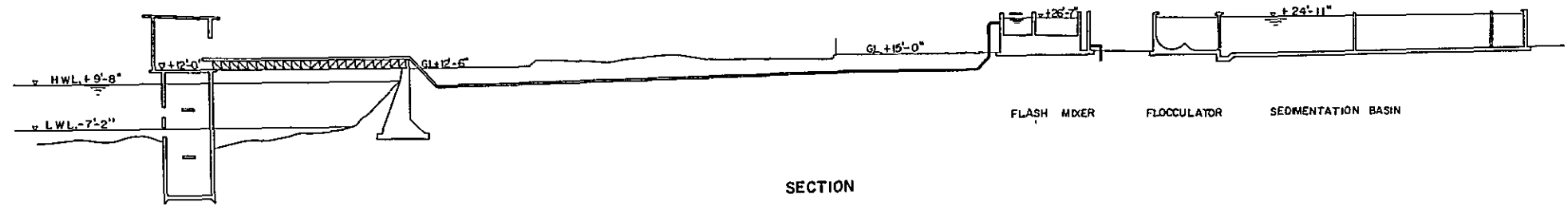
DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: Nov. 25 - 87 SCALE: VERT. 1/8" = 1'-0" CONSULTING ENGINEER KUMITA ENGINEERING CO., LTD. DRWG. TOKYO, JAPAN	WATER LEVEL DIAGRAM MTD-15403
---	--



S KEMAMAN

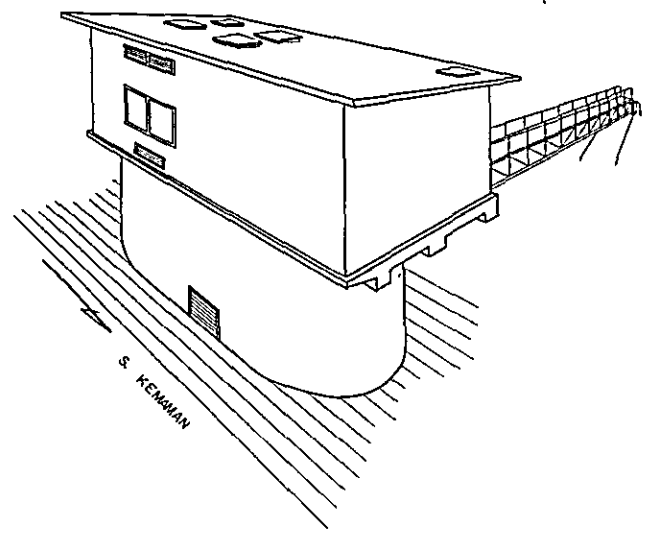
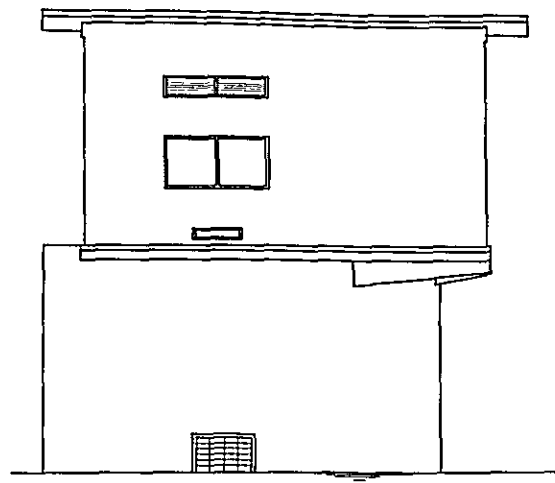
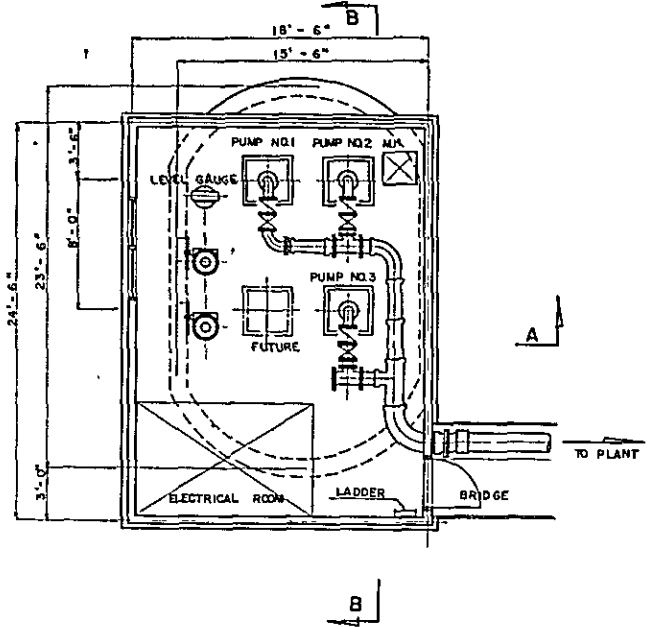


REMARKS
1. NO. 1-7 SHOW SURVEY POINT. REFER TO DRWG. NO. MTR-15436 PROFILE

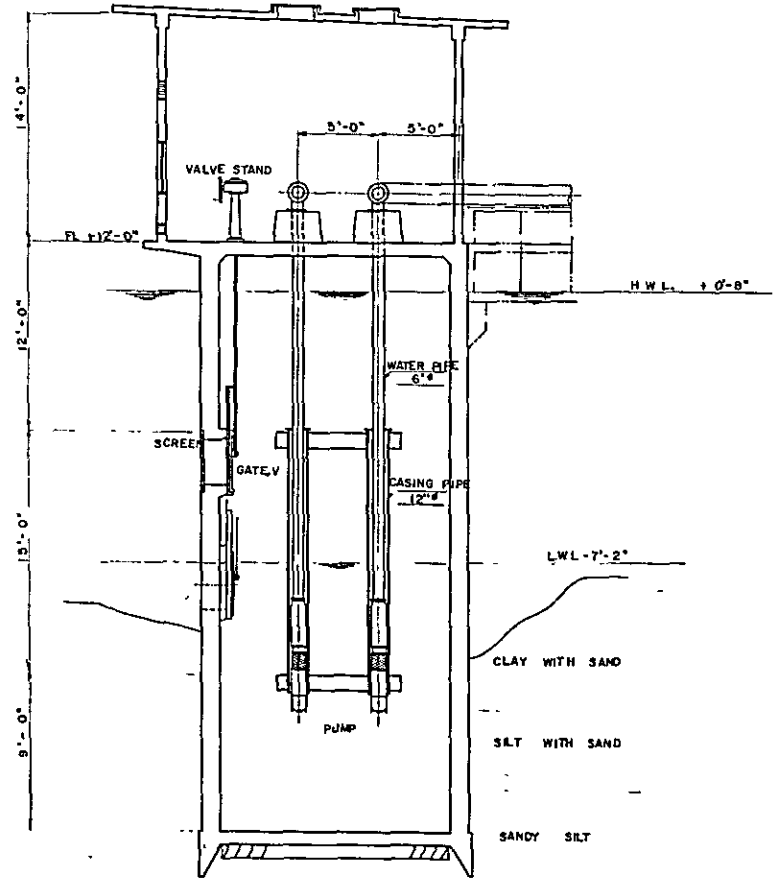


SECTION

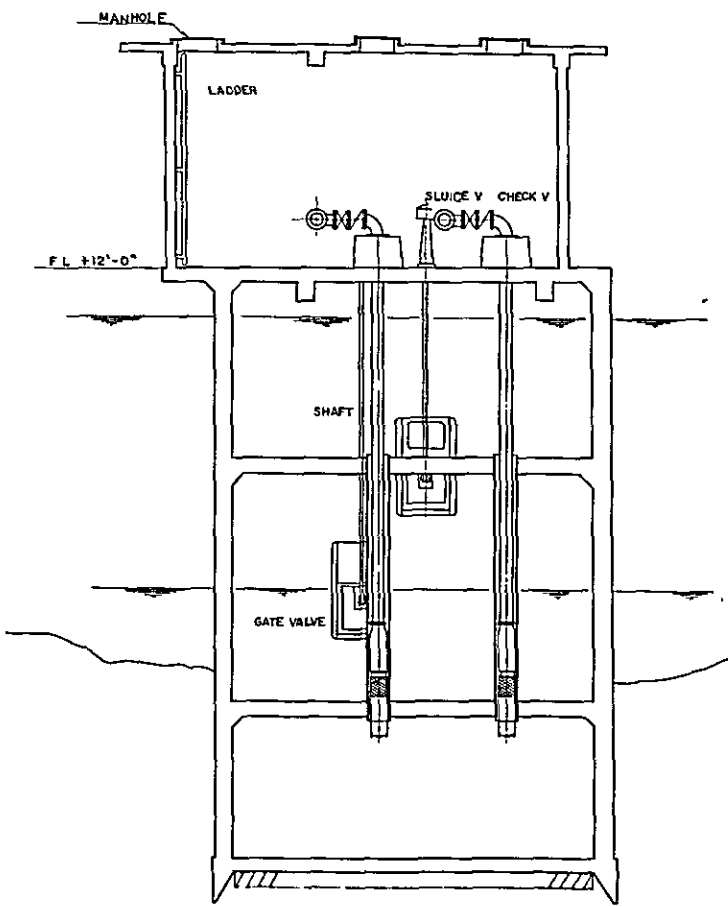
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE : TRENGGANU, MALAYSIA	
KEMAMAN WATER SUPPLY PROJECT	
Drawn by: <i>[Signature]</i>	PLAN AND PLOT FOR INTAKE SITE
Checked by: <i>[Signature]</i>	
DATE: NOV 25 '52	MTC-15404
SCALE: 1/4" = 10 FEET	
CONSULTING ENGINEER MUSTA THOMAS & CO. LTD. DRWG. TOKYO, JAPAN	



SECTION A - A



SECTION B - B



FINISH

INTERNAL FINISH

	WALLS	Ceilings	FLOOR
PUMP HOUSE	PLASTER	PLASTER	MORTAR
TOWER	BARE	BARE	BARE

EXTERNAL FINISH

	WALLS	COLOR MORTAR
PUMP HOUSE	ROOF	WATER-PROOF-MORTAR
TOWER	ALL BARE	

REMARKS
ALL CONCRETE MADE

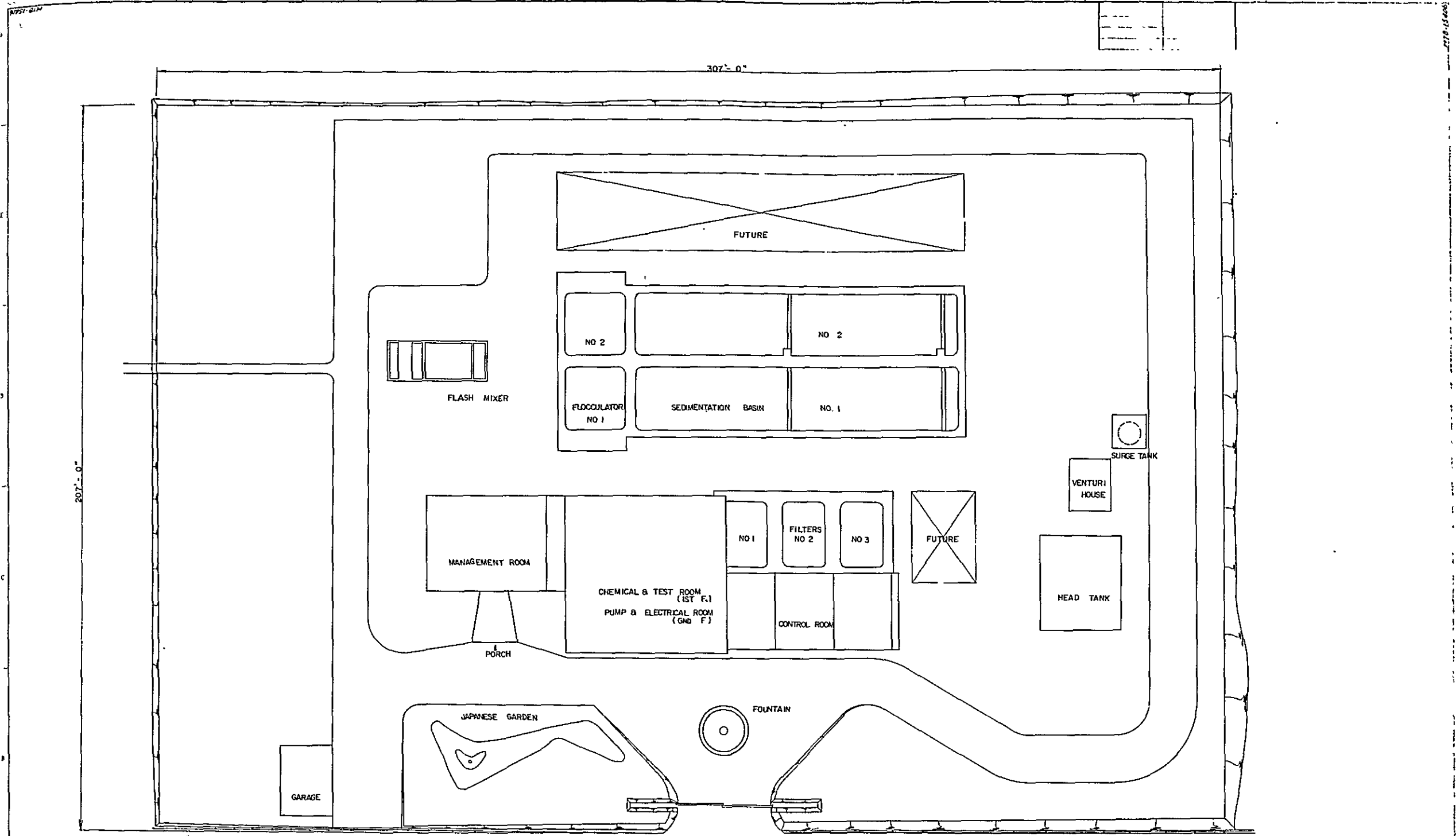
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

KEMAMAN 43122 SURVEY PROJECT

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 DATE 1957.05.27
 CONSULTING ENGINEER

PLAN FOR
INTAKE STATION

MTD-15405



207'-0"

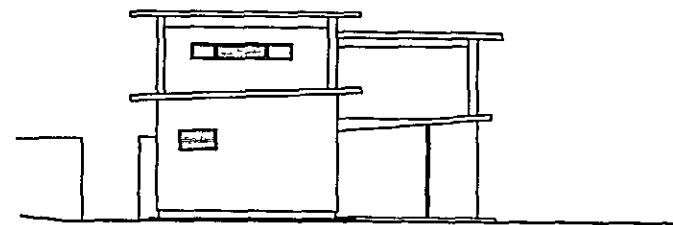
307'-0"

TO RIVER

ROAD

TO HIGH WAY

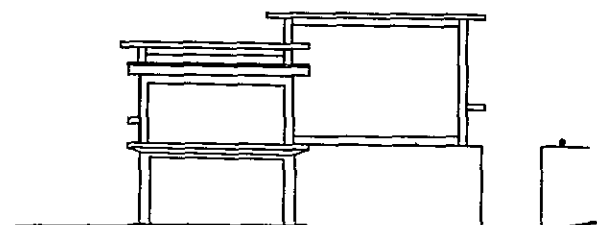
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF THAILAND
 KINHOAN WATER SUPPLY PROJECT
 DRAWN BY *K. Arai*
 CHECKED BY *M. S. ...*
 APPROVED BY *S. ...*
 DATE *NOV 25-67*
 SCALE *3/8" = 1' FT*
 CONSULTING ENGINEER
 PURTA ENG'G CO. LTD.
NTC-15406



SIDE ELEVATION



FRONT ELEVATION



SIDE ELEVATION



REAR ELEVATION

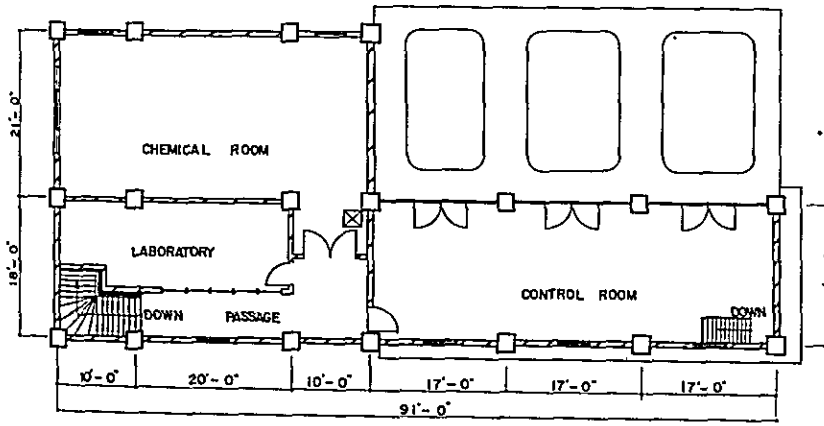
FINISH

INTERNAL FINISH				
ROOM	WALLS	COLUMNS	FLOORS	ROOF
PORCH	PLASTER	PLASTER	CONCRETE	CONCRETE
OFFICE	PLASTER	PLASTER	CONCRETE	CONCRETE
NIGHT DUTY ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE
LABORATORY	PLASTER	PLASTER	CONCRETE	CONCRETE
WETTING ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE
PASSAGE	PLASTER	PLASTER	CONCRETE	CONCRETE
ELECTRICAL ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE
PUMP ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE
STORE	PLASTER	PLASTER	CONCRETE	CONCRETE
CHLORINE ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE
PIPING GALLERY	PLASTER	PLASTER	CONCRETE	CONCRETE
LABORATORY	PLASTER	PLASTER	CONCRETE	CONCRETE
CHEMICAL ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE
CONTROL ROOM	PLASTER	PLASTER	CONCRETE	CONCRETE

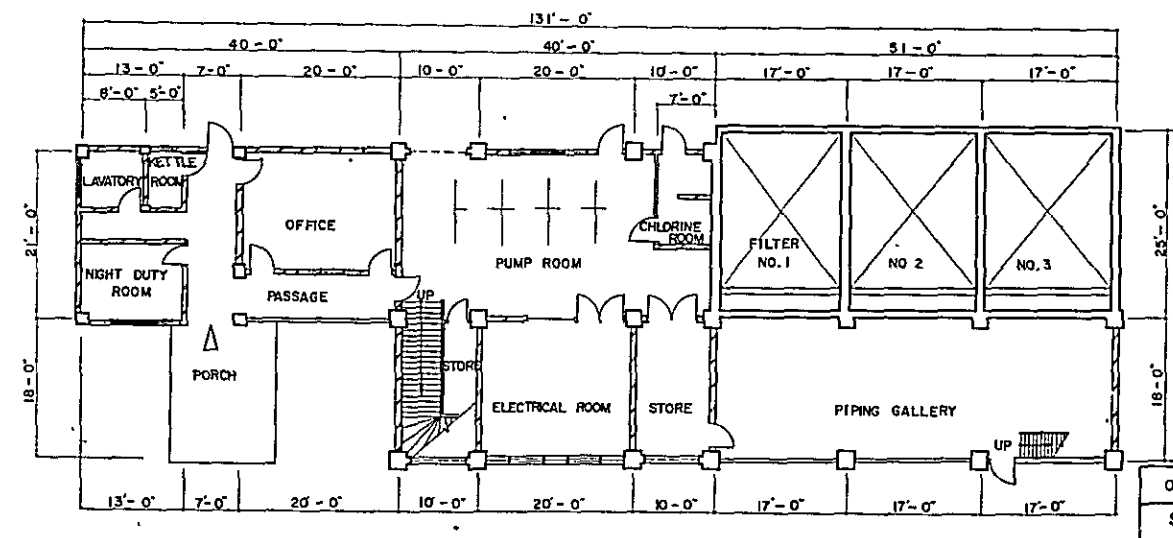
EXTERNAL FINISH

WALLS	COLUMNS	FLOORS	ROOF
PLASTER	PLASTER	CONCRETE	CONCRETE

REMARKS
 [Symbol] BRICKWORK
 [Symbol] CONCRETE COLUMN
 [Symbol] SLOTTED CEILING ABOVE



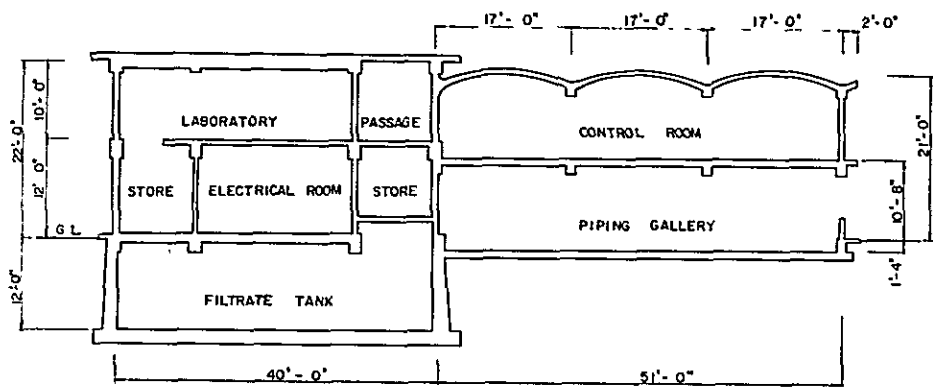
FIRST FLOOR



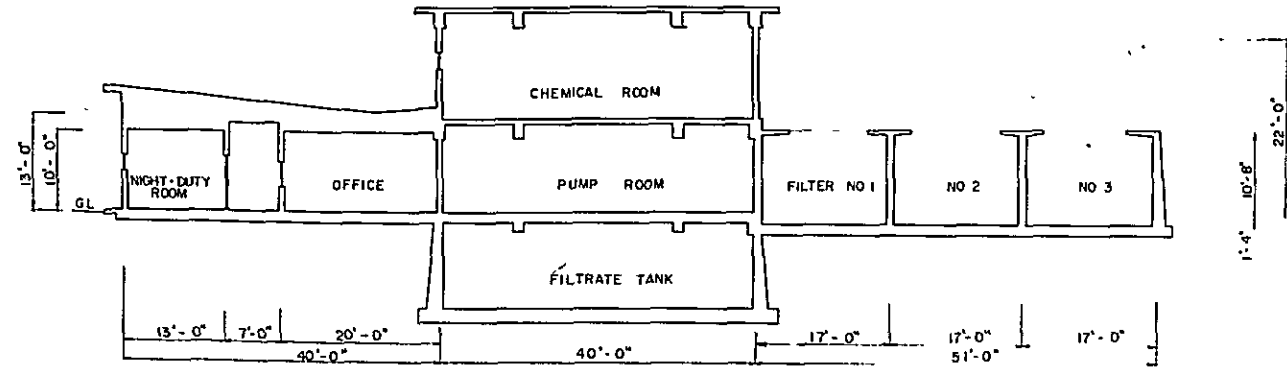
GROUND FLOOR PLAN

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT
 FLOOR & ELEVATION PLAN
 FOR
 CONTROL BUILDING
 MTC-15407

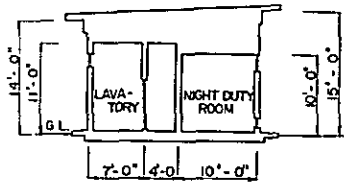
DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 DATE: 2005.05.07
 SCALE: 1/8" = 1'-0"
 CONSULTING ENGINEER
 FUJITA ENGINEERING CO., LTD. DRWG.
 TOKYO, JAPAN



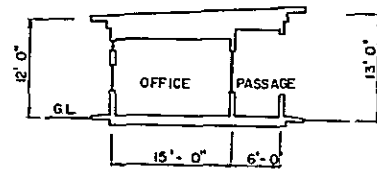
SECTION A-A



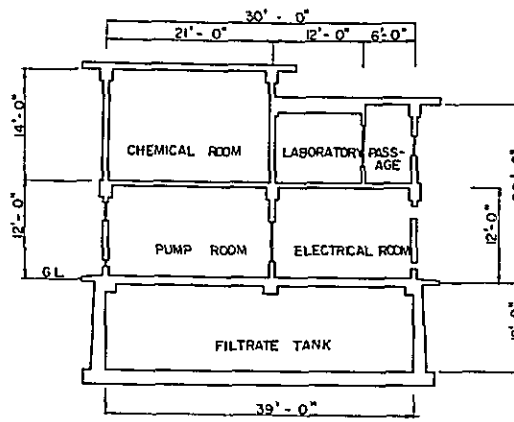
SECTION B-B



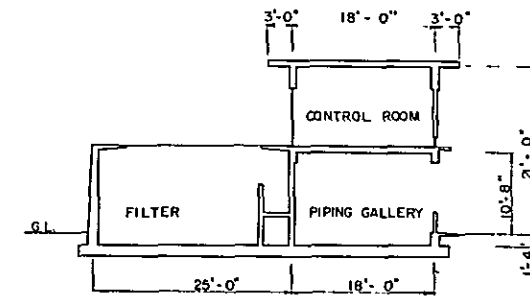
SECTION C-C



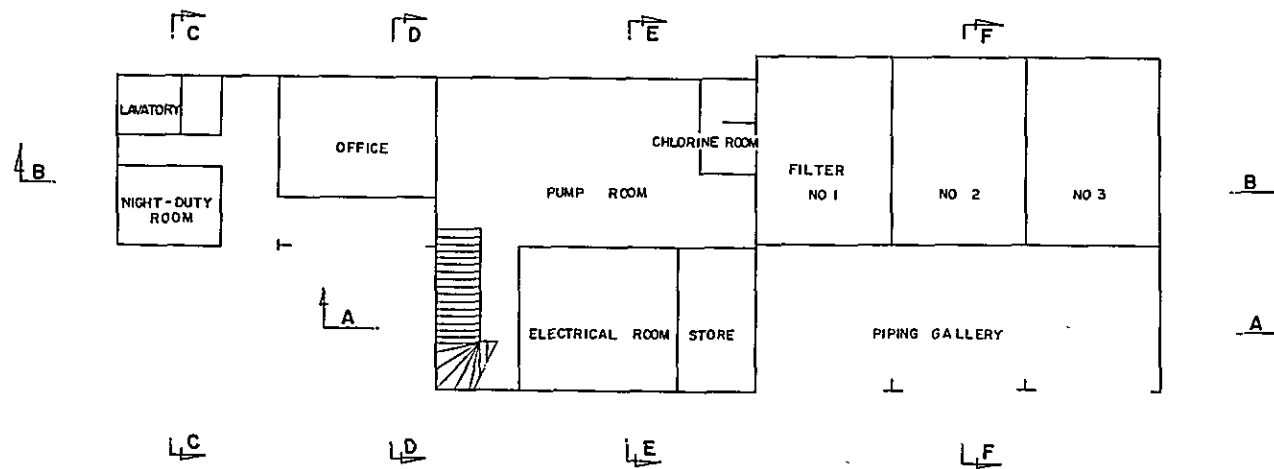
SECTION D-D



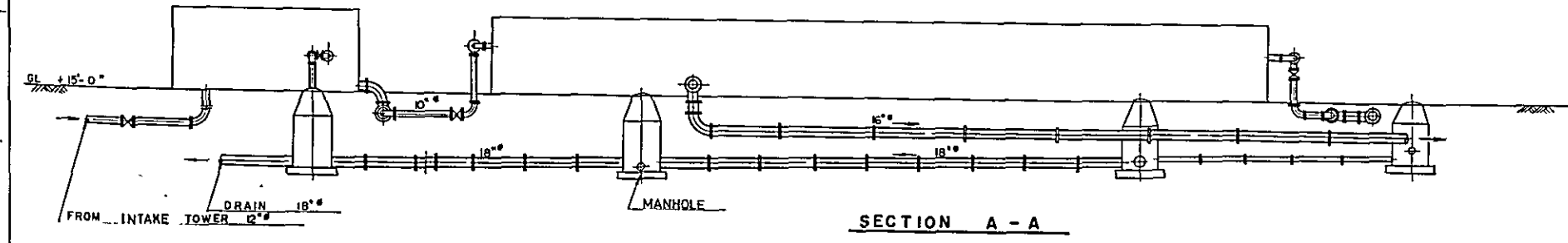
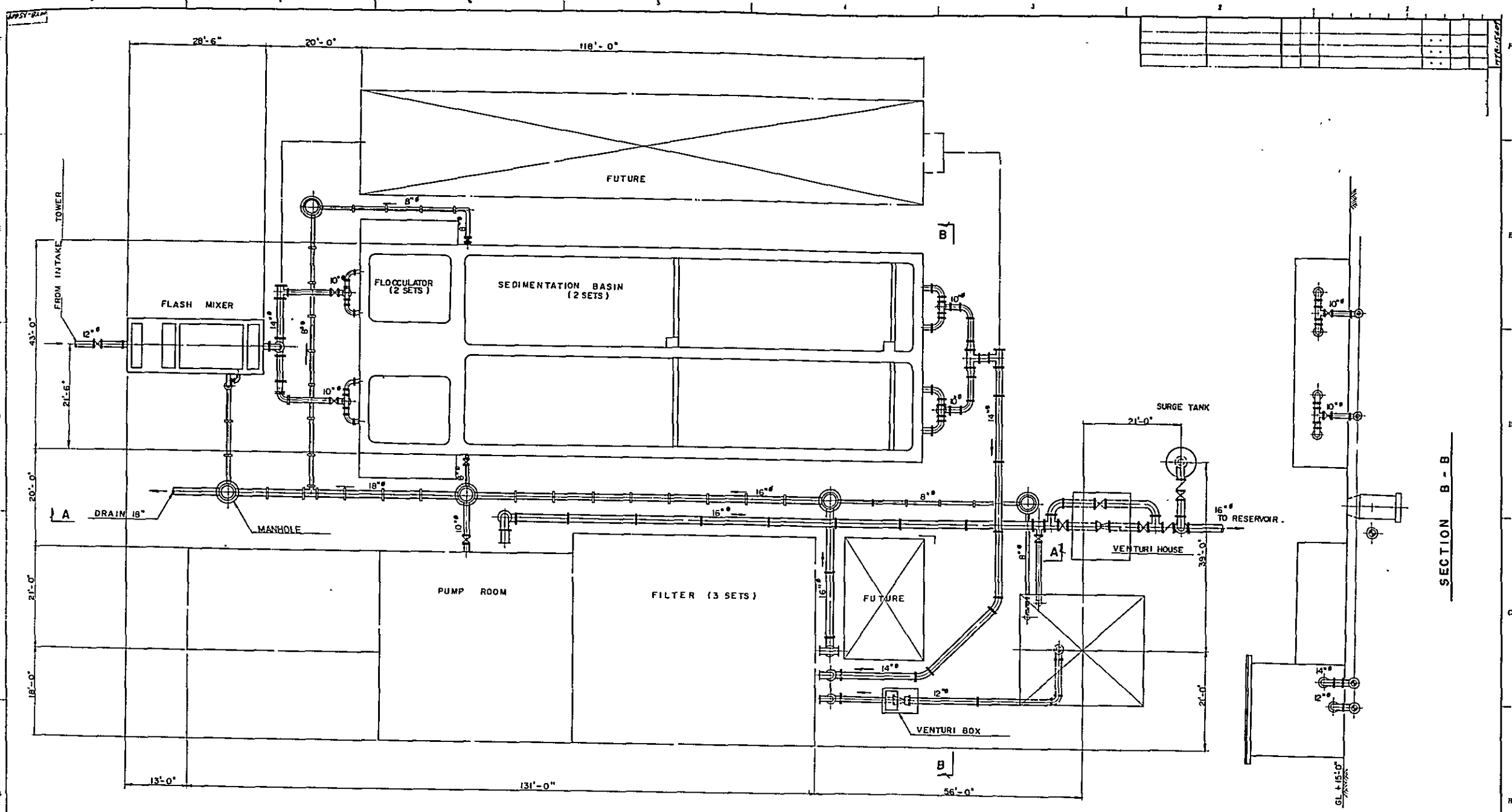
SECTION E-E



SECTION F-F

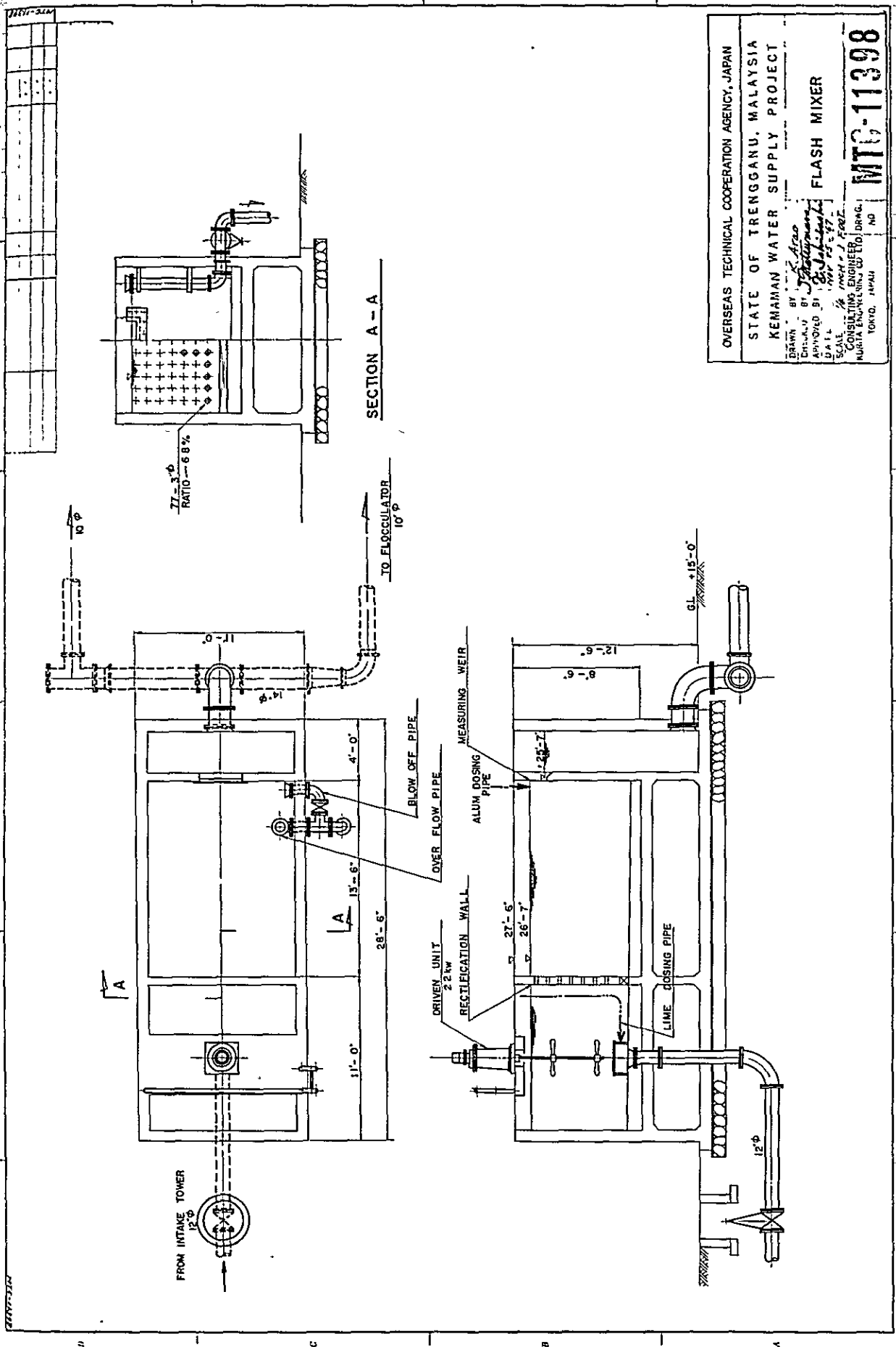


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>K. Arai</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: <i>NOV 25 '67</i> SCALE: <i>1/8" = 10' 0"</i> CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. CHANG TOKYO, JAPAN	SECTION FOR CONTROL BUILDING MTS-15408



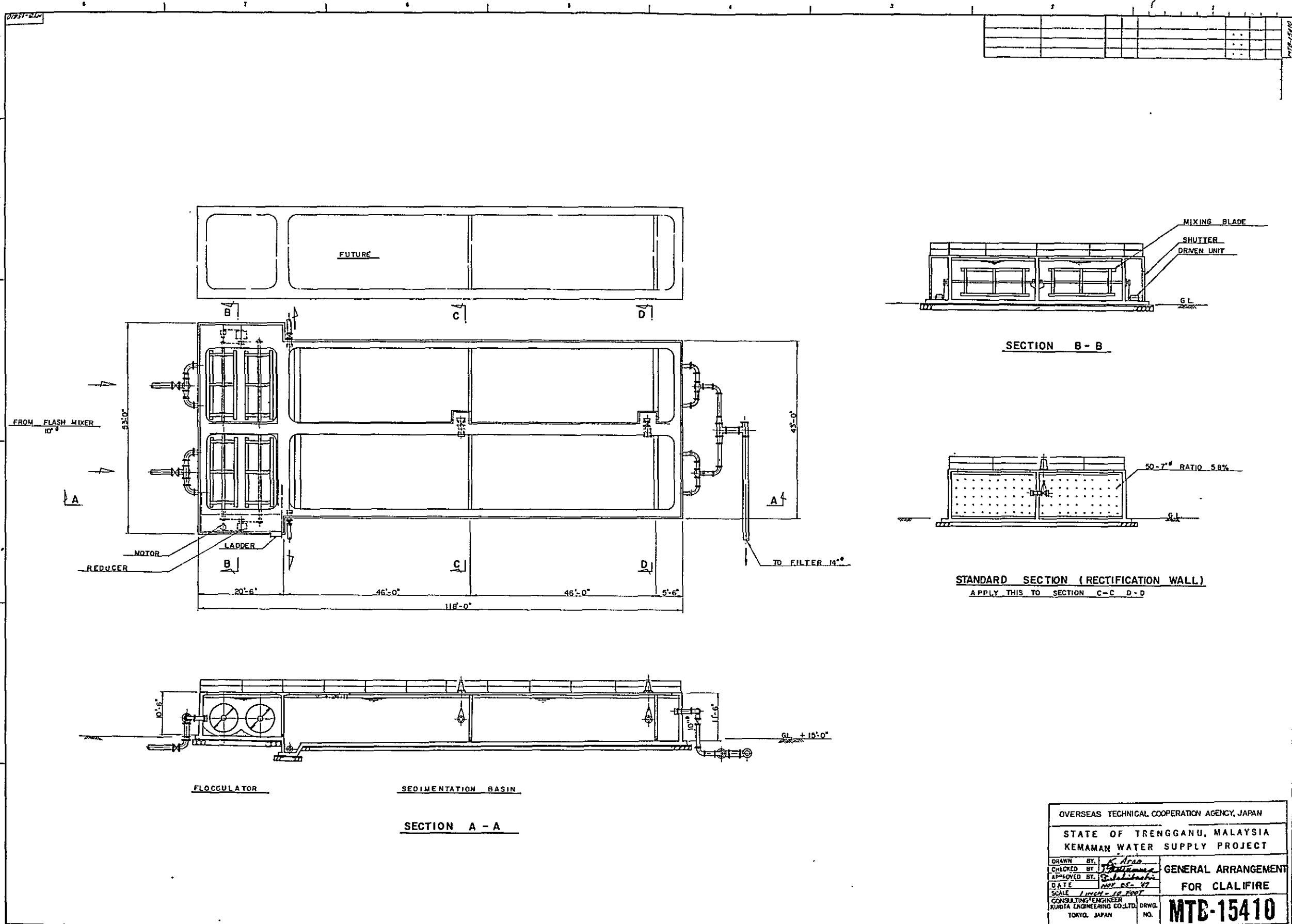
OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TREHGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

By Arco
S. J. S. S. S.
 GENERAL ARRANGEMENT
 NOV 25-67
 SCALE 1/4" = 10' FEET
 CONSULTING ENGINEER
 MTD-15409

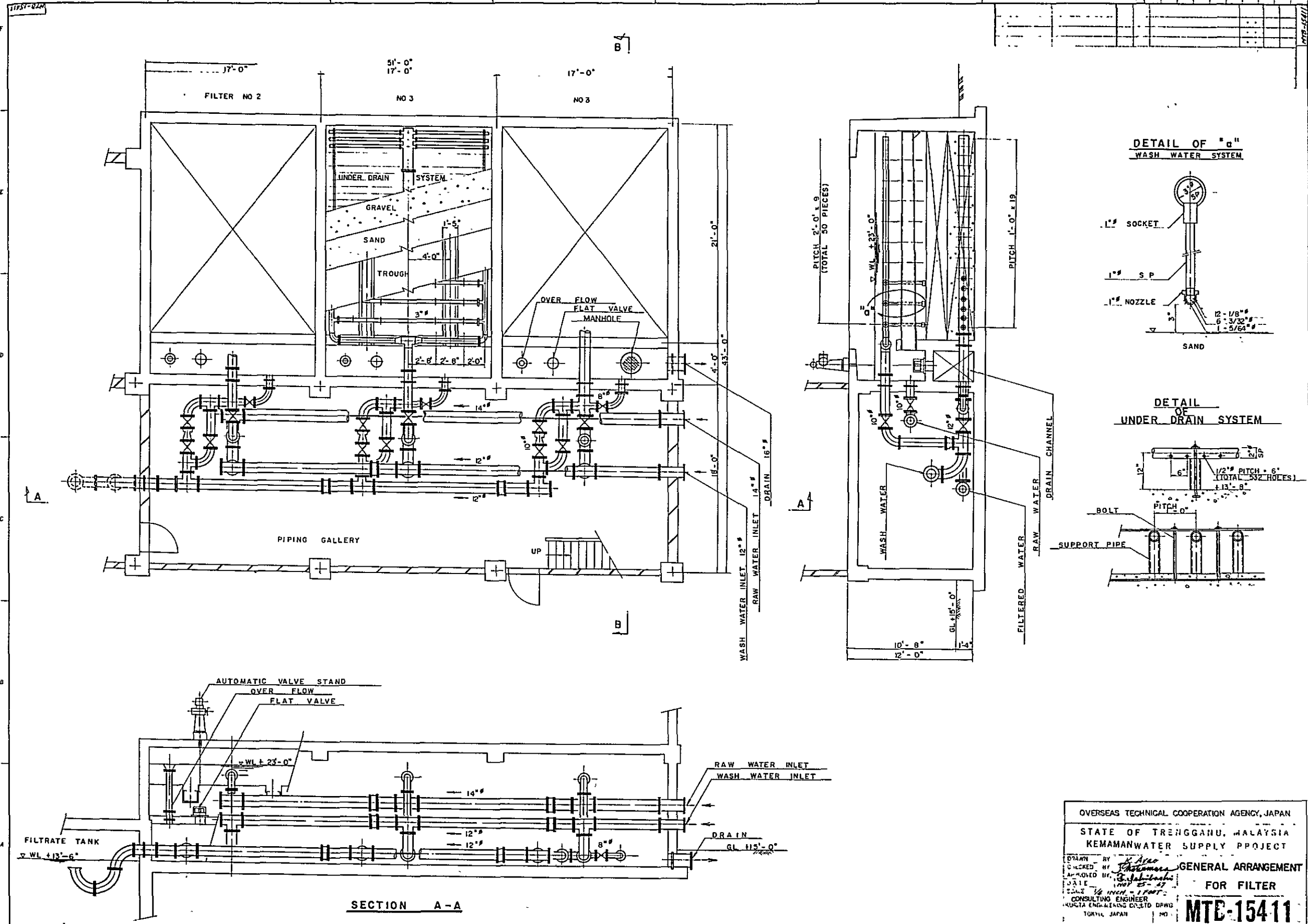


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT
 FLASH MIXER
 DRAWN BY: *Arao*
 DESIGNED BY: *Shigeyuki*
 SUPERVISOR BY: *B. J. ...*
 SCALE: 1/4" = 1'-0"
 SHEET NO: 11398
 PROJECT NO: 11398
 MURATA ENGINEERING CO. DRAG.
 TOKYO, JAPAN

MTG-11398

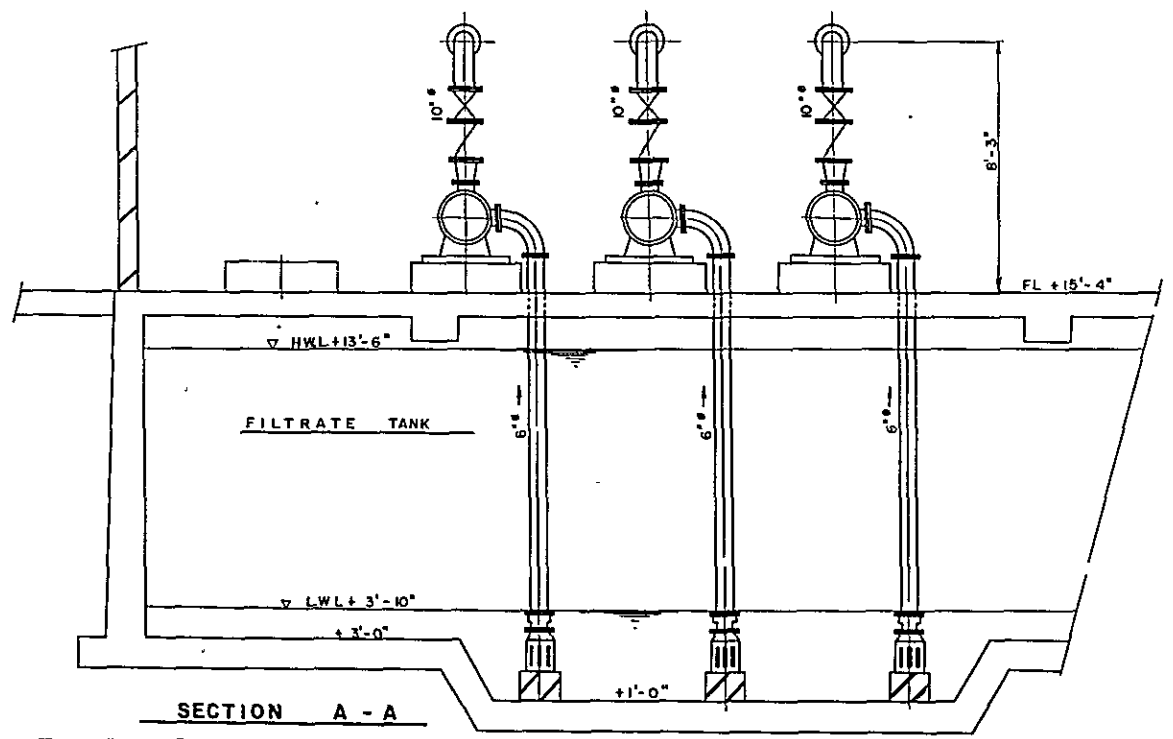
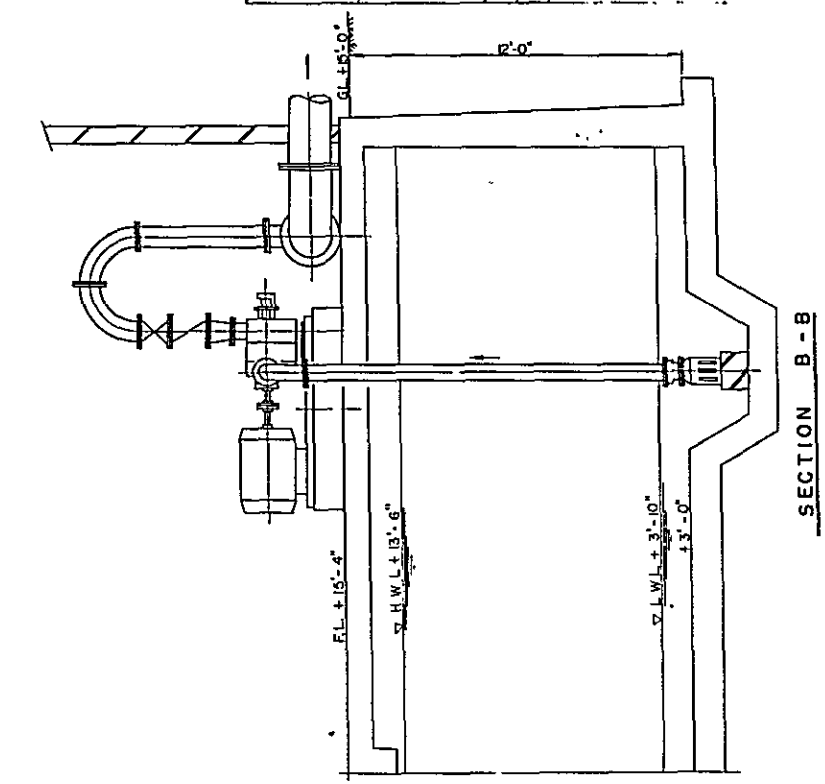
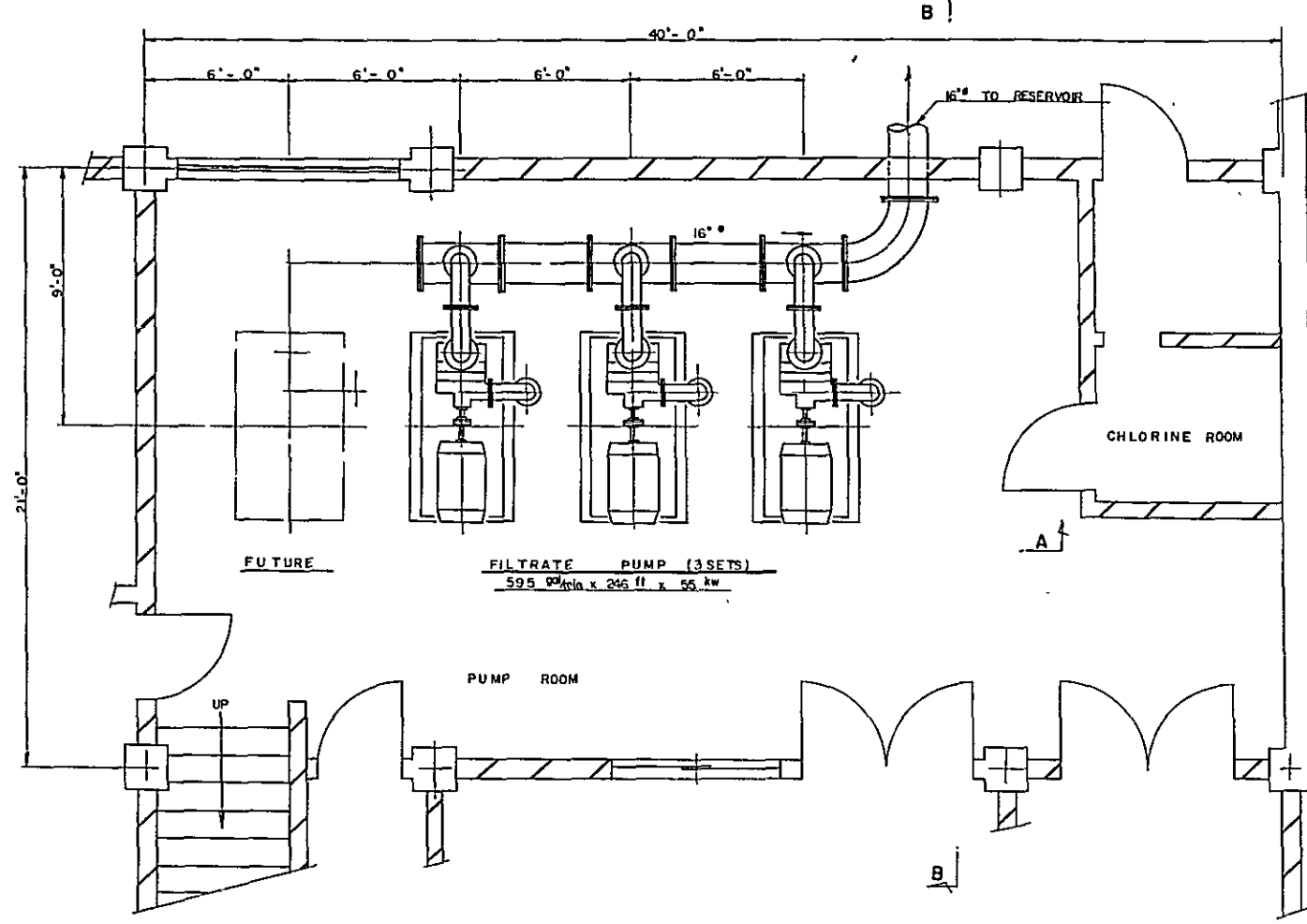


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>K. Ariso</i>	GENERAL ARRANGEMENT FOR CLALIFIRE MTB-15410
CHECKED BY: <i>[Signature]</i>	
APPROVED BY: <i>[Signature]</i>	
DATE: <i>NOV. 25- 97</i>	
SCALE: <i>1/1000 = 10' 000'</i>	
CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. TOKYO, JAPAN	DRWG. NO.



OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMANWATER SUPPLY PROJECT
 GENERAL ARRANGEMENT
 FOR FILTER
 MTE-15411

DRAWN BY: *K. Arai*
 CHECKED BY: *S. Shimizu*
 APPROVED BY: *S. Shimizu*
 DATE: *NOV 25-57*
 SCALE: *1/8" = 1'-0"*
 CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRWG.
 TOKYO, JAPAN



OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA

WATER SUPPLY PROJECT

GENERAL ARRANGEMENT

FOR FILTRATE PUMP

SCALE 3/8" = 1' FOOT

NOV 25 - '67

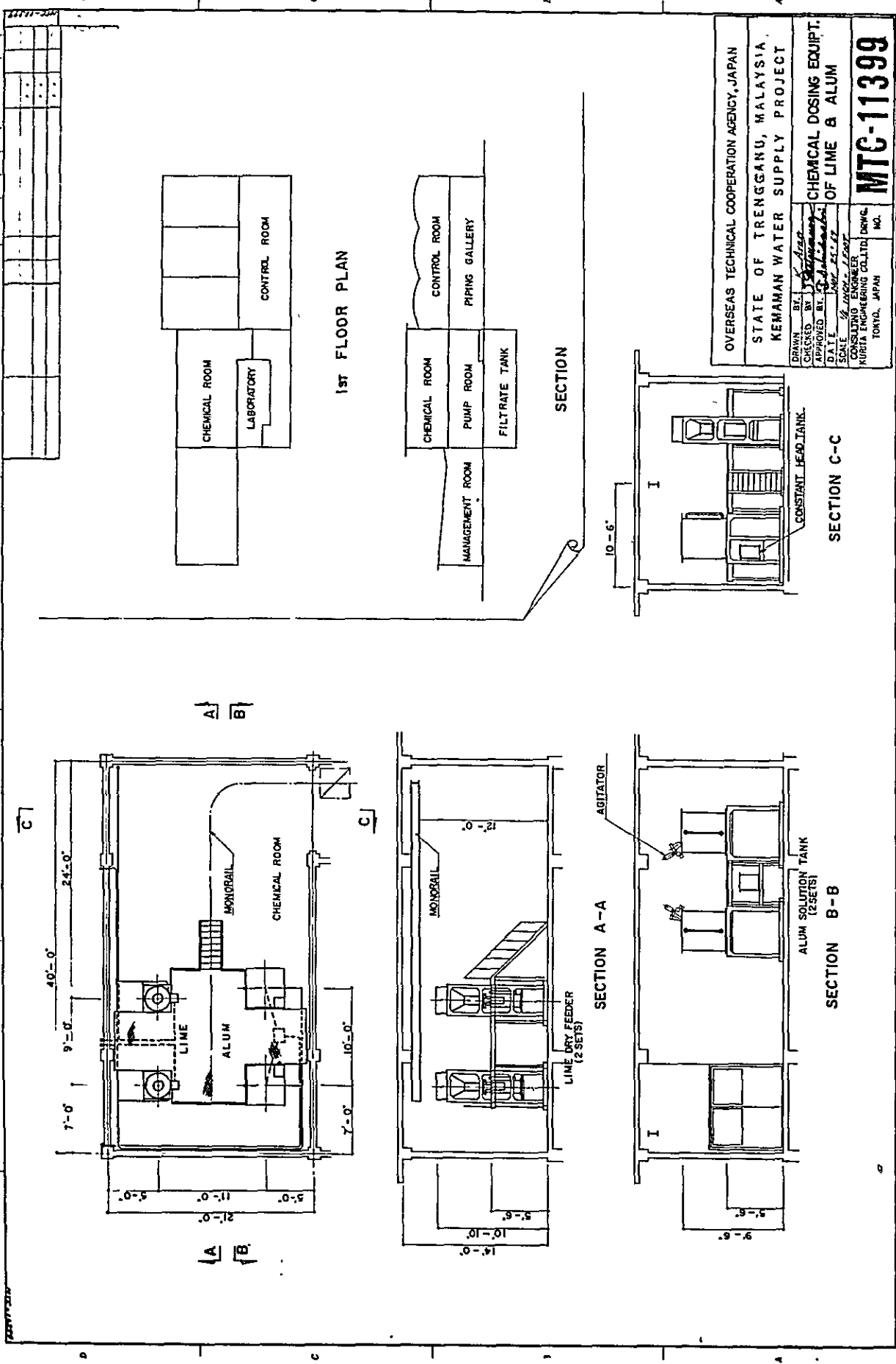
CONSULTING ENGINEER

KUJITA ENGINEERING CO., LTD. DRWG.

TOKYO, JAPAN

NO

MTD-15412



1ST FLOOR PLAN

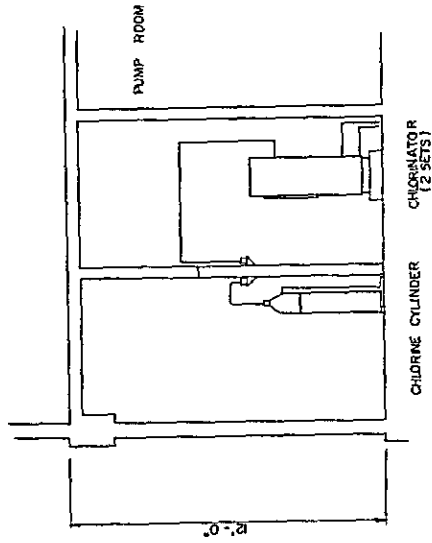
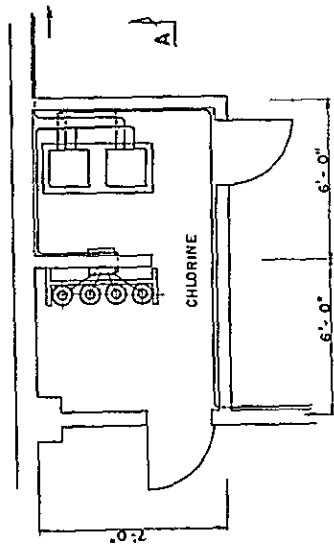
SECTION

SECTION C-C

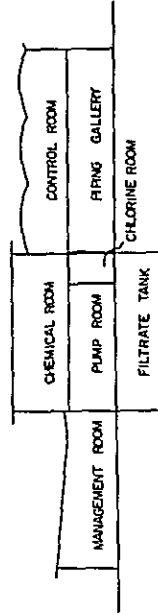
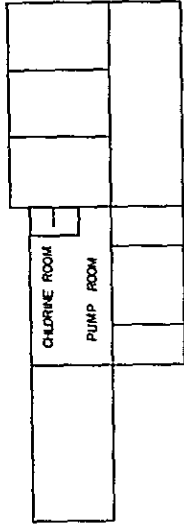
SECTION A-A

SECTION B-B

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA.	
KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: <i>[Date]</i> SCALE: <i>[Scale]</i>	CHEMICAL DOSING EQUIPT. OF LIME & ALUM MTG-11399
CONSULTING ENGINEER KURETA ENGINEERING CO., LTD. (DRMG) TOKYO, JAPAN	



SECTION A - A

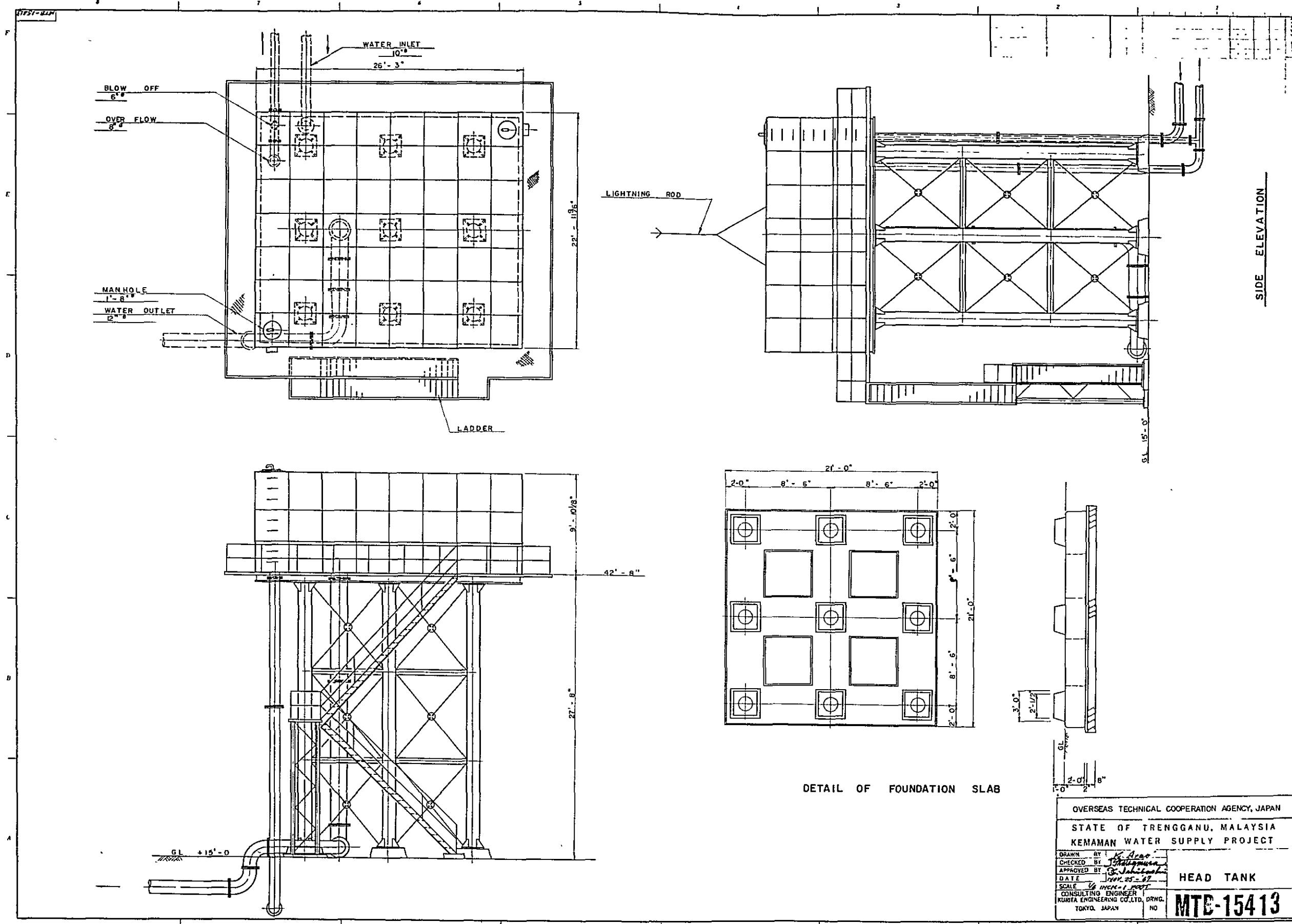


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 OFFICE: 1, HIGASHI, MALAYSIA
 PROJECT: CHLORINE SUPPLY PROJECT

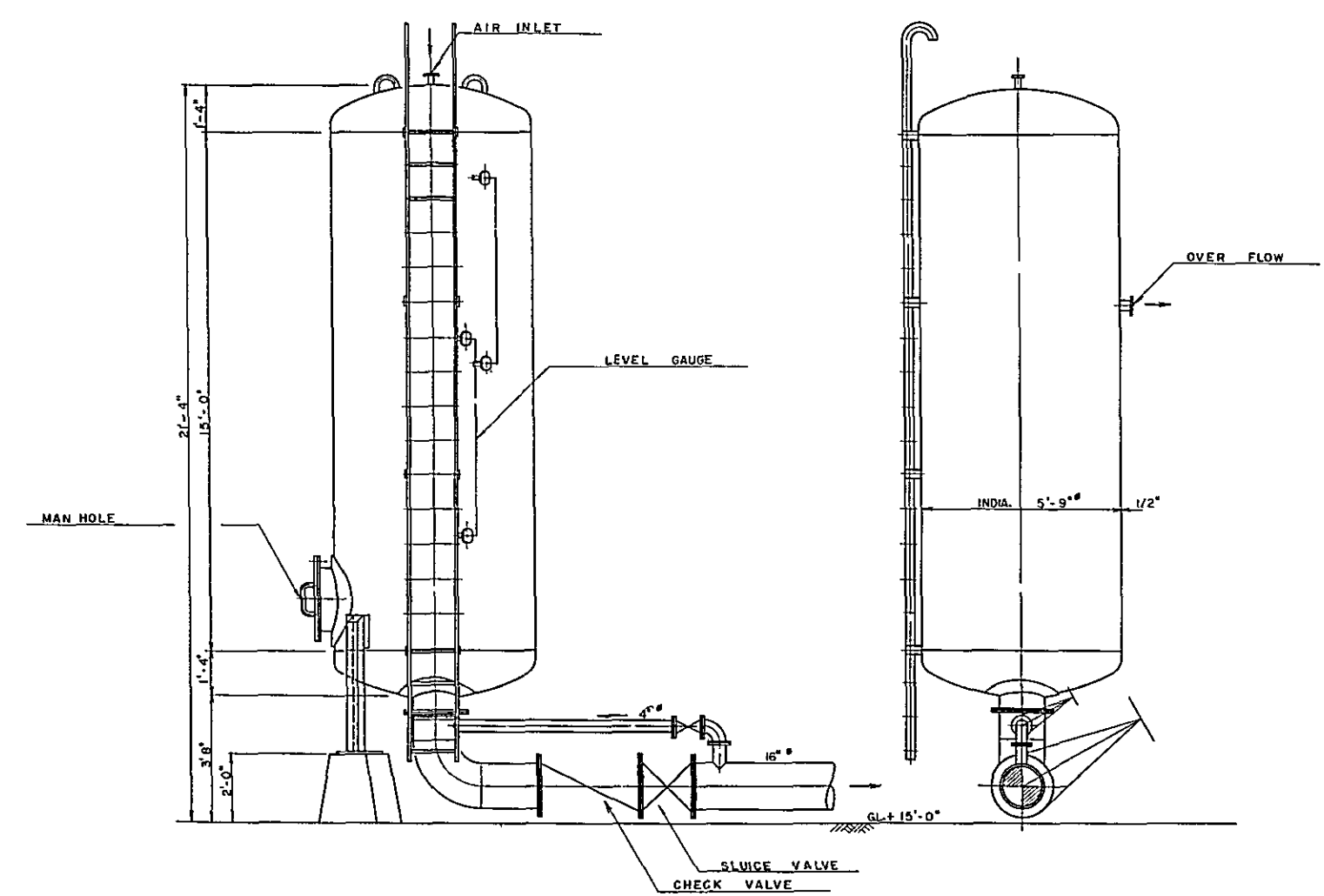
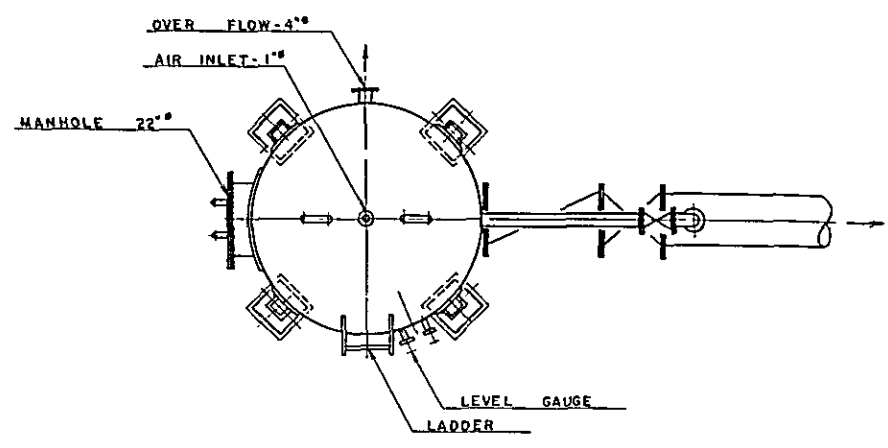
J. A. ...
 CONSULTING ENGINEER
 NOV 25, 1977

CHEMICAL DOSING EQUIPT. OF CHLORINE

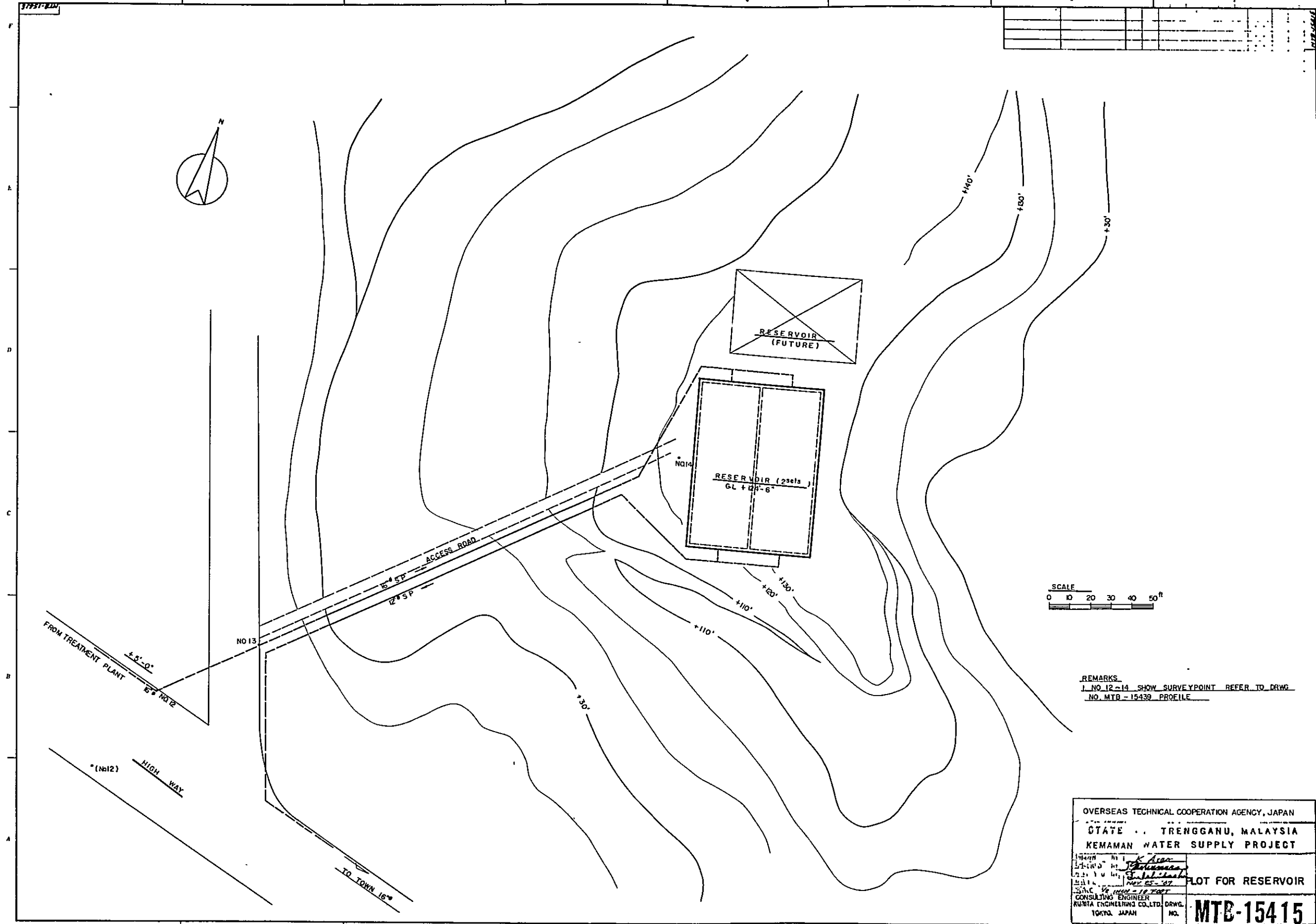
MTG-11400



OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY <i>K. Arora</i>	HEAD TANK
CHECKED BY <i>S. Subramanian</i>	
APPROVED BY <i>S. Subramanian</i>	MTC-15413
DATE 1994.05.27	
SCALE 1/4" = 1'-0"	
CONSULTING ENGINEER	
KURITA ENGINEERING CO., LTD. DRWG.	
TOKYO, JAPAN	

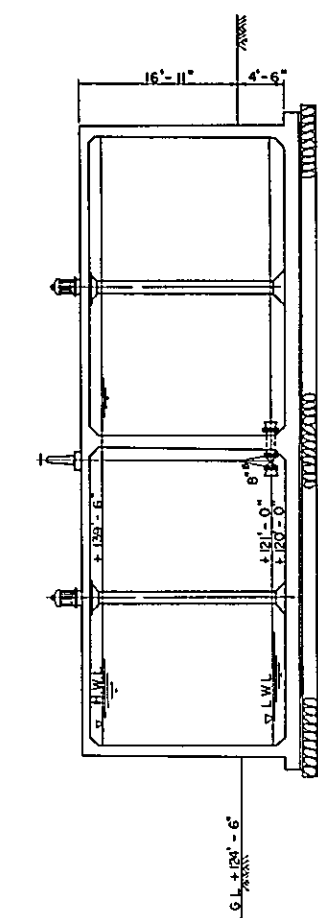
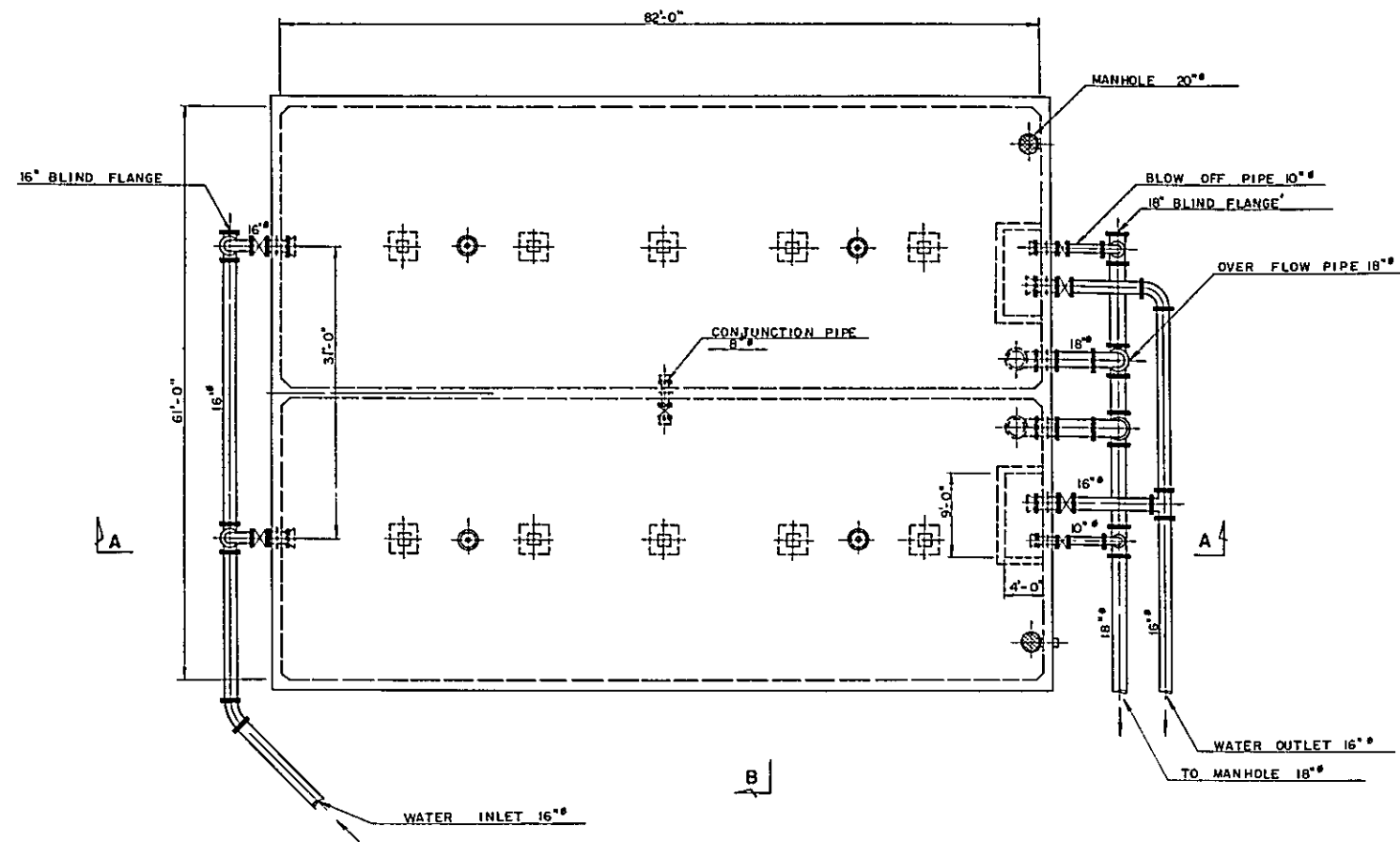


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>K. Aida</i>	SURGE TANK
CHECKED BY: <i>[Signature]</i>	
APPROVED BY: <i>[Signature]</i>	MTB-15414
DATE: <i>10/05/87</i>	
SCALE: <i>1/4" = 1'-0"</i>	
CONSULTING ENGINEER	DRWG. NO.
KURITA ENGINEERING CO., LTD.	

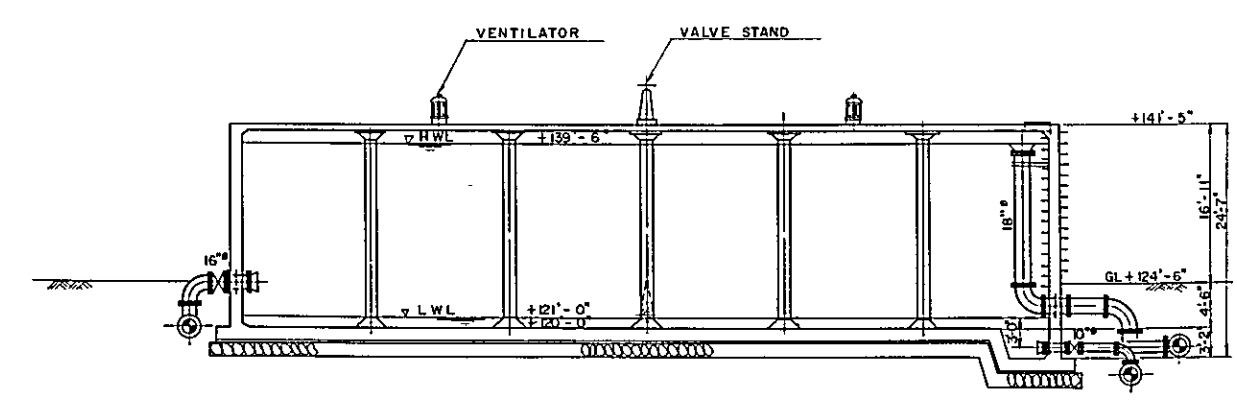


REMARKS.
 1. NO. 12-14 SHOW SURVEYPOINT REFER TO DRWG.
 NO. MTB-15439 PROFILE.

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE .. TRENGGANU, MALAYSIA	
KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>K. Arai</i> CHECKED BY: <i>Shimizu</i> DATE: <i>Nov. 25-87</i>	FLOT FOR RESERVOIR
SCALE: 1" = 10 FEET CONSULTING ENGINEER: KUNTA ENGINEERING CO. LTD. DRWG. NO.	MTB-15415

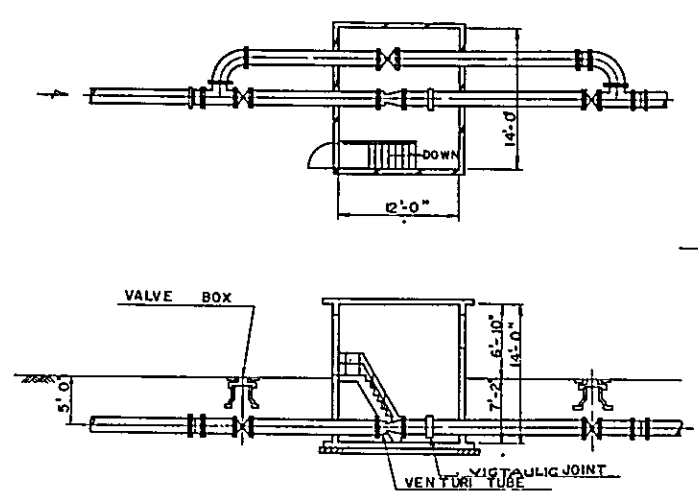


SECTION B - B

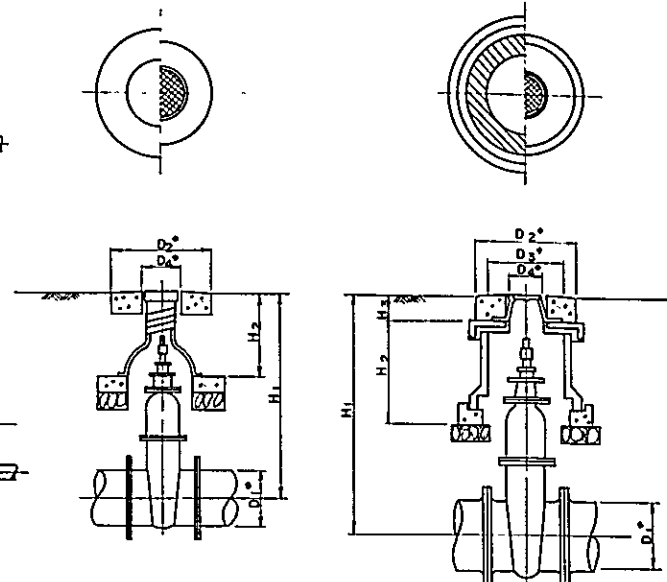


SECTION A - A

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>S. Aras</i> CHECKED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> DATE: <i>Nov 25 67</i>	RESERVOIR
SCALE: <i>1/4" = 1'-0"</i> CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. DRWG. TOKYO, JAPAN	MTB-15416

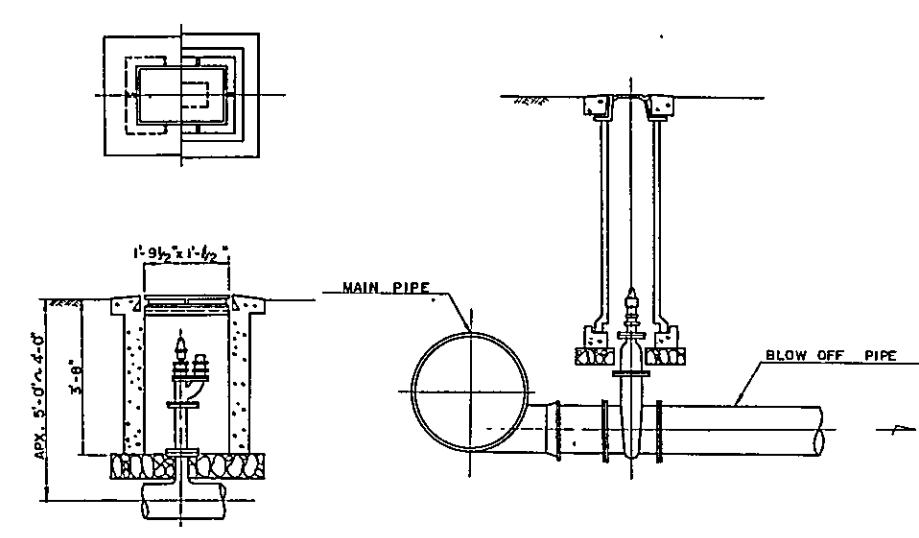


VENTURHOUSE (WITH BYPASS)



SLUICE VALVE BOX (1)
APPLY TO BOX (2)

SLUICE VALVE BOX (2)

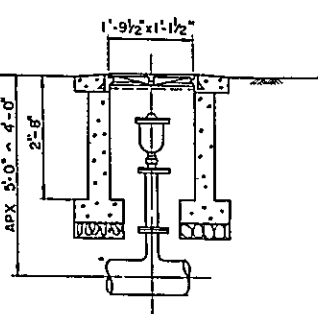
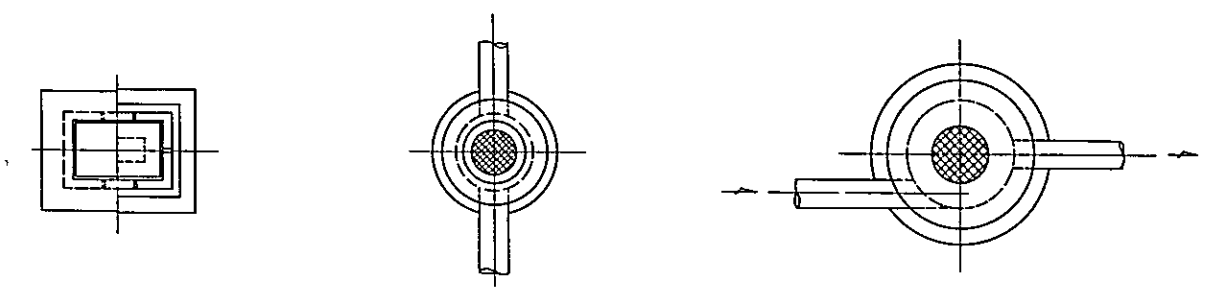


HYDRANT

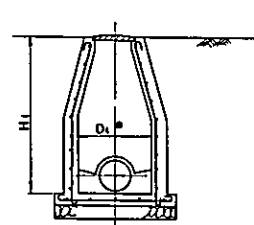
DRAIN VALVE

SLUICE VALVE BOX

D ₁	D ₂	D ₃	D ₄	H ₁	H ₂	H ₃	REMARKS
3"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
4"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
5"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
6"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
8"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
10"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
12"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
14"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)
16"	1'-0"	0'-8"	0'-8"	0'-10"	0'-0"	0'-0"	(1)

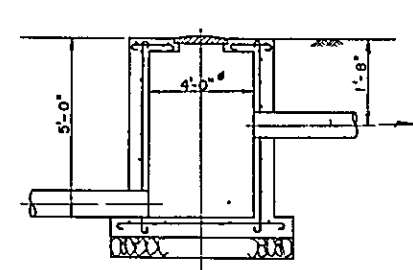


AIR RELIEF VALVE

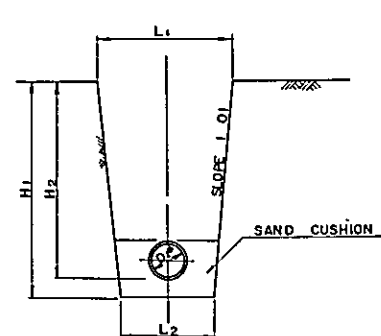


D₁ = 2'-0" 4'-0"
H₁ VARIES WITH FORMATION HEIGHT AND DIAMETER OF PIPES

MANHOLE



MANHOLE FOR DRAINAGE OF RESERVOIR



STANDARD SECTION FOR LAYING A.C. PIPE

STANDARD DIMENSION FOR A.C. PIPE

D ₁	L ₁	L ₂	H ₁	H ₂	REMARKS
2"	1'-10"	10"	0'-10"	0'-0"	USE SAND CUSHION
3"	1'-11"	11"	0'-10"	0'-0"	WHERE THE BASE IS
4"	1'-11"	11"	0'-10"	0'-0"	ROCKY ONLY
6"	2'-0"	1'-0"	0'-10"	0'-0"	
8"	2'-0"	1'-0"	0'-10"	0'-0"	
10"	2'-0"	1'-0"	0'-10"	0'-0"	
12"	2'-0"	1'-0"	0'-10"	0'-0"	
14"	2'-0"	1'-0"	0'-10"	0'-0"	
16"	2'-0"	1'-0"	0'-10"	0'-0"	

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA

KEMAMAN WATER SUPPLY PROJECT

DRAWN BY: *A. A. A.*

CHECKED BY: *S. S. S.*

APPROVED BY: *S. S. S.*

DATE: *NOV 25 82*

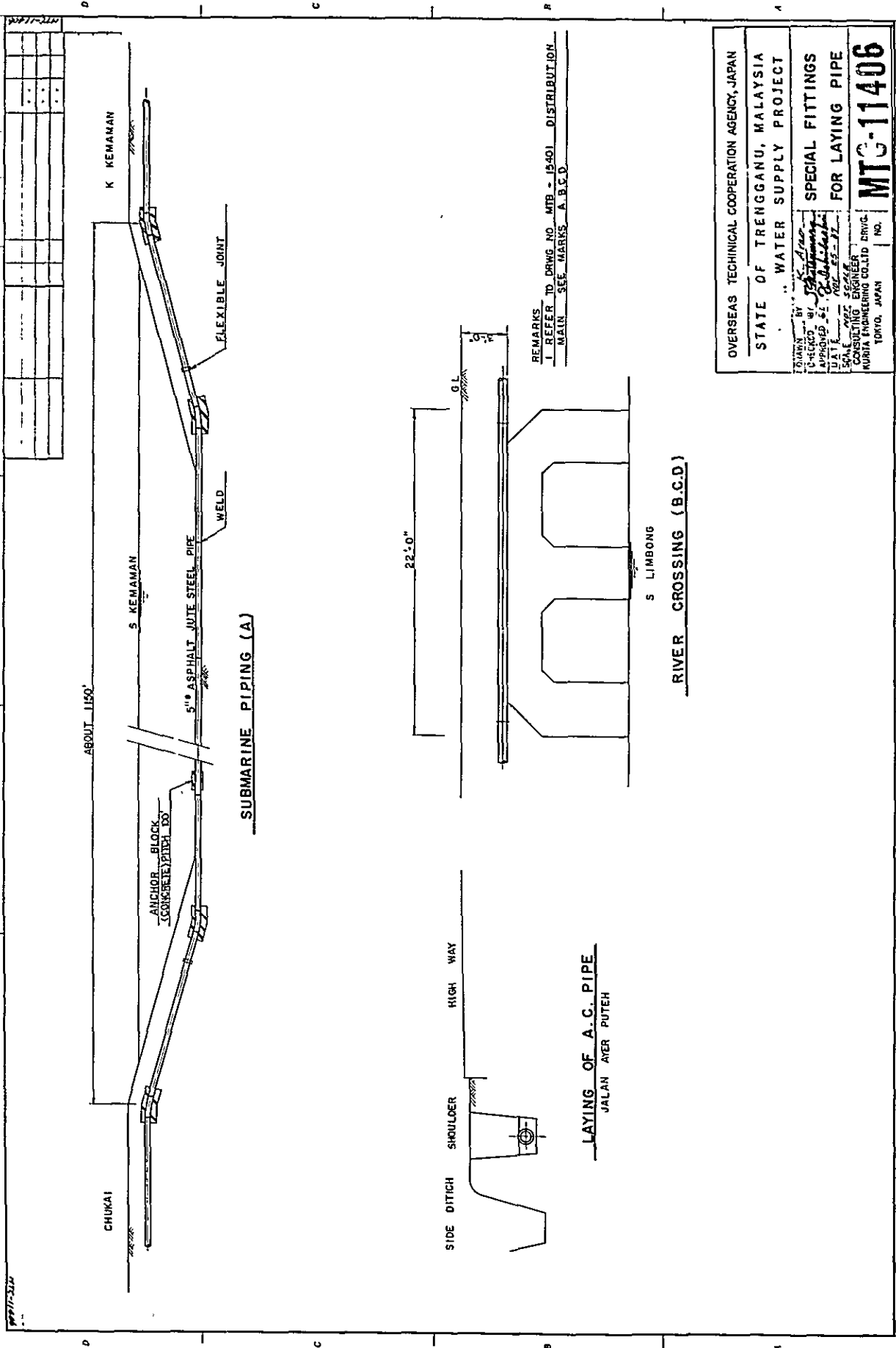
SCALE: *NOT SCALE*

CONSULTING ENGINEER: *KURITA ENGINEERING CO. LTD.*

TOKYO, JAPAN

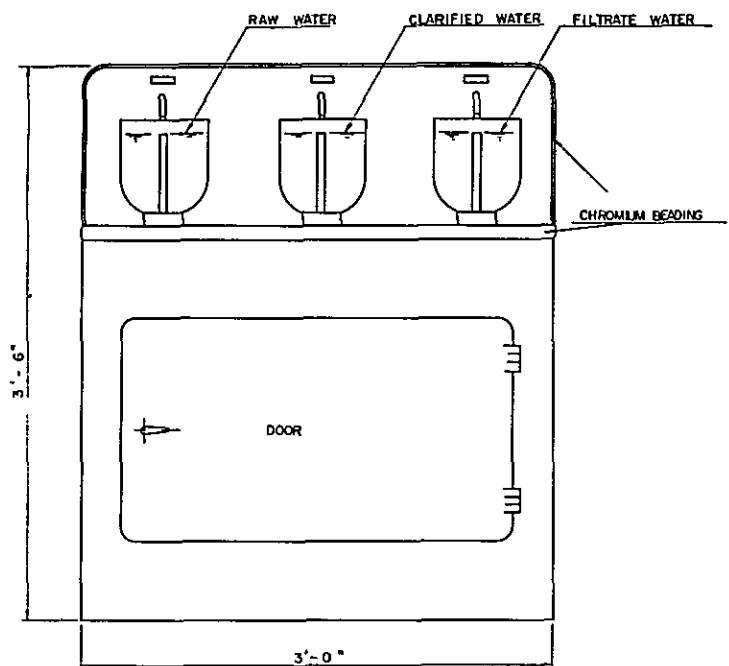
STANDARD DRWG. FOR VALVE BOX, HYDRANT etc.

NO. **MTE-15417**

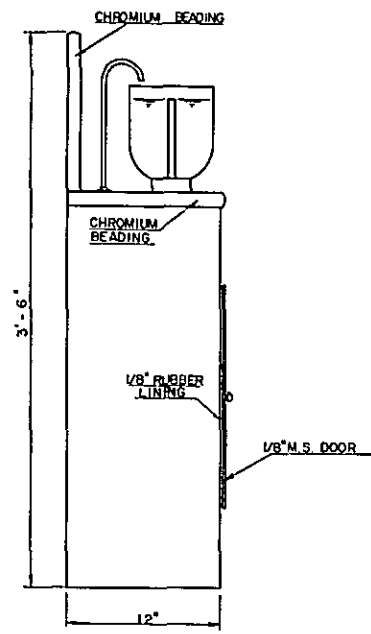


OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
WATER SUPPLY PROJECT	
DESIGNED BY: <i>S. Limbong</i>	SPECIAL FITTINGS FOR LAYING PIPE
APPROVED BY: <i>S. Limbong</i>	
DATE: <i>NOV 55-11</i>	MTG-11406
SCALE: <i>AS SHOWN</i>	
CONSULTING ENGINEER MURITA ENGINEERING CO. LTD. DRNG. TOKYO, JAPAN	

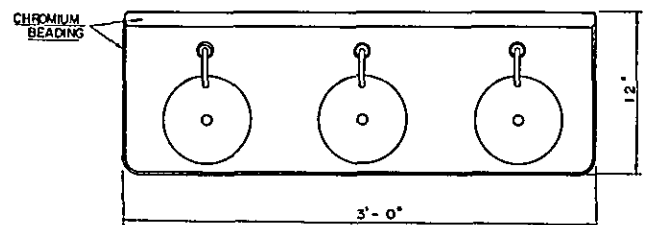
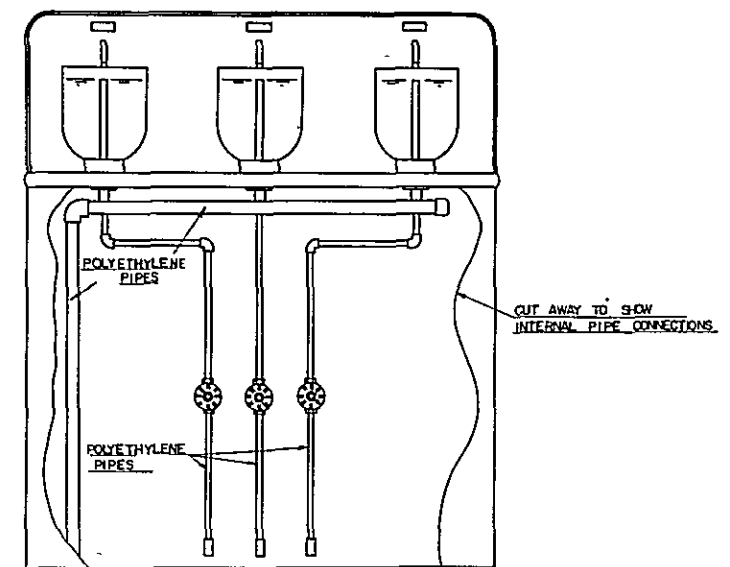
SPPS-2111



FRONT VIEW



SIDE VIEW

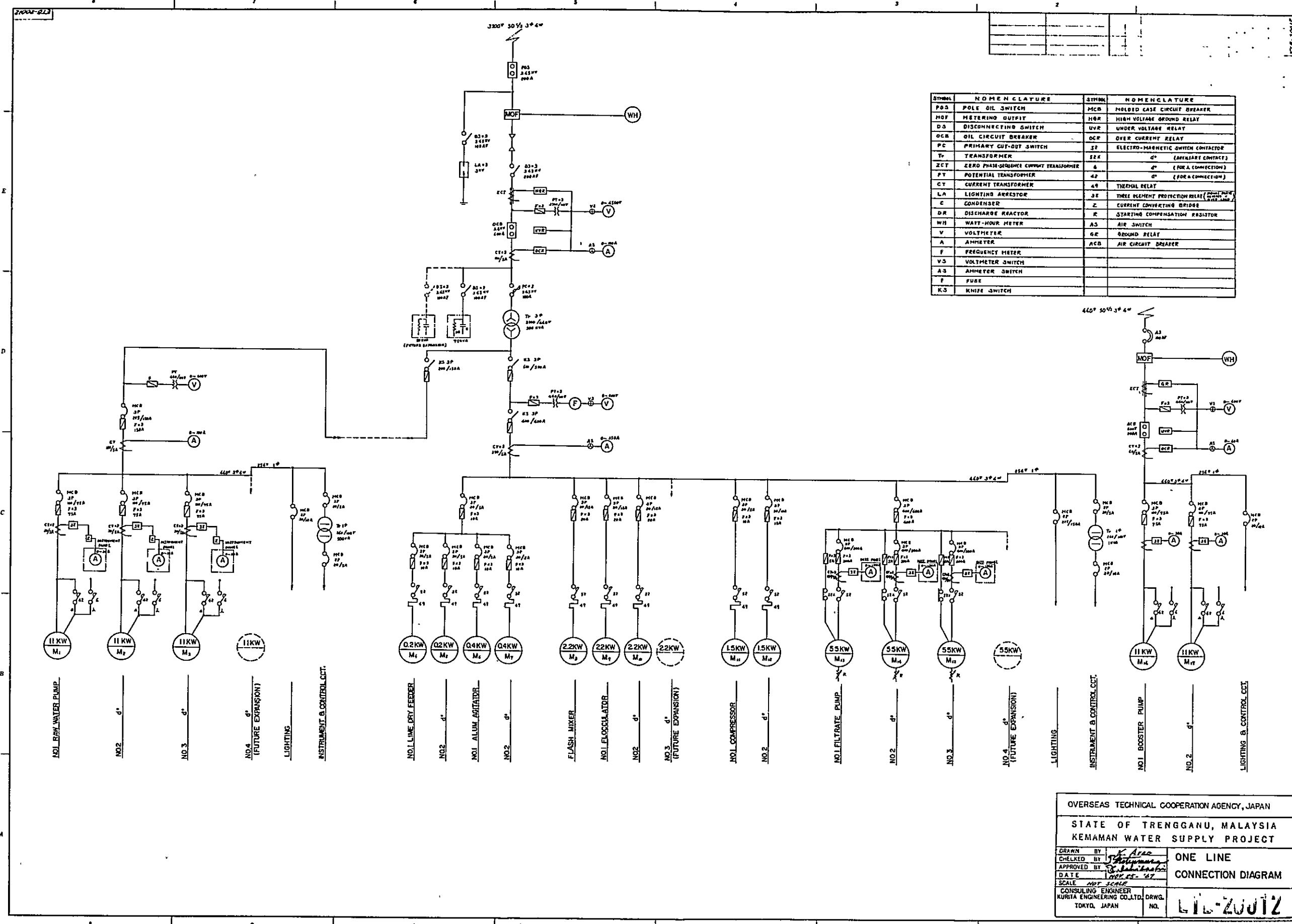


PLAN

NOTES

- 1 MATERIAL OF CONSOLE TO BE 1/8" M.S. SHEET AND STIFFENED WHERE NECESSARY WITH M.S. ANGLE
- 2 EXTERIOR - TO ANY B.O.B. COLOUR
- 3 INTERIOR - WHITE ENAMEL
- 4 CHROMIUM BEADING
- 5 CONSOLE TO BE PROVIDED WITH FRONT BACK OR 3/8" BRACES TO MEET CUSTOMERS REQUIREMENTS

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA	
KENAMAH WATER SUPPLY PROJECT	
DRAWN BY <i>K. Acoo</i>	CLARITY BOWL CONSOLE
CHECKED BY <i>S. Rahman</i>	
APPROVED BY <i>S. Subramaniam</i>	
DATE <i>Nov 25-57</i>	
SCALE <i>1/8" = 1'-0"</i>	
CONSULTING ENGINEER	
KURITA ENGINEERING CO., LTD. DRWG.	
TOKYO, JAPAN	
NO	MTC-15445



SYMBOL	NOMENCLATURE	SYMBOL	NOMENCLATURE
POS	POLE OIL SWITCH	MCCB	MOLDED CASE CIRCUIT BREAKER
MGT	METERING GUNIT	HVR	HIGH VOLTAGE GROUND RELAY
DS	DISCONNECTING SWITCH	UVR	UNDER VOLTAGE RELAY
OCB	OIL CIRCUIT BREAKER	OCR	OVER CURRENT RELAY
PC	PRIMARY CUT-OUT SWITCH	SR	ELECTRO-MAGNETIC SWITCH CONTACTOR
TR	TRANSFORMER	SR	SOLENOID RELAY (SOLENOID CONTACT)
ZCT	ZERO PHAS-SEQUENCE CURRENT TRANSFORMER	6	(FOR A CONNECTION)
PT	POTENTIAL TRANSFORMER	4.2	(FOR A CONNECTION)
CT	CURRENT TRANSFORMER	4.9	THERMAL RELAY
LA	LIGHTNING ARRESTOR	3E	THREE ELEMENT PROTECTION RELAY (THREE PHASE)
C	CONDENSER	Z	CURRENT CONVERTING BRIDGE
DR	DISCHARGE REACTOR	R	STARTING COMPENSATION RESISTOR
WH	WATT-HOUR METER	AS	AIR SWITCH
A	AMMETER	GR	GROUND RELAY
F	FUSE	ACB	AIR CIRCUIT BREAKER
KS	KNIFE SWITCH		

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA
KEMAMAN WATER SUPPLY PROJECT

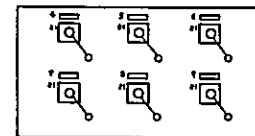
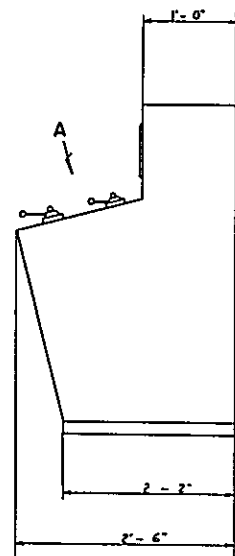
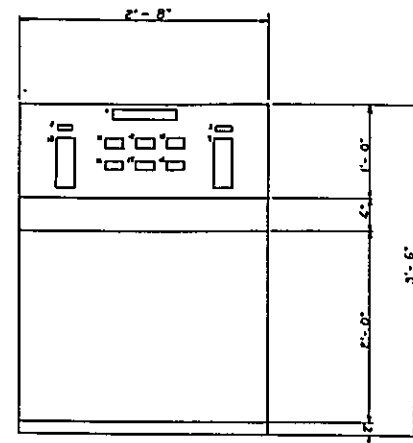
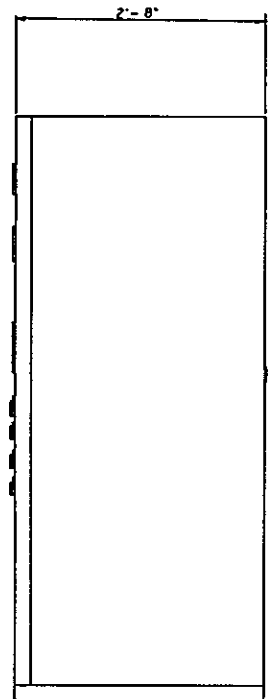
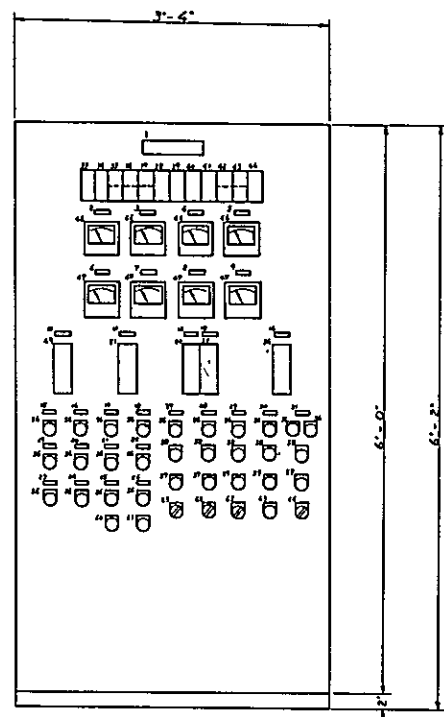
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CHECKED BY: *[Signature]*
APPROVED BY: *[Signature]*
DATE: 20.02.67
SCALE: NOT SCALE

CONSULTING ENGINEER
KURITA ENGINEERING CO., LTD.
TOKYO, JAPAN

DRWG. NO. **L16-2001Z**

ONE LINE CONNECTION DIAGRAM

ETB-20013



A' VIEW

- 1) COLOURED ITEMS DENOTE THE PARTS AND INSTRUMENTS TO BE INSTALLED AT THE FUTURE EXPANSION AND THESE PARTS ARE BOUNDED WITH PIECES OF STEEL PLATES. ALL NAME PLATES HAVE BEEN ATTACHED.
- 2) THICKNESS OF THE PLATE : 3/8" FOR MOUNTING PLATE
1/4" FOR OTHER PART
- 3) REQUIRED NO. 1 SET
- 4) COLOUR FINISH - OUTSIDE
INSIDE

- 1) THICKNESS OF THE PLATE : 1/4" OVERALL
- 2) REQUIRED NO. 3 : TOTAL 3 SET FOR FILTERS NO.1 TO NO.3; 1 SET FOR EACH
- 3) COLOUR FINISH - OUTSIDE
INSIDE

NO	QTY	DESCRIPTION	SPECIFICATIONS	ENGRAVED LETTERS	REMARKS	NO	QTY	DESCRIPTION	SPECIFICATIONS	ENGRAVED LETTERS	REMARKS
1	1	NAME PLATE		INSTRUMENT PANEL		23	1	ANNUNCIATING LAMP	Ø 1 1/2" GREEN	AIR FAILURE	
2	1			RAW WATER PUMP		24	1			SEWAGE OVERFLO	
3	1			NO.1		25	1			FILTRATE TIME METER LEVEL	
4	1			NO.2	FUTURE EXPANSION	26	1			NO.1 BACKWASH WATER LEVEL	FUTURE EXPANSION
5	1			NO.3		27	1			NO.2	
6	1			NO.1 FILTRATE PUMP		28	1			NO.1 FILTER HEADS LOCKING	
7	1			NO.2		29	1			NO.2	
8	1			NO.3		30	1			NO.3	
9	1			NO.4	FUTURE EXPANSION	31	1			NO.4	FUTURE EXPANSION
10	1			SEWAGE DETECTION		32	1			HEAD TIME METER LEVEL	
11	1			FILTRATE TANK WATER LEVEL		33	1			FILTRATE TANK PH	
12	1			NO.1 BACKWASH WATER LEVEL		34	1			CHLORINE BOMB SHIPPY	
13	1			NO.2	FUTURE EXPANSION	35	1				
14	1			FILTRATE TANK PH		36	3	ANNE TOR	Ø-20A 24VDC		
15	1			FLASH MIDER		37	3		Ø-12A 24VDC		
16	1			NO.1 FLUORATOR		38	1				
17	1			NO.2		39	1	SEWAGE INDICATOR	Ø-20 24VDC		
18	1			NO.3	FUTURE EXPANSION	40	1				
19	1			NO.1 LOW OIL PUMPER		41	1	LEVEL INDICATOR	Ø-12 FT		
20	1			NO.2		42	1		Ø-12 FT		
21	1			NO.1 ALARM INDICATOR		43	1				
22	1			NO.2		44	1	PH INDICATOR	Ø-14 PH		
23	1			NO.3		45	1				
24	1			NO.1 FILTRATE PUMP		46	1				
25	1			NO.2		47	1	INDICATING LAMP	Ø 1 1/2" RED	WARNING	
26	1			NO.3		48	1				
27	1			NO.4	FUTURE EXPANSION	49	4	POWERBUTTON SWITCH	BLACK	ON	
28	1			NO.1 RAW WATER METER PUMP		50	4		RED	OFF	
29	1			NO.2		51	1		GREEN	LAMP TEST	
30	1			NO.3		52	1		RED	QUIZTER OFF	
31	1			NO.4	FUTURE EXPANSION	53	4	SELECT SWITCH	5 POSITION	MAN STOP AUTO	
32	1			COMPRESSOR		54	4		Ø 1/2"	NO.1 - NO.2	

NO	QTY	DESCRIPTION	SPECIFICATIONS	ENGRAVED LETTERS	REMARKS
1	1	NAME PLATE		FILTER CONTROL PANEL	
2	1			HEAD LOSS	
3	1			OUTLET FLOW	
4	1			RAW WATER INLET VALVE	
5	1			FILTRATE OUTLET VALVE	
6	1			SURFACE WASH WATER VALVE	
7	1			BACK WASH WATER VALVE	
8	1			RAW WATER OUTLET VALVE	
9	1			BLOW VALVE	
10	1				
11	1	INDICATING LAMP	Ø 1 1/2" RED	RAW WATER INLET VALVE	
12	1			FILTRATE OUTLET VALVE	
13	1			BACK WASH WATER VALVE	
14	1			RAW WATER INLET VALVE	
15	1			RAW WATER OUTLET VALVE	
16	1			BLOW VALVE	
17	1				
18	1	DIFFERENTIAL PRESSURE INDICATOR	Ø-10 FT		
19	1	FLOW INDICATOR	Ø-10 24VDC		
20	1				
21	1	POWER METER GAGE		CLASS - 0.5%	
22	1				

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA
KEMAMAN WATER SUPPLY PROJECT

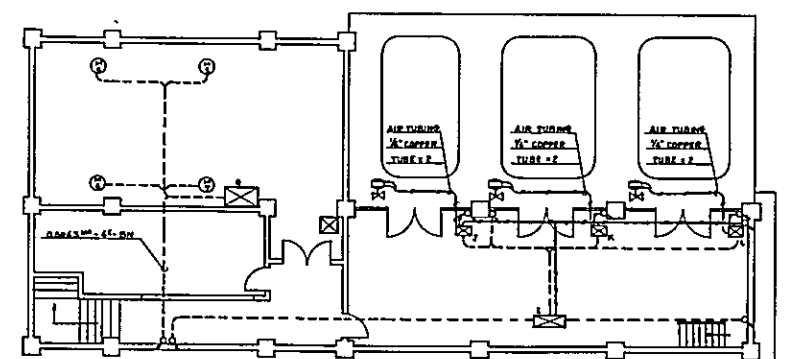
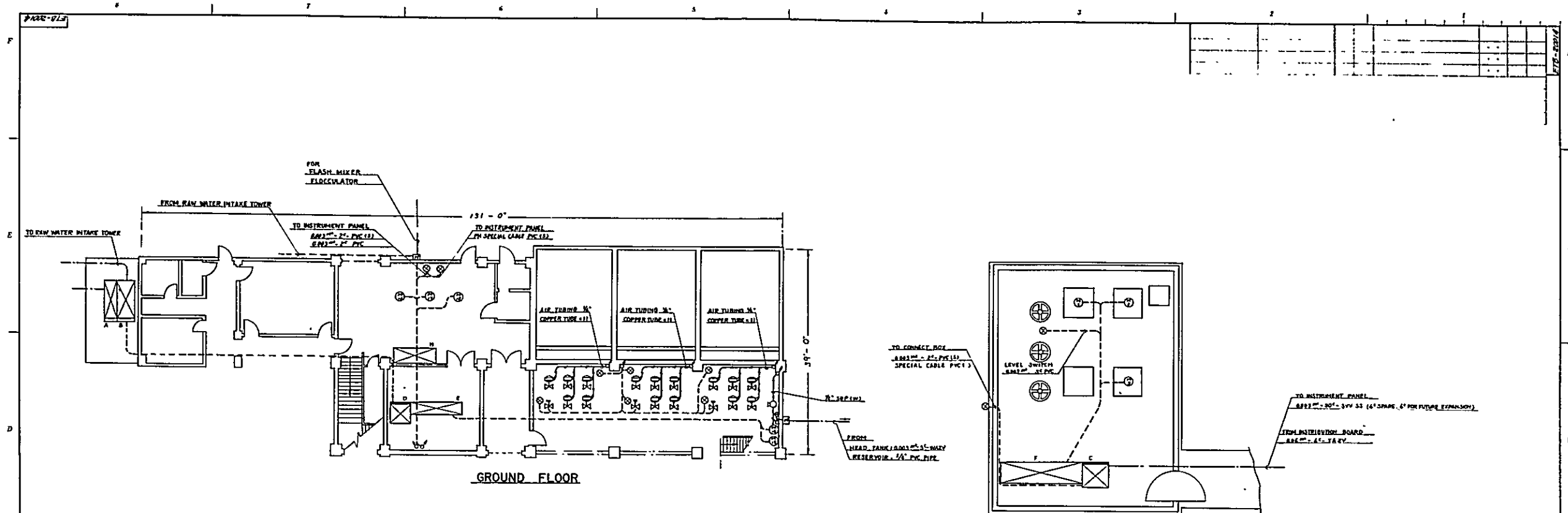
DRAWN BY: *[Signature]*
CHECKED BY: *[Signature]*
APPROVED BY: *[Signature]*
DATE: *10/12/87*

SCALE: 1/4" = 1'

CONSULTING ENGINEER
KURITA ENGINEERING CO., LTD. DRWG.
TOKYO, JAPAN

INSTRUMENT PANEL
FILTER CONTROL PANEL

ETB-20013



SYMBOL	NO/NAME	TYPE	CAPACITY	CABLE & CONDUIT PIPE	REMARKS	SYMBOL	NO/NAME	CAPACITY	CABLE & CONDUIT PIPE	REMARKS
(1)	NO. 1	RAW WATER PUMP	11 HP	(1.627)" ² - 4" - BH (1.7) 2 x 2		(1)	COMBINATION STARTER		(1.627)" ² - 4" - BH (1.6) 2 x 2	
(2)	NO. 2	"	4"	4"		(2)	"		(1.19)" ² - 4" - BH (1.6) 2 x 2	
(3)	NO. 3	"	4"	4"		(3)	"		(1.627)" ² - 4" - BH (1.6) 2 x 2	
(4)	NO. 1	LINE DRY FEEDER	0.25 HP	(0.0029)" ² - 4" - BH (1.6) 2 x 2		(4)	INSTRUMENT PANEL		(1.627)" ² - 4" - BH (1.6) 2 x 2	
(5)	NO. 2	"	4"	4"		(5)	FLOW CONTROL PANEL		(0.0029)" ² - 4" - BH (1.6) 2 x 2	
(6)	NO. 1	ALUM. ARBITRATOR	1.5 HP	4"		(6)	NO. 1	4"	4"	
(7)	NO. 2	"	4"	4"		(7)	NO. 2	4"	4"	
(8)	NO. 1	COMPRESSOR	1.5 HP	(1.627)" ² - 4" - BH (1.6) 2 x 2		(8)	AIR PIPING			
(9)	NO. 2	"	4"	4"		(9)	DETECTOR			
(10)	NO. 1	FILTRATE PUMP	0.25 HP	(1.627)" ² - 4" - BH (1.6) 2 x 2		(10)	HAND HOLE			
(11)	NO. 2	"	4"	4"		(11)	CABLE LINE			INSTALLED SHORTLY AFTER THE WORKING PERIODS OF THE PROJECT
(12)	NO. 3	"	4"	4"		(12)	REDUCING VALVE			
(13)	NO. 1	FLOW CONTROL VALVE				(13)	FLOW CONTROL VALVE			
(14)	NO. 2	"				(14)	"			
(15)	NO. 3	"				(15)	"			
(16)	NO. 1	TENSION BOARD	31V	(1.627)" ² - 4" - TABV		(16)	"			
(17)	NO. 2	TRANSFORMER BOARD				(17)	"			
(18)	NO. 3	INCOME BOARD				(18)	"			
(19)	NO. 4	DISTRIBUTION BOARD				(19)	"			
(20)	NO. 5	LOAD CENTER				(20)	"			

GENERAL NOTES FOR CABLES
 ALL CABLES ARE OF TYPICAL MULTICORE COPPER CONDUCTORS AND EXCLUSIVE OF 3/8" CABLE, THEY ARE OF 600V CLASS INSULATION TYPES. EACH CORE IN A CABLE HAS THE SAME NOMINAL CROSS SECTIONAL AREA.

DESCRIPTION OF CABLES
 1. RUBBER INSULATED CHLOROPRENE SHEATHED
 2. P.V.C. INSULATED AND SHEATHED
 3. PAPER INSULATED LEAD SHEATHED TAP ARMORED AND P.V.C. SHEATHED OVERALL
 4. P.V.C. INSULATED AND SHEATHED WITH STEEL SHEATHING OVERALL
 5. P.V.C. INSULATED AND SHEATHED WITH STEEL SHEATHING OVERALL

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN

STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

DRAWN BY: *K. Aida*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*
 DATE: *Nov 22-67*

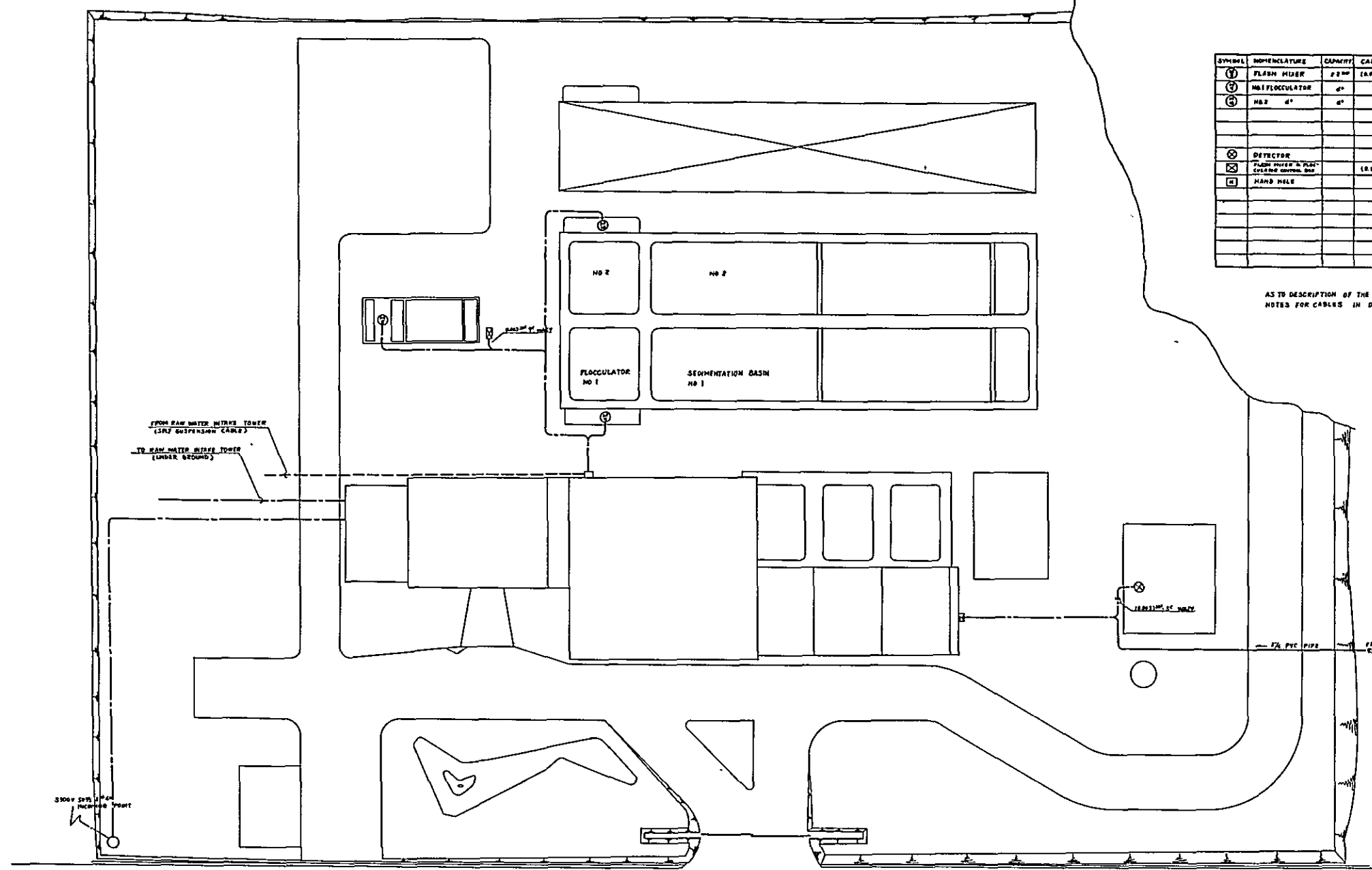
CABLING & PIPING PLAN

SCALE: 1" = 10'

CONSULTING ENGINEER
 KURITA ENGINEERING CO., LTD. DRNG.
 TOKYO, JAPAN

NO. **ETB-20014**

ETB-20015

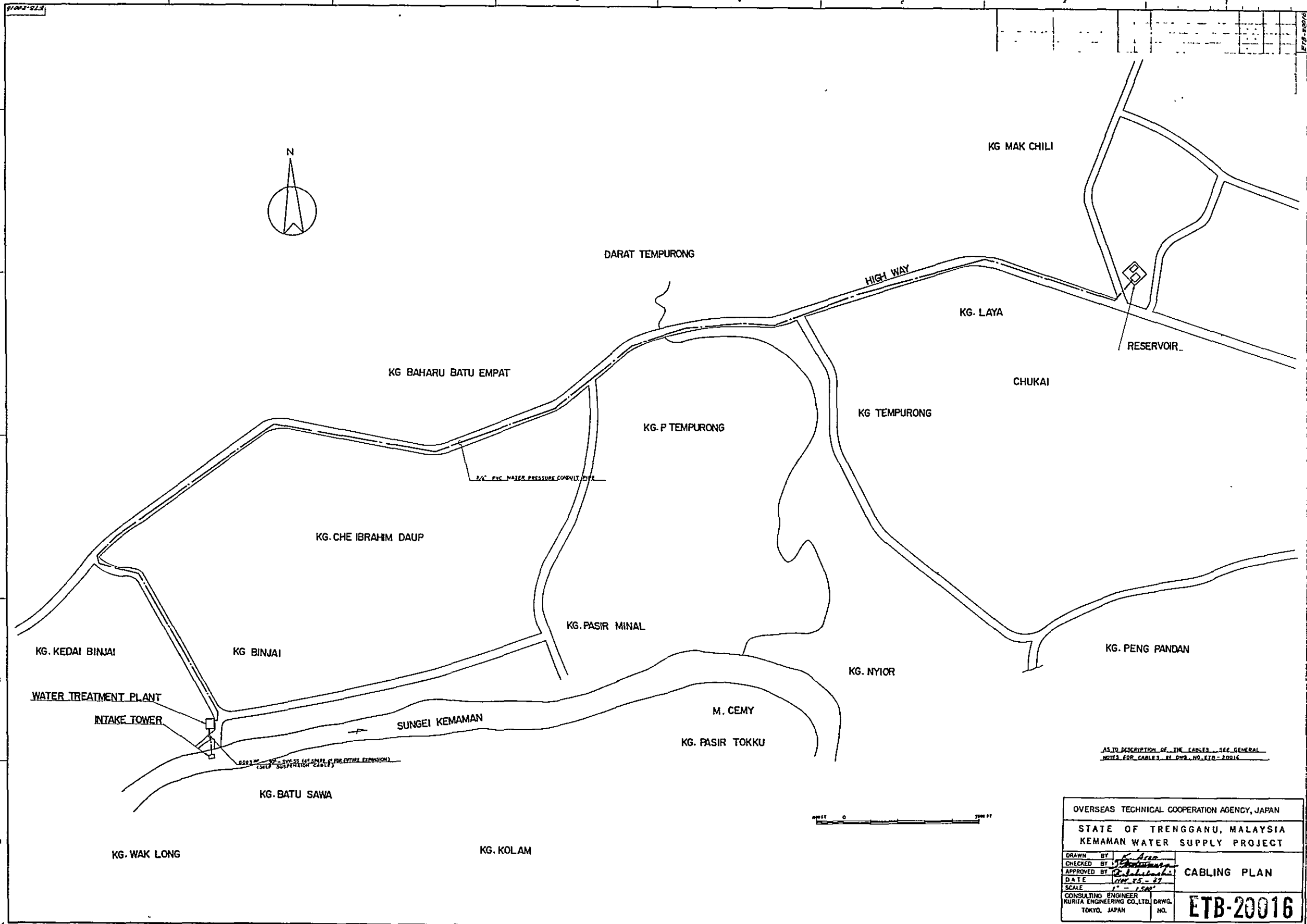


SYMBOL	NOMENCLATURE	CAPACITY	CABLE & CONDUIT PIPE	REMARKS
①	FLASH HLDR	2 2 mm	(6000) mm - 6" - TRF	
②	NO FLOCCULATOR	4"	4"	
③	NO 2	4"	4"	
④	DETECTOR			
⑤	FLASH HLDR & PUMP CONTROL SYSTEM SW		(6000) mm - 6" - TRF	
⑥	HAND HOLE			

AS TO DESCRIPTION OF THE CABLES, SEE GENERAL NOTES FOR CABLES IN DWG NO. ETB-20016

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN
 STATE OF TRENGGANU, MALAYSIA
 KEMAMAN WATER SUPPLY PROJECT

DRAWN BY	<i>[Signature]</i>	CABLING PLAN
CHECKED BY	<i>[Signature]</i>	
APPROVED BY	<i>[Signature]</i>	
DATE	2002.05.27	
SCALE	3/4" = 1'	
CONSULTING ENGINEER	KURITA ENGINEERING CO., LTD. DRWG. NO.	ETB-20015
	TOKYO, JAPAN	



AS TO DESCRIPTION OF THE CABLES, SEE GENERAL NOTES FOR CABLES IN DWG. NO. ETB-20016

OVERSEAS TECHNICAL COOPERATION AGENCY, JAPAN	
STATE OF TRENGGANU, MALAYSIA KEMAMAN WATER SUPPLY PROJECT	
DRAWN BY: <i>E. Arca</i>	CABLING PLAN
CHECKED BY: <i>[Signature]</i>	
APPROVED BY: <i>[Signature]</i>	
DATE: <i>1st Dec 87</i>	
SCALE: <i>1" = 1500'</i>	DRWG. NO. ETB-20016
CONSULTING ENGINEER KURITA ENGINEERING CO., LTD. TOKYO, JAPAN	

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Vertical text or markings located near the bottom center of the page.