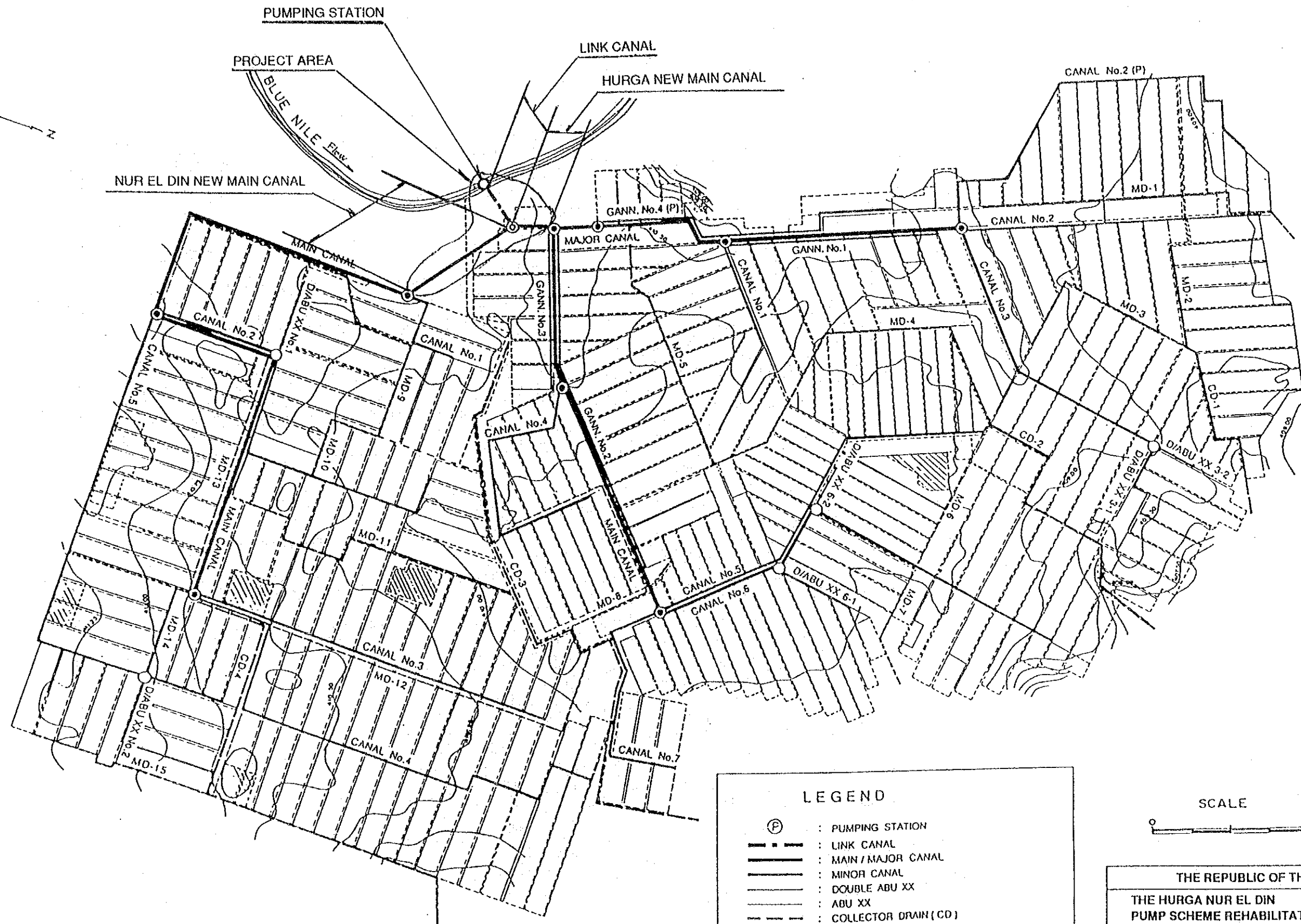


Drawings

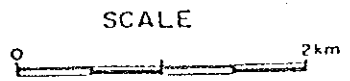
LIST OF DRAWINGS

Plate No.	DWG No.	Title of Drawings
GENERAL		
1	0001	LOCATION OF THE PROJECT
PUMPING STATION		
2	1001	GENERAL PLAN AND PROFILE
3	1002	PUMP LOCATION AND PLUMBING LAYOUT (1/2)
4	1003	PUMP LOCATION AND PLUMBING LAYOUT (2/2)
5	1004	WIRING FOR PUMP EQUIPMENT
6	1005	INLET PORTION AND PUMP ROOM
7	1006	PROTECTION STRUCTURE OF INLET PORTION (1/2)
8	1007	PROTECTION STRUCTURE OF INLET PORTION (2/2)
9	1008	SUB-STRUCTURE (1/2)
10	1009	SUB-STRUCTURE (2/2)
11	1010	SUPER-STRUCTURE (1/2)
12	1011	SUPER-STRUCTURE (2/2)
13	1012	STEP AND OTHER MISCELLANIOUS WORKS
POWER SUPPLY SYSTEM		
14	2001	GENERAL WORK
15	2002	RIVER CROSSING WORK
16	2003	OUTDOOR SUBSTATION
LINK CANAL AND NEW MAIN CANALS		
17	3001	GENERAL PLAN OF CANALS
18	3002	PROFILE OF LINK CANAL
19	3003	DISCHARGE OUTLET STRUCTURE
20	3004	SAND SETTLING BASIN STRUCTURE
21	3005	BIFURCATION STRUCTURE (1/2)
22	3006	BIFURCATION STRUCTURE (2/2)
23	3007	PROFILES OF NEW MAIN CANALS

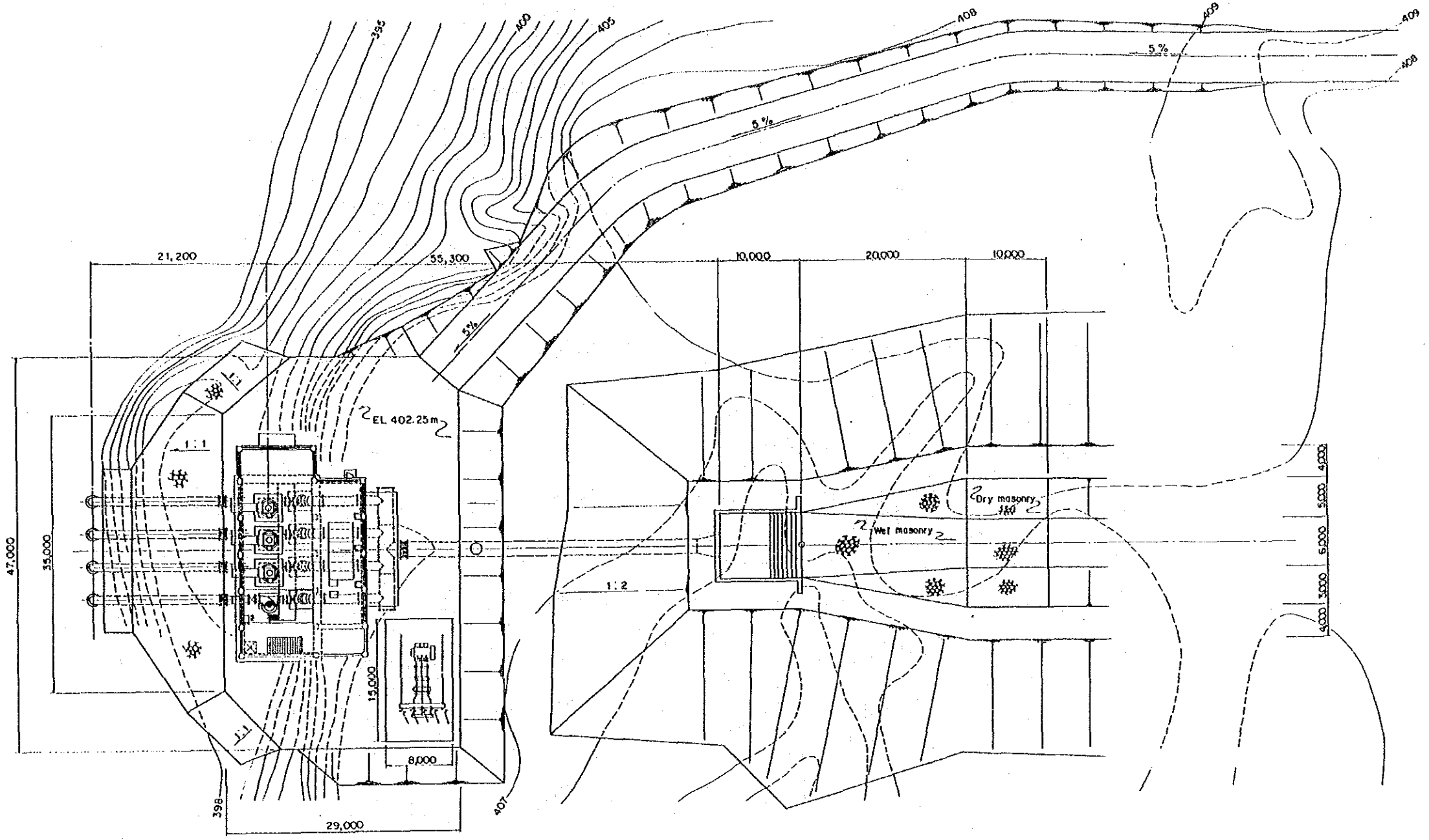


LEGEND

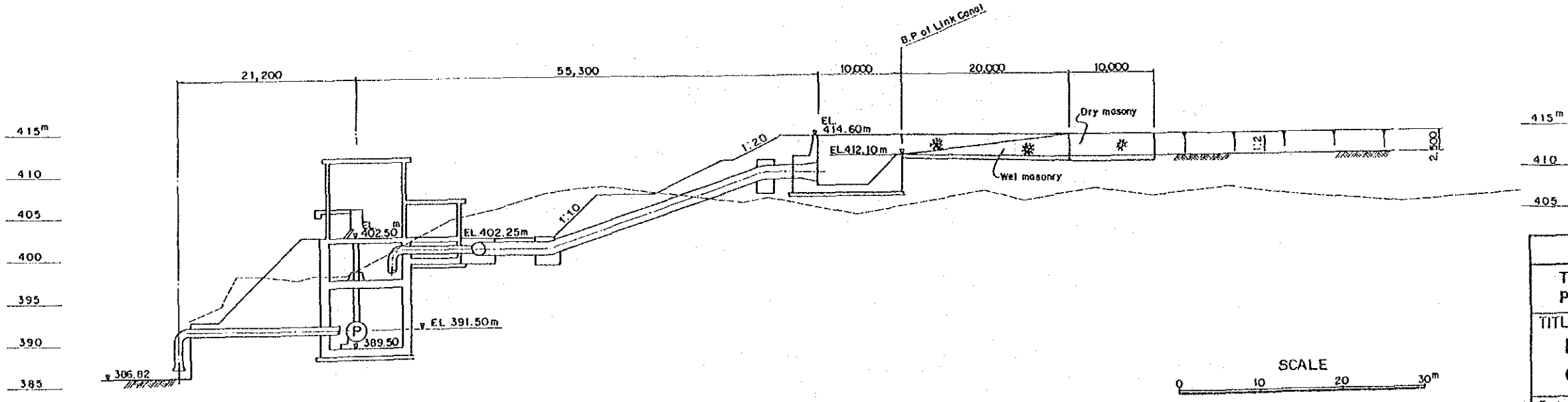
- ⊙ : PUMPING STATION
- · — : LINK CANAL
- — — : MAIN / MAJOR CANAL
- — — : MINOR CANAL
- — — : DOUBLE ABU XX
- — — : ABU XX
- · — : COLLECTOR DRAIN (CD)
- · — : MINOR DRAIN (MD)
- ⊙ : BIFURCATION
- ⊙ : HEAD REGULATOR (MOVABLE WEIR)
- ⊙ : HEAD REGULATOR (WELL HEAD REGULATOR)
- ▨ : VILLAGE



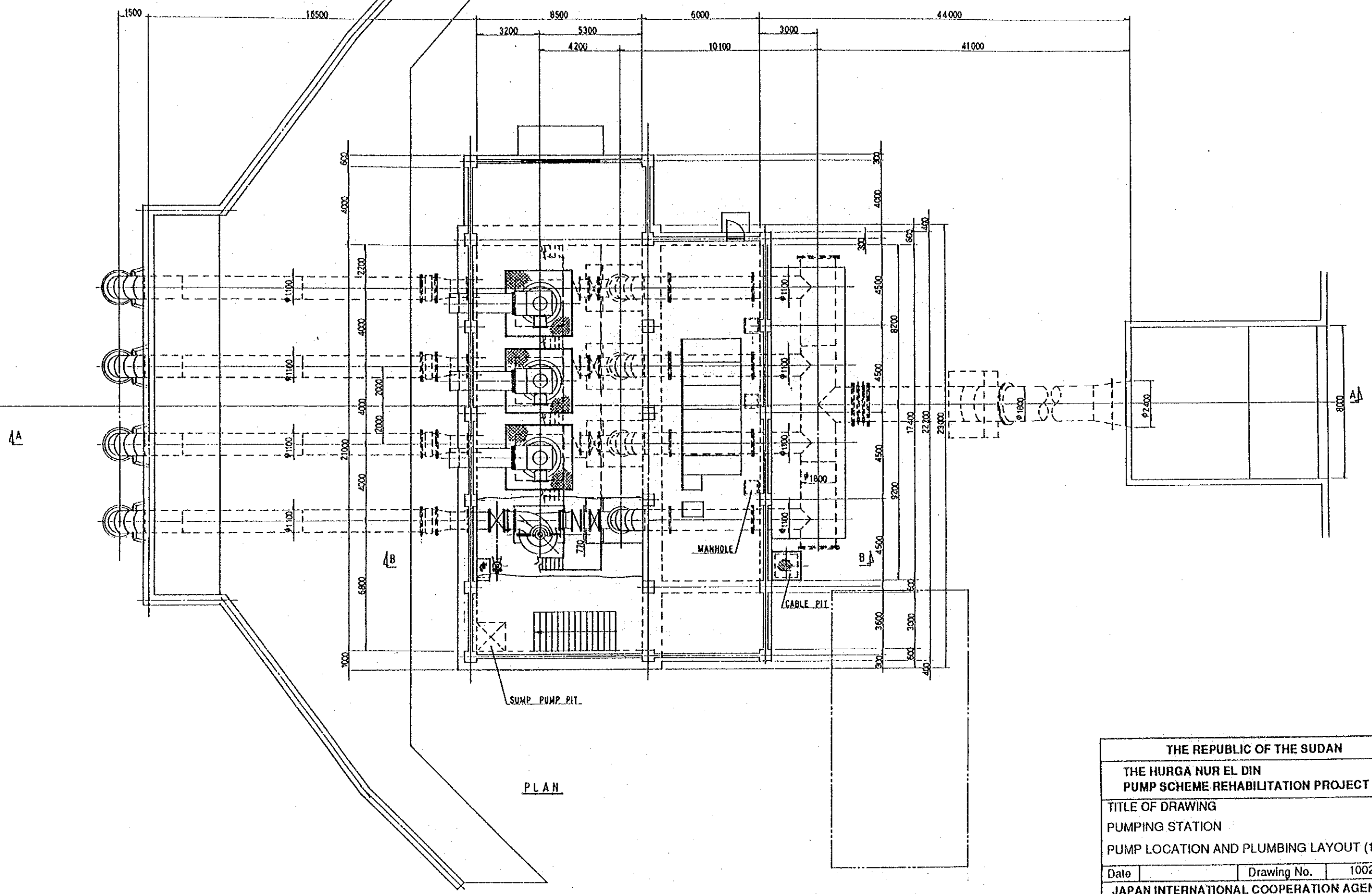
THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING GENERAL LOCATION OF THE PROJECT		
Date	Drawing No.	0001
JAPAN INTERNATIONAL COOPERATION AGENCY		



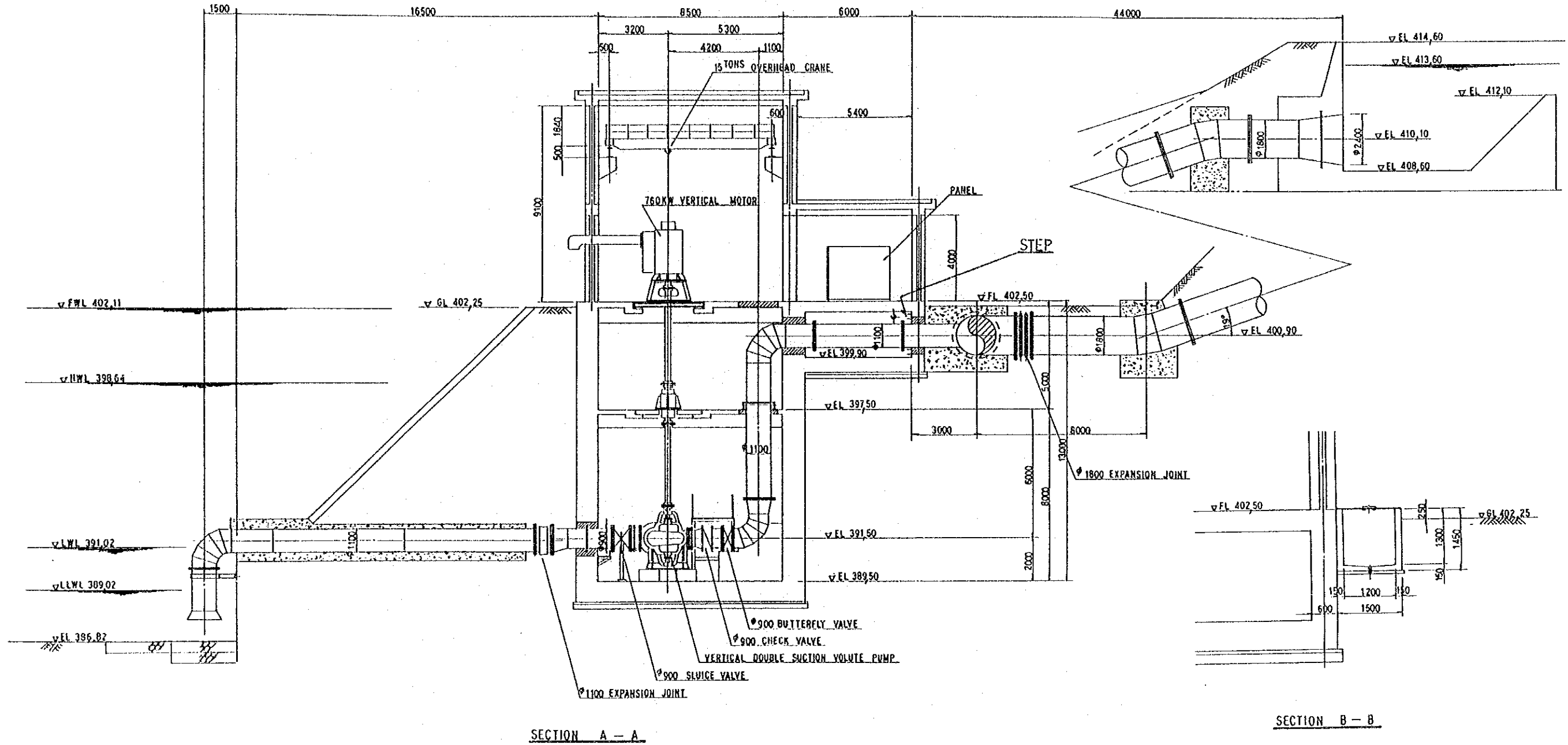
PLAN



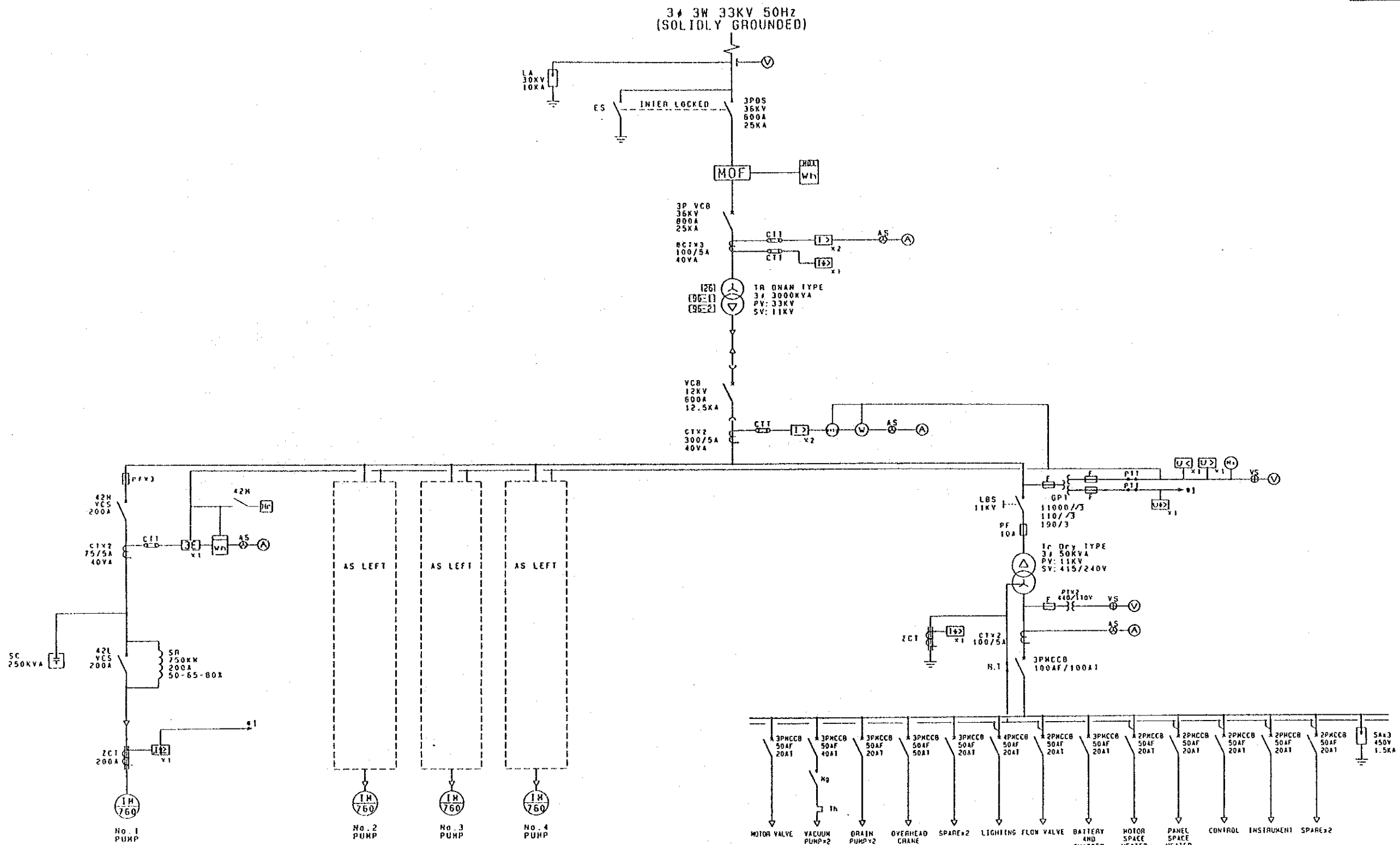
THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING PUMPING STATION GENERAL PLAN AND PROFILE			
Date		Drawing No.	1001
JAPAN INTERNATIONAL COOPERATION AGENCY			



THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING PUMPING STATION PUMP LOCATION AND PLUMBING LAYOUT (1/2)		
Date	Drawing No.	1002
JAPAN INTERNATIONAL COOPERATION AGENCY		



THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING PUMPING STATION PUMP LOCATION AND PLUMBING LAYOUT (2/2)		
Date	Drawing No.	1003
JAPAN INTERNATIONAL COOPERATION AGENCY		

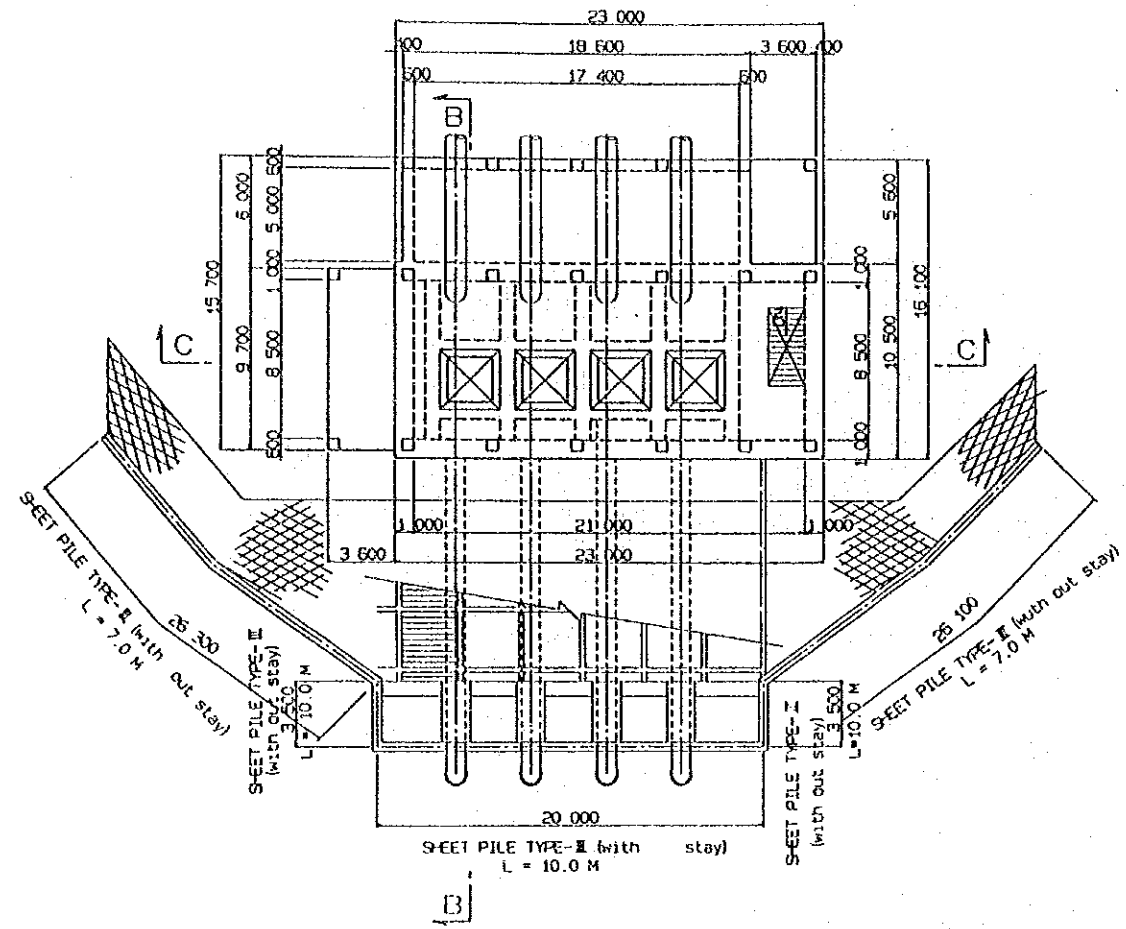


LEGEND

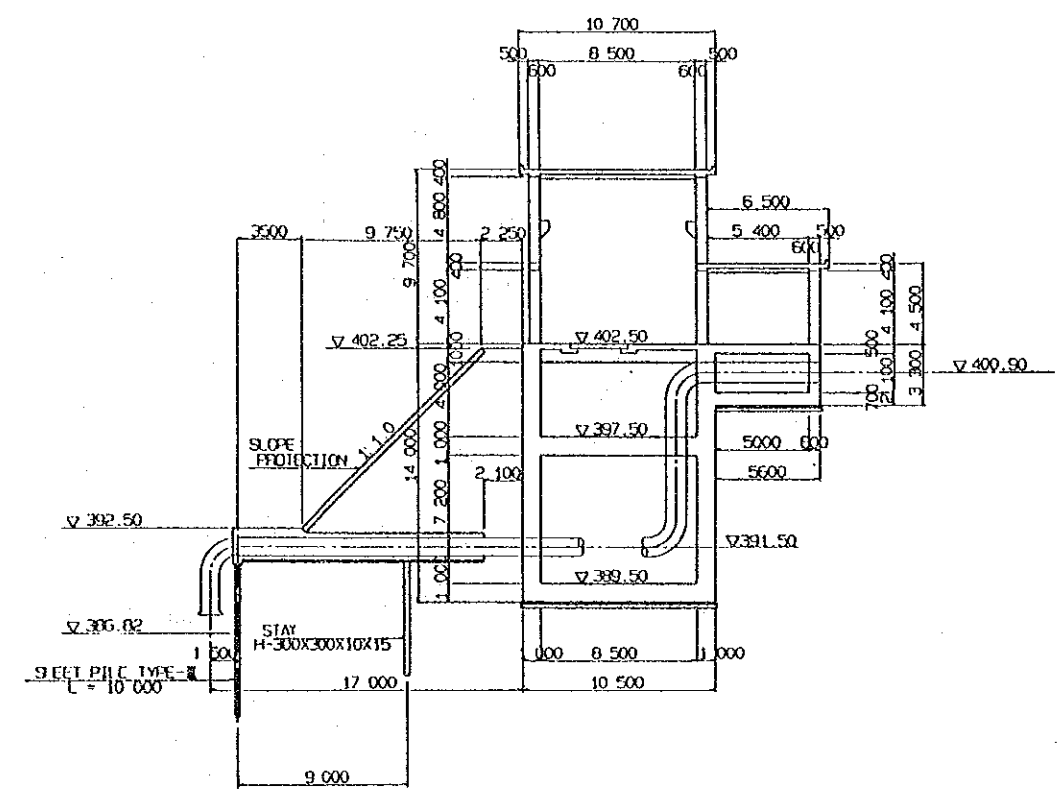
- | | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING PUMPING STATION WIRING FOR PUMP EQUIPMENT		
Date	Drawing No.	1004
JAPAN INTERNATIONAL COOPERATION AGENCY		

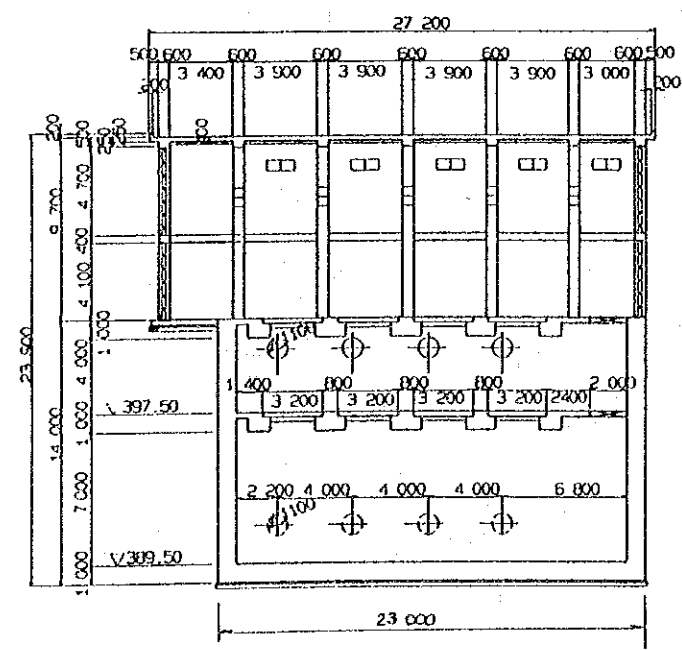
PLAN



SECTION B-B

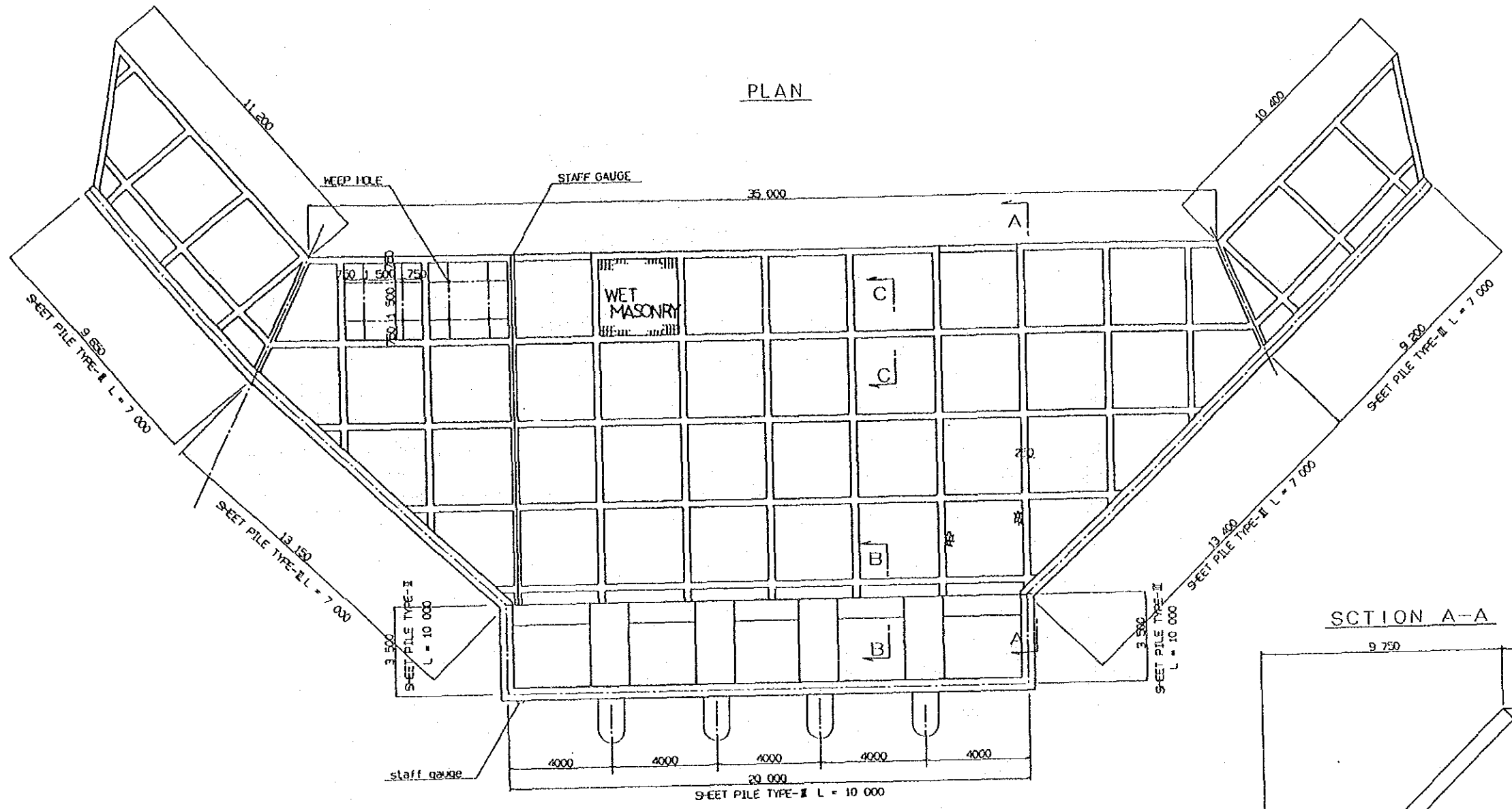


SECTION C-C

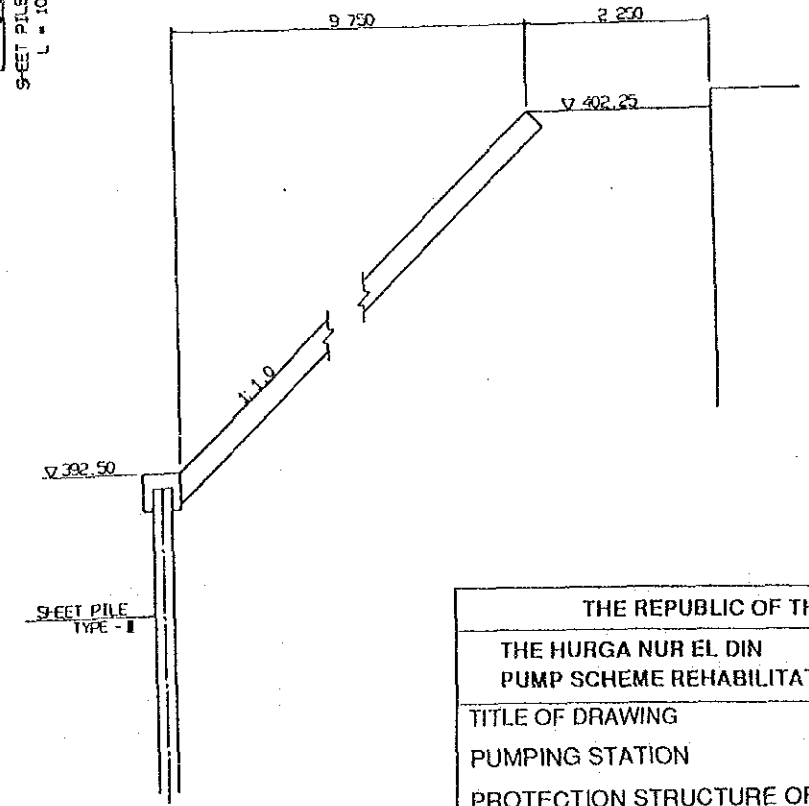


THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING PUMPING STATION INLET PORTION AND PUMP ROOM			
Date		Drawing No.	1005
JAPAN INTERNATIONAL COOPERATION AGENCY			

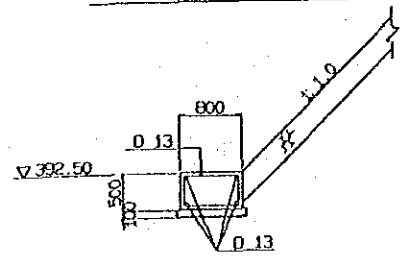
PLAN



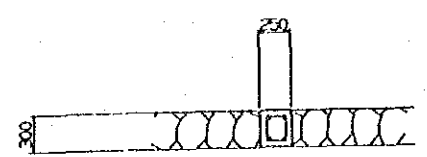
SECTION A-A



SECTION B-B

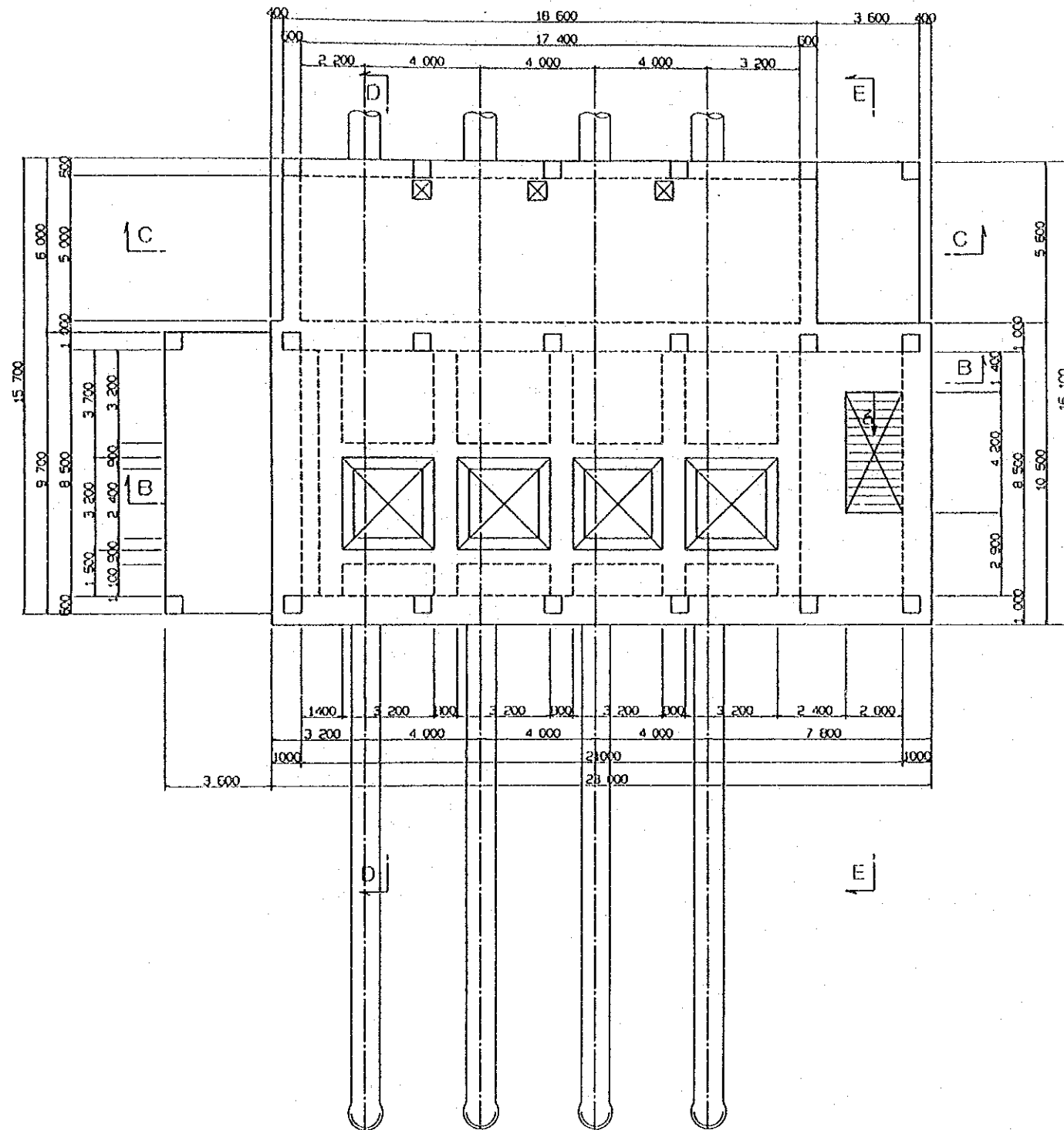


SECTION C-C

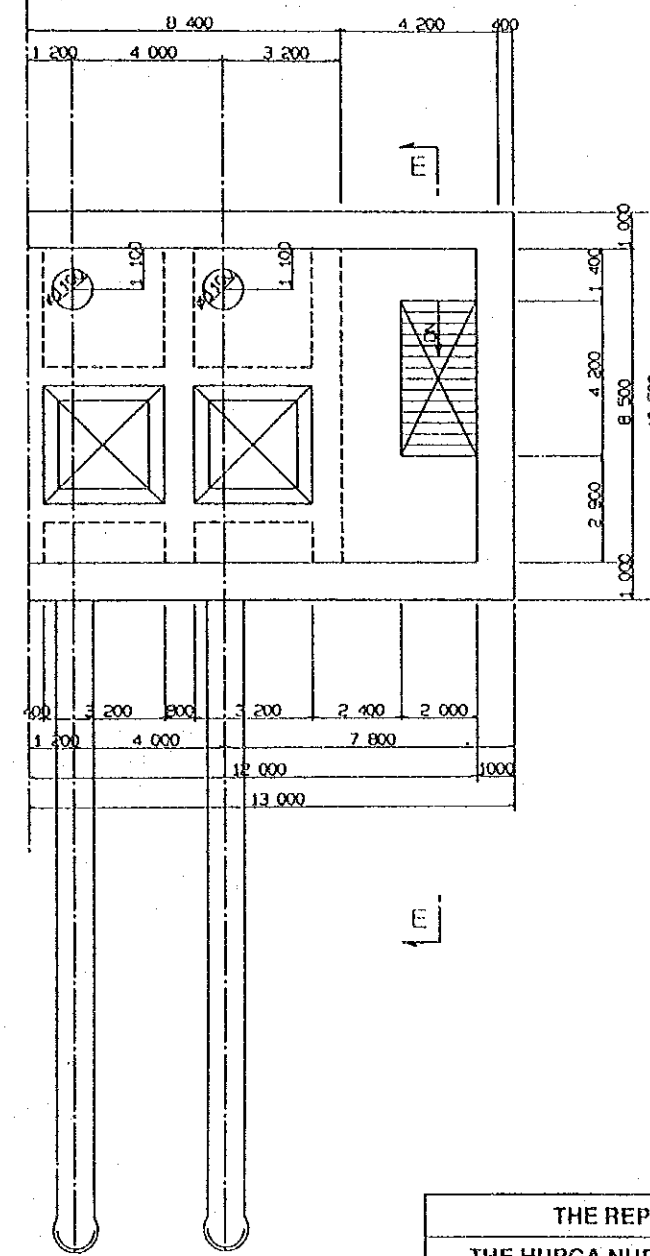


THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING		
PUMPING STATION		(1/2)
PROTECTION STRUCTURE OF INLET PORTION		
Date	Drawing No.	1006
JAPAN INTERNATIONAL COOPERATION AGENCY		

PLAN

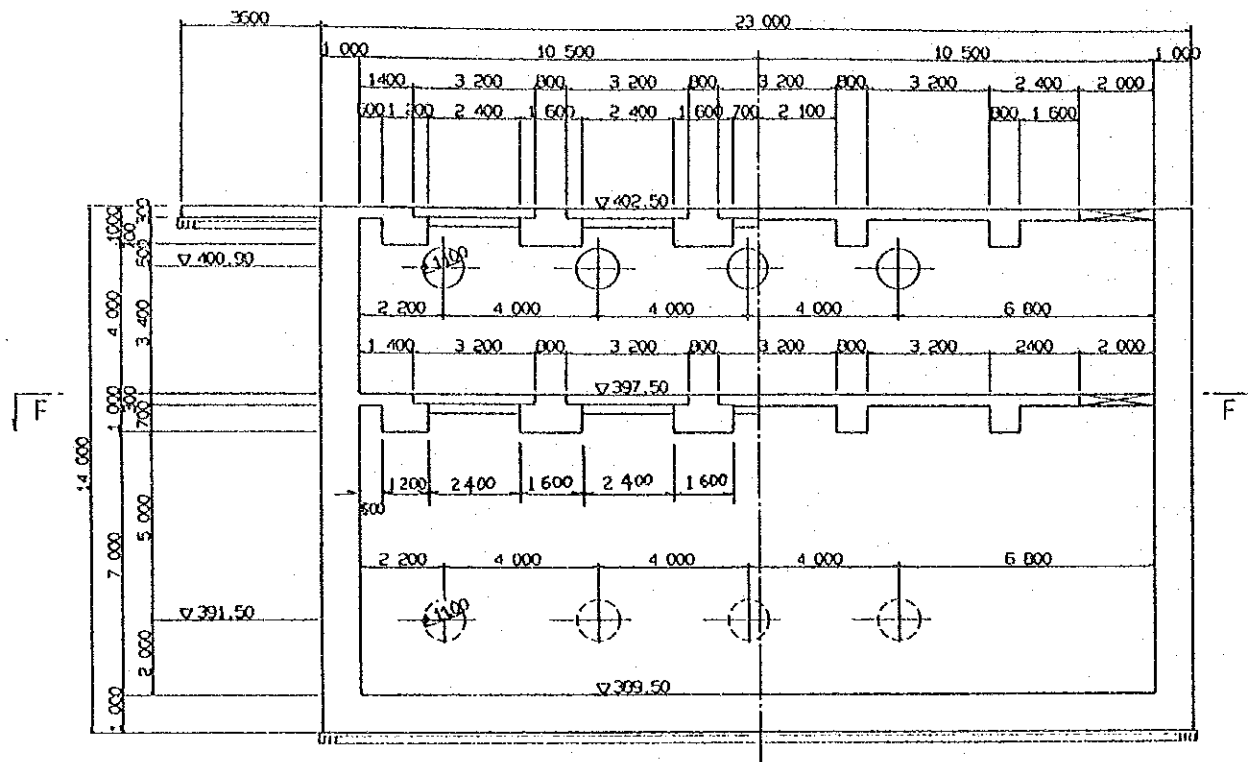


SECTION F-F

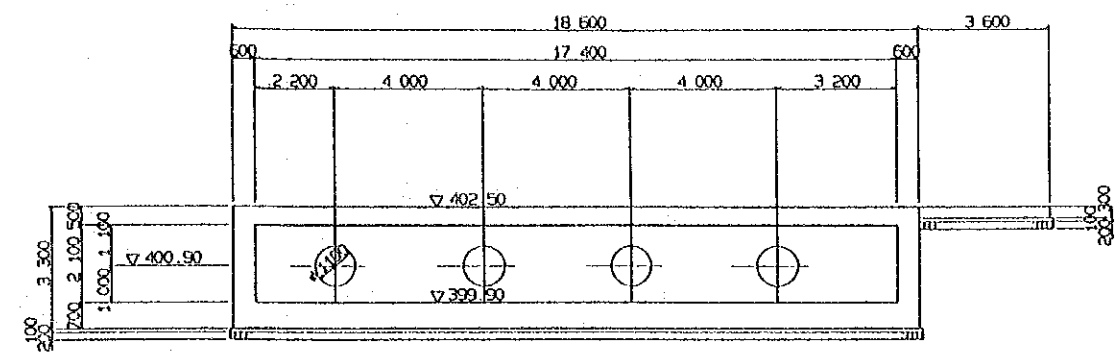


THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING PUMPING STATION SUB-STRUCTURE (1/2)			
Date		Drawing No.	1008
JAPAN INTERNATIONAL COOPERATION AGENCY			

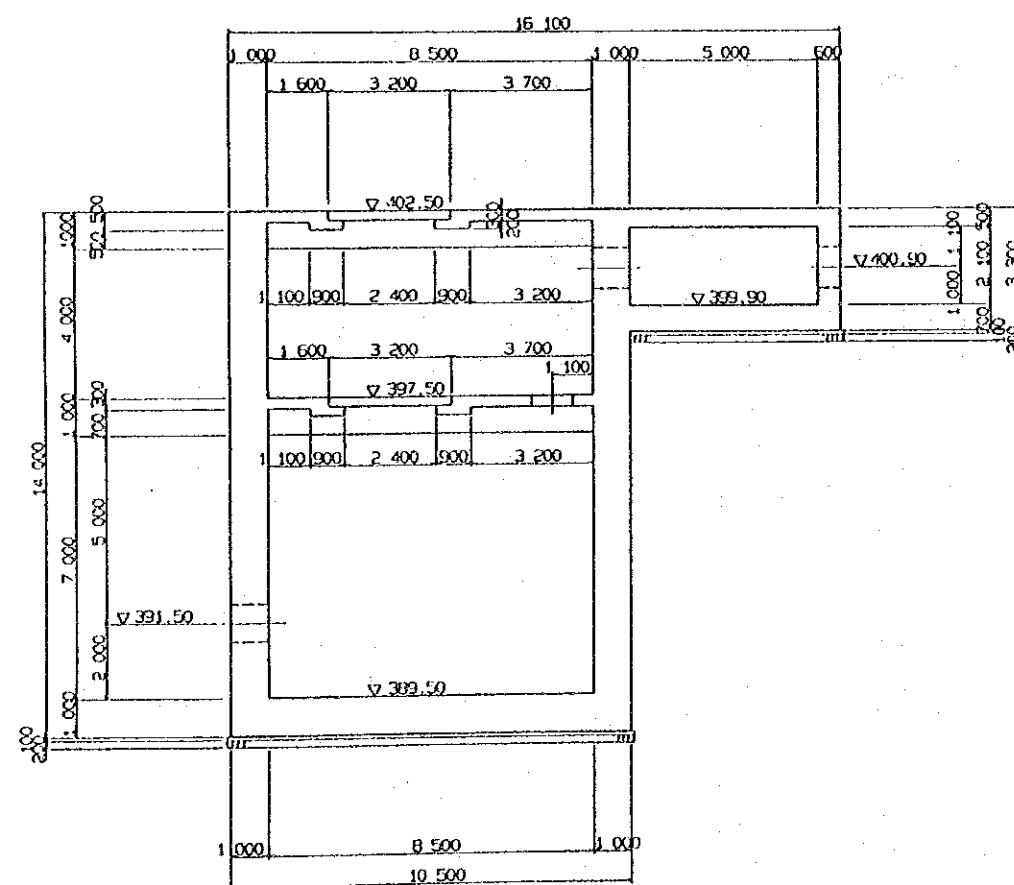
SECTION B-B



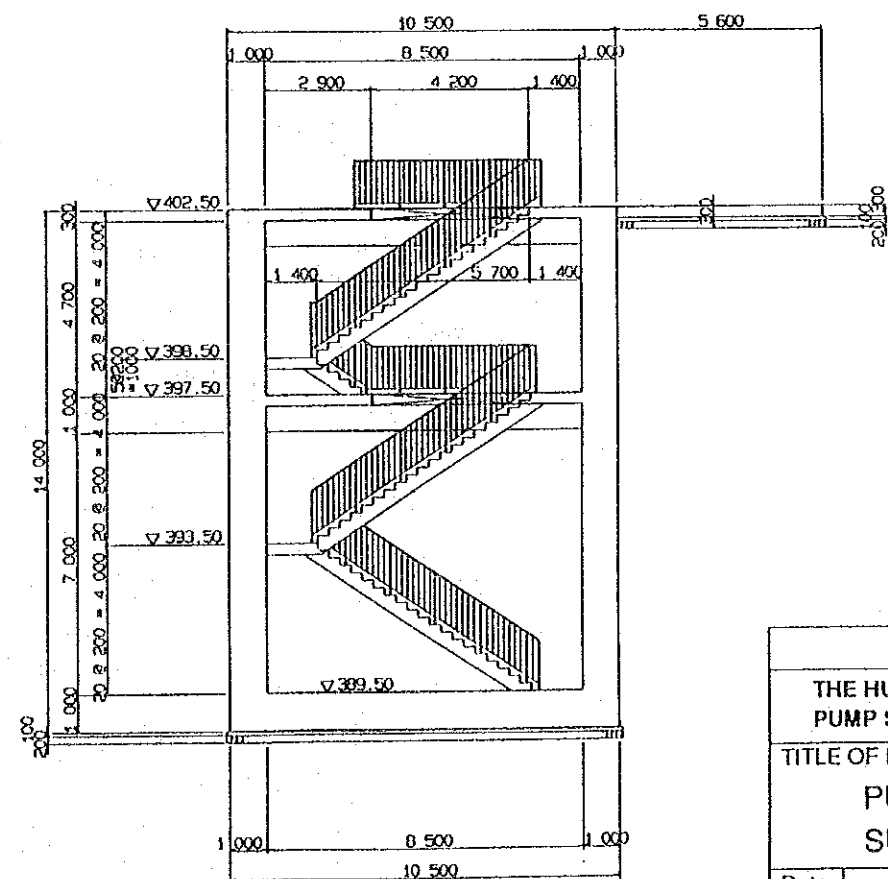
SECTION C-C



SECTION D-D

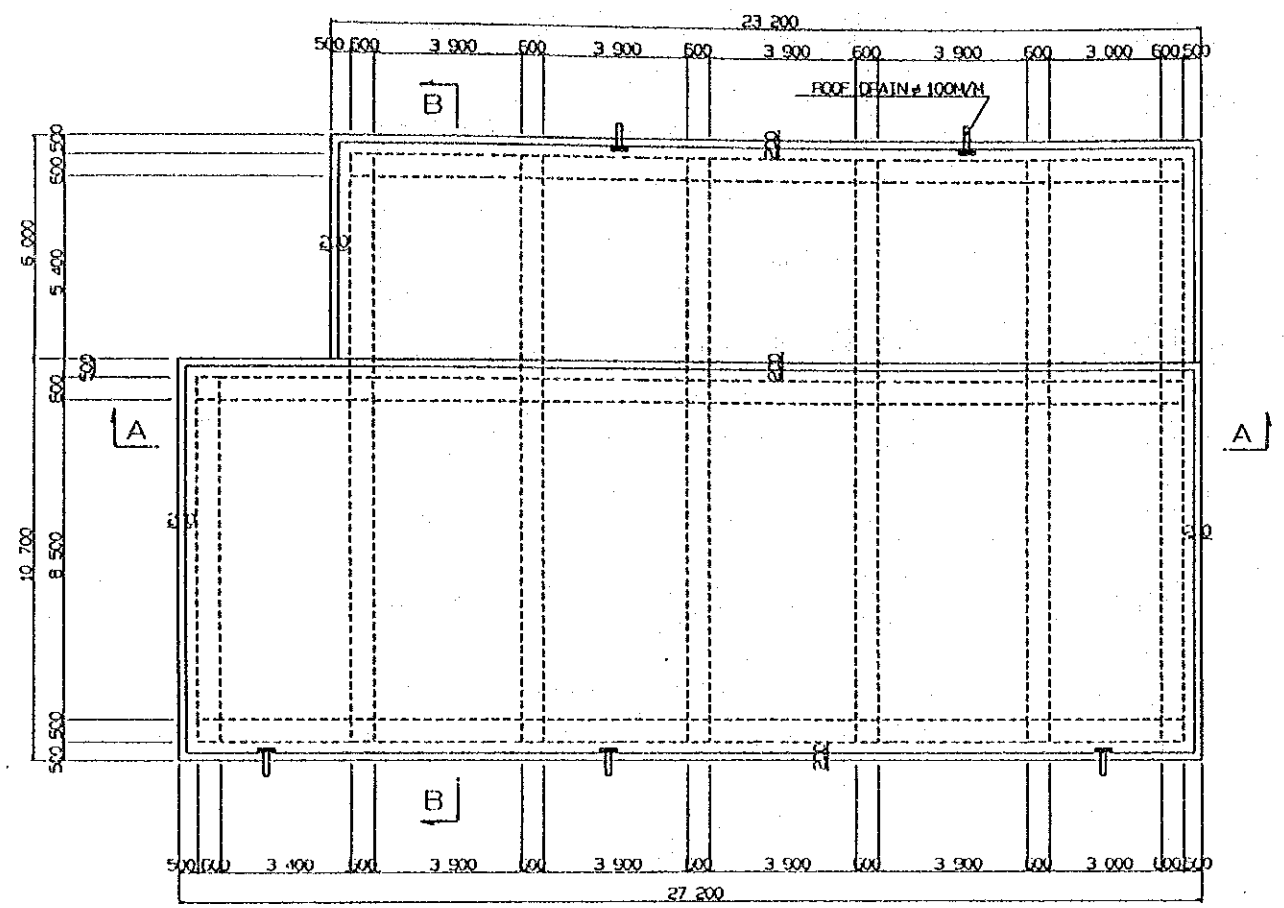


SECTION E-E

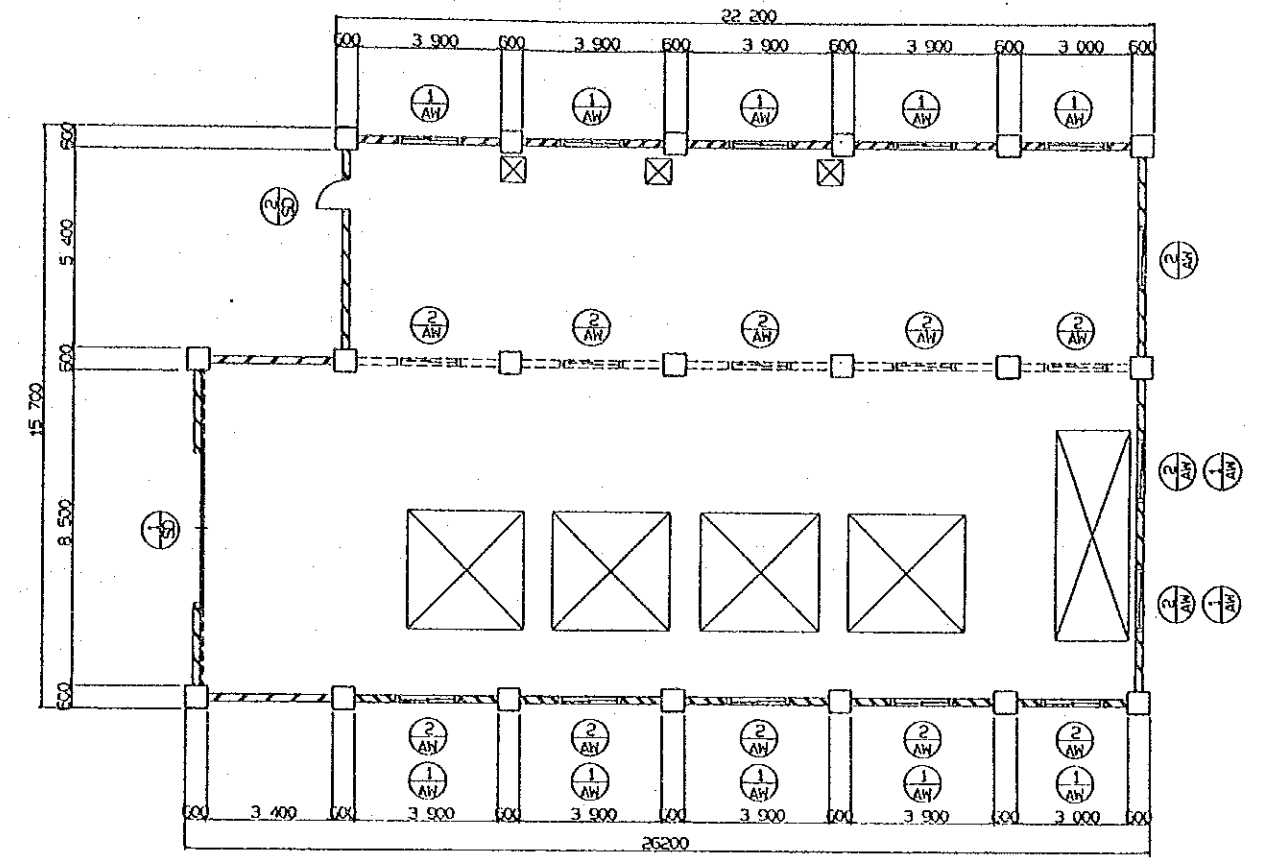


THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING PUMPING STATION SUB-STRUCTURE (2/2)		
Date	Drawing No.	1009
JAPAN INTERNATIONAL COOPERATION AGENCY		

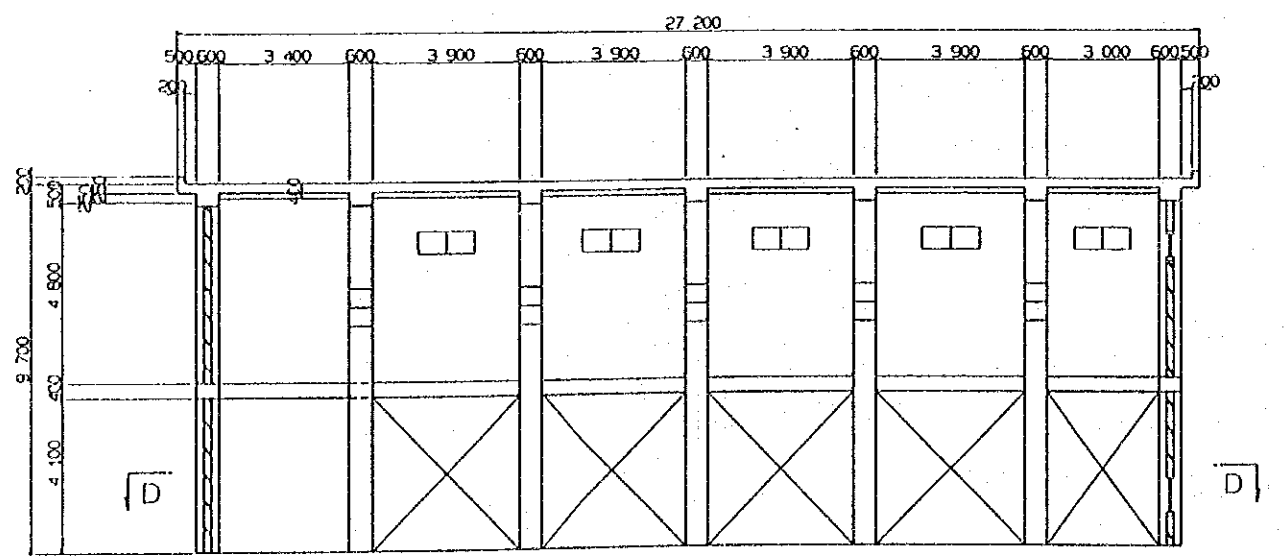
PLAN



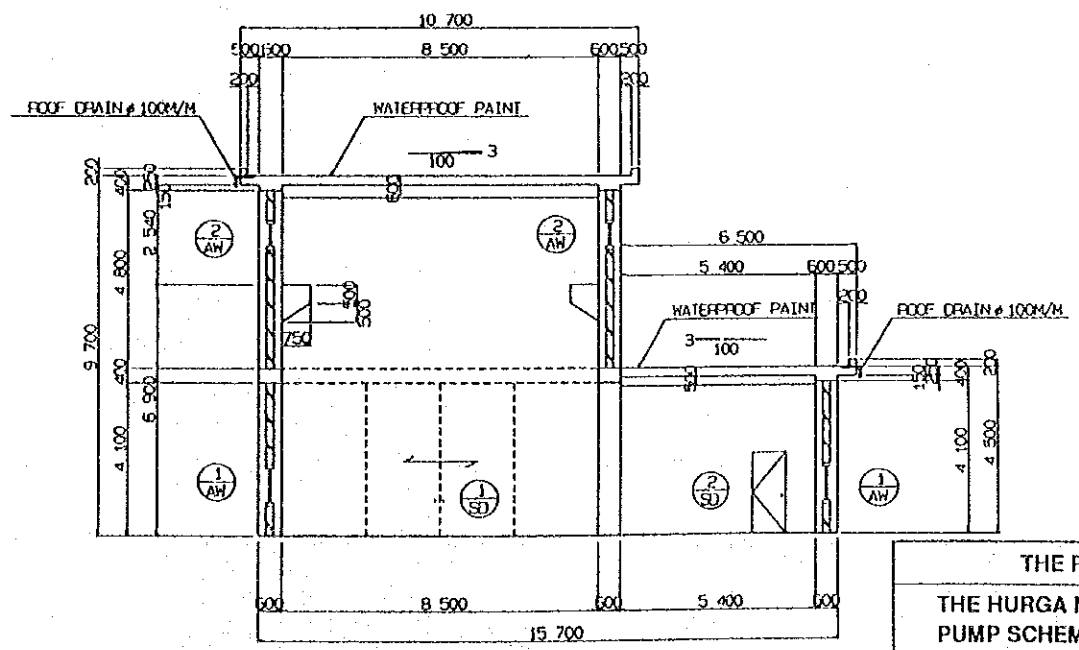
SECTION D-D



SECTION A-A

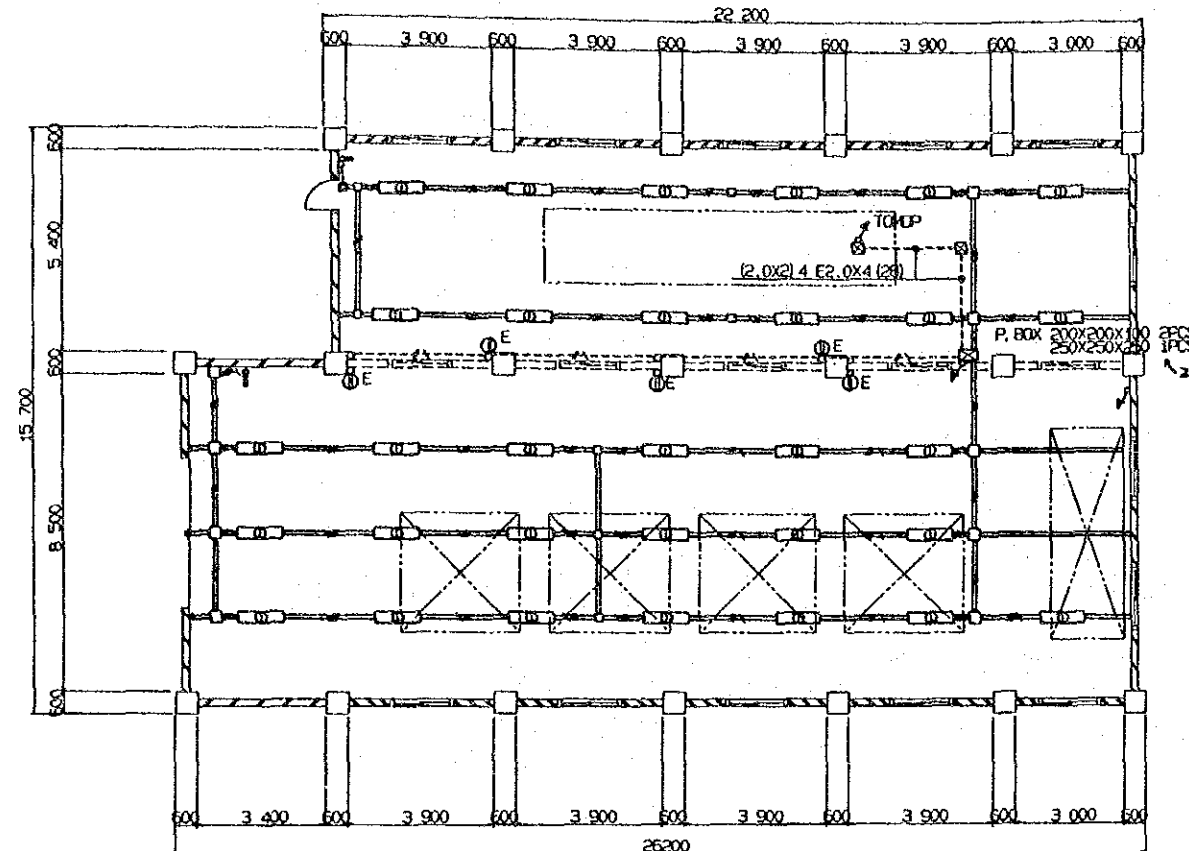


SECTION B-B



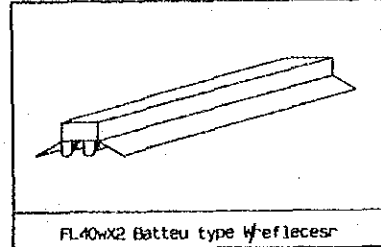
THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING PUMPING STATION SUPER-STRUCTURE (1/2)		
Date	Drawing No.	1010
JAPAN INTERNATIONAL COOPERATION AGENCY		

GROUND FLOOR



LEGEND

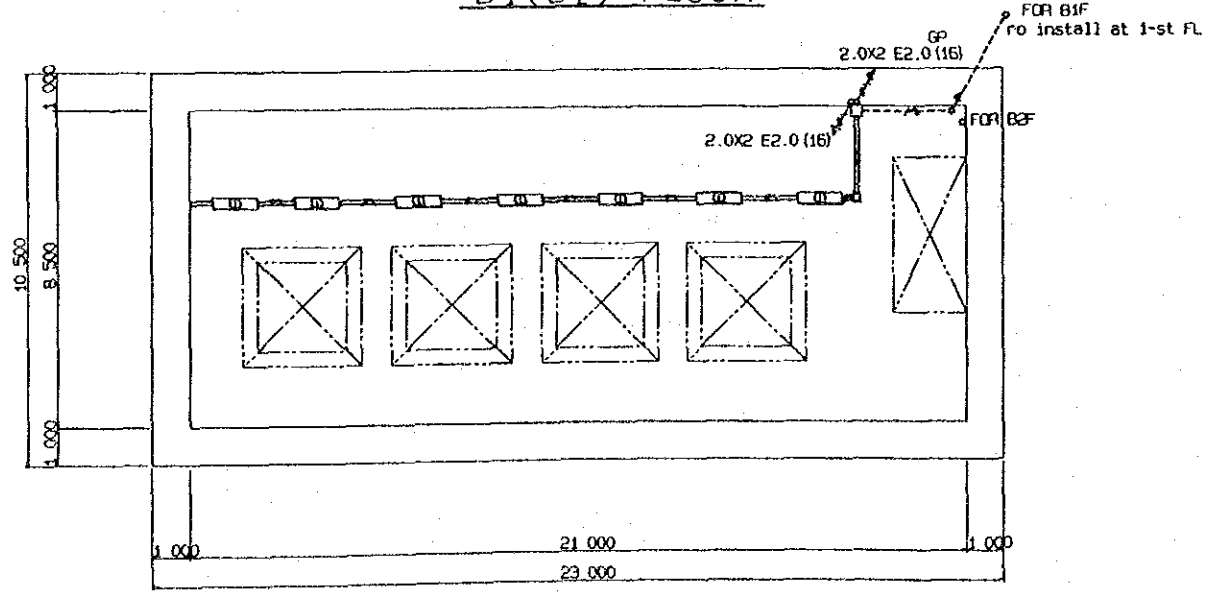
	Pull Box
	Race Way
	Junction Box for Race Way
	2.0 x 2 E 2.0
	2.0 x 3 E 2.0
	2.0 x 3 E 2.0 GP (16)
	2.0 x 4 E 2.0 GP (22)



SYMBOL	(1) STEEL HANGER DOOR	(2) STEEL FLUSH DOOR
SHAPE AND SIZE		
QUANTITY	1	1
GLASS	---	---
FRAME WIDTH	100	100
DOOR THICKNESS	50	40
FINISH	SOP	SIP
HARDWARE	HANGER DOOR LOCK HANDLE	KNOB DOOR LOCK HING CYLINDER DOOR LOCK
REMARKS		

SYMBOL	(A) ALUMINIUM SLIDING WINDOW	(B) ALUMINIUM FIX WINDOW
SHAPE AND SIZE		
QUANTITY	12	13
GLASS	CLEAR SHEET GLASS 4MM	CLEAR SHEET GLASS 4MM
FRAME WIDTH		
DOOR THICKNESS		
FINISH		
HARDWARE AND ACCESSORIES	CRESCENT	
REMARKS		

B₁(B₂) FLOOR



ROOF	WATERPROOF PAINT
WALL	APP ON CEMENT MORTAR
BASE BOARD	CEMENT MORTAR (H=200)
EAVES FASCIA	APP ON CEMENT MORTAR
EAVES SOFFIT	APP ON CONCRETE FINISH
DOORS & WINDOWS	SOP ON STEEL HANGER DOOR & STEEL FLUSH DOOR ALUMINIUM WINDOW w/CLEAR GLASS 4MM
	ROOF DRAIN CAST METAL φ100 M/M (SEA)

ROOM NAME	PUMP ROOM & CUBICLE ROOM
FLOOR	CONCRETE FINISH
BASE BOARD	CEMENT MORTAR (H= 200)
WAINSCOT	---
WALL	APP ON CEMENT MORTAR
CEILING	APP ON CONCRETE FINISH
GENERAL NOTES	STAIR-HANDRAIL: SOP ON STEEL PIPE φ48.5 M/M

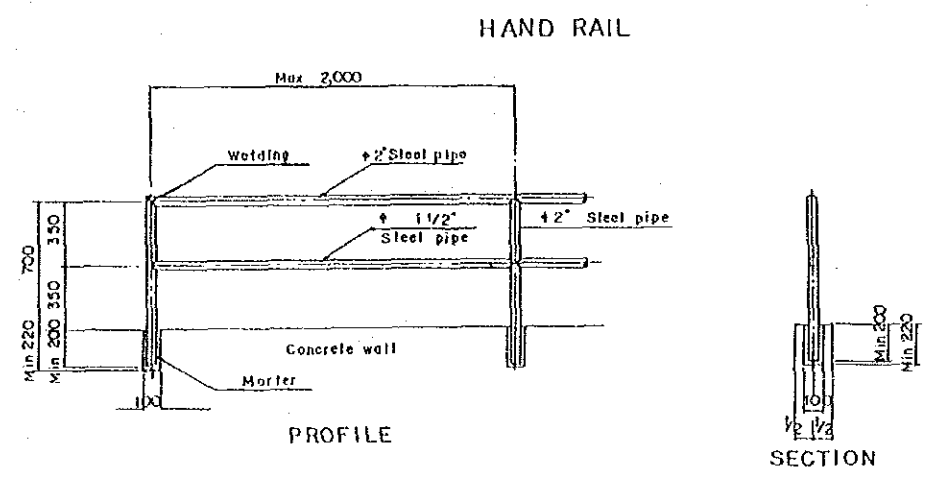
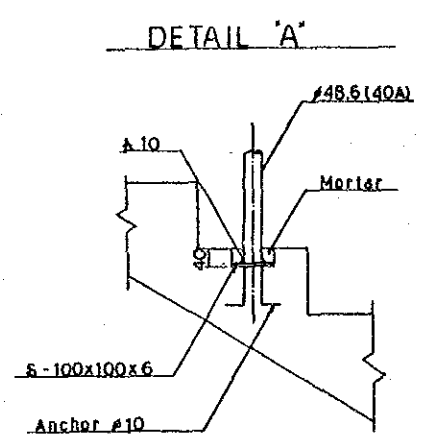
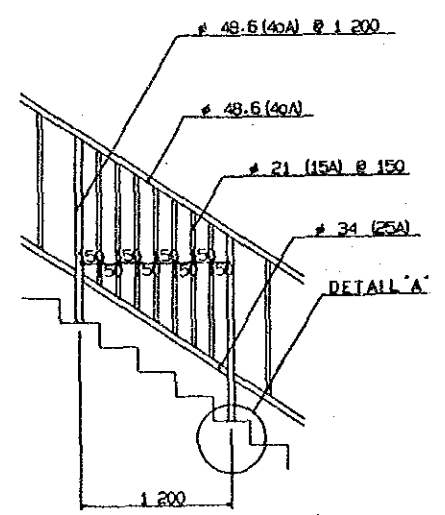
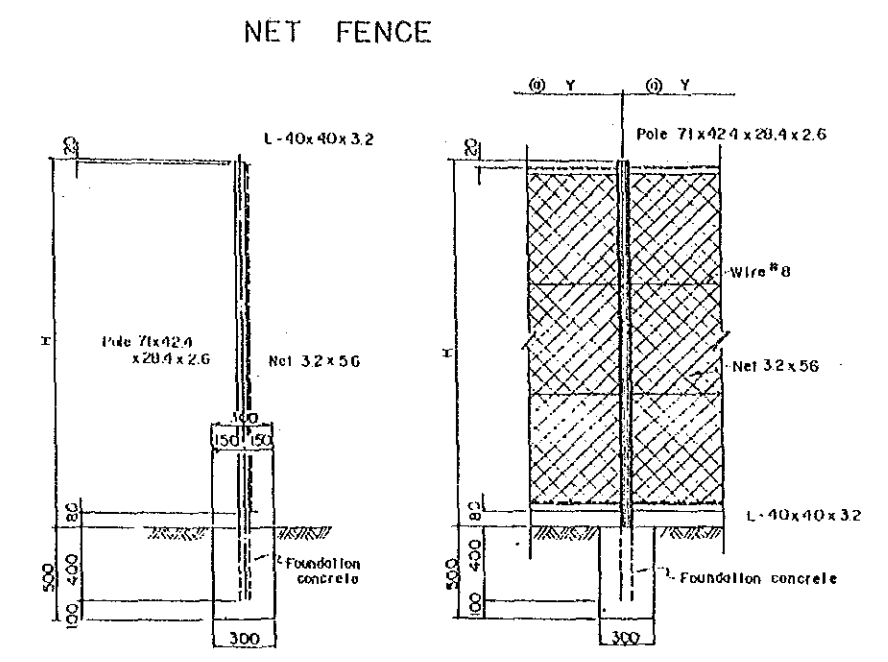
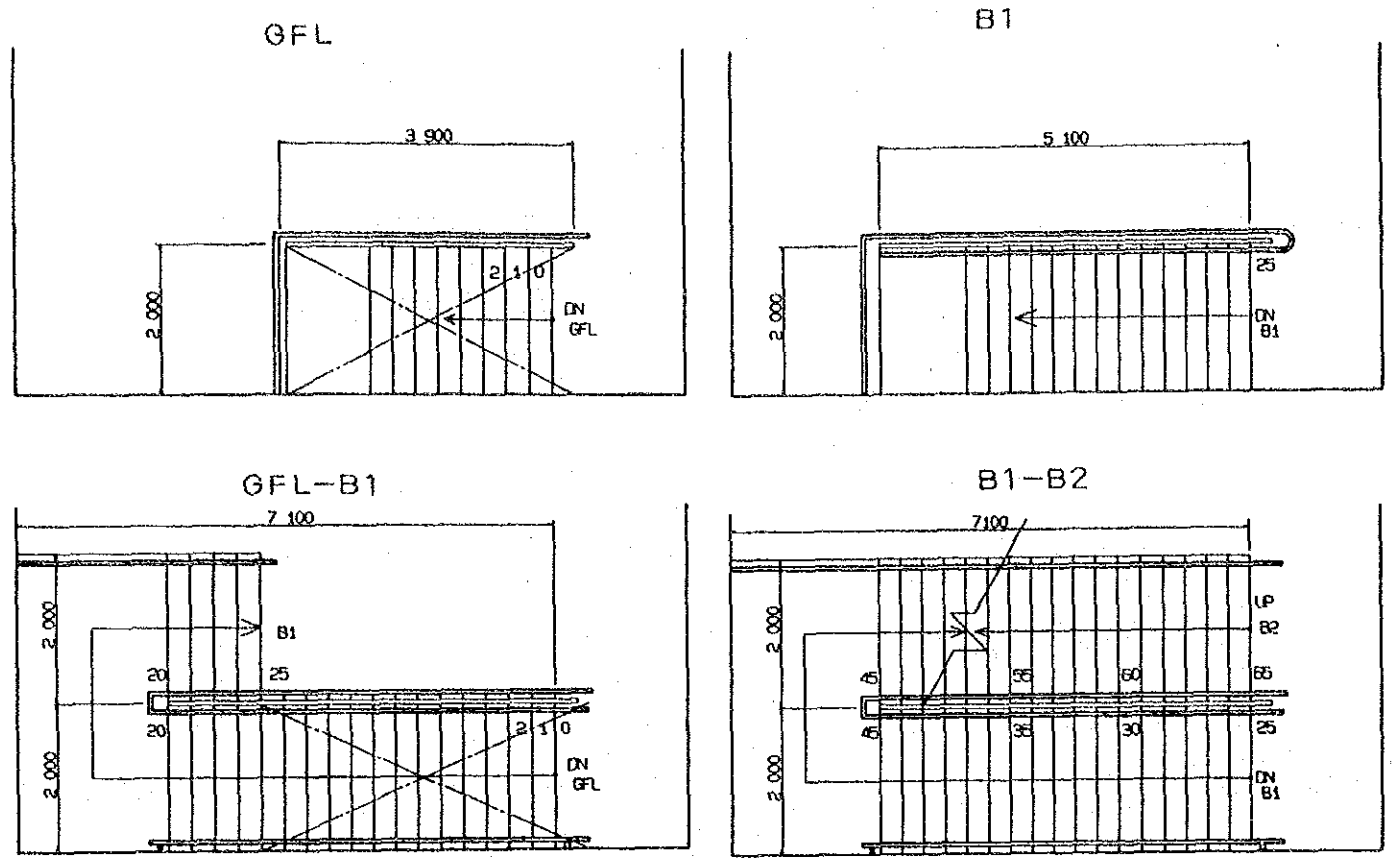
THE REPUBLIC OF THE SUDAN

THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT

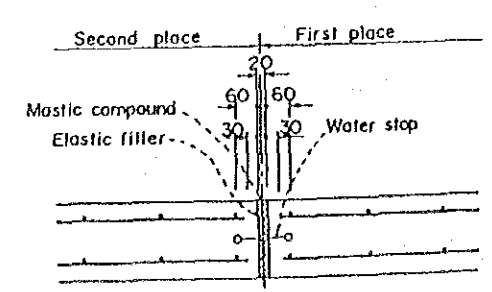
TITLE OF DRAWING
PUMPING STATION
SUPER-STRUCTURE (2/2)

Date	Drawing No.	1011
------	-------------	------

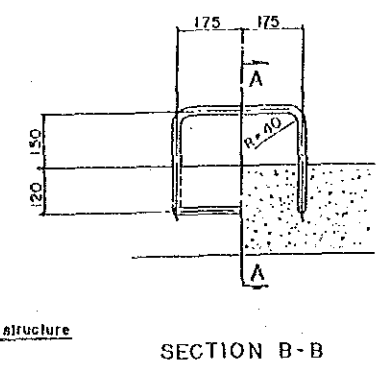
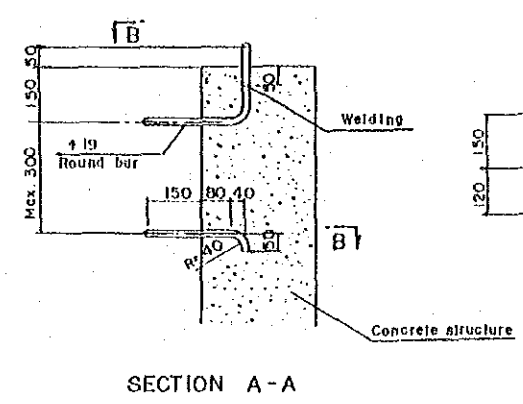
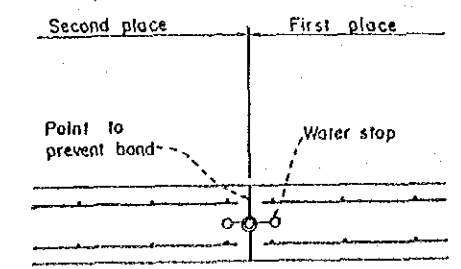
JAPAN INTERNATIONAL COOPERATION AGENCY



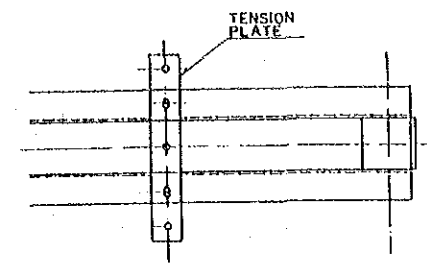
EXPANSION JOINT



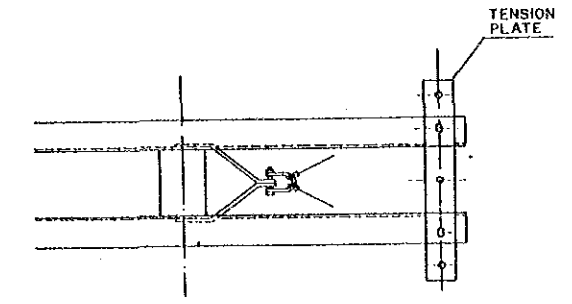
CONTRACTION JOINT



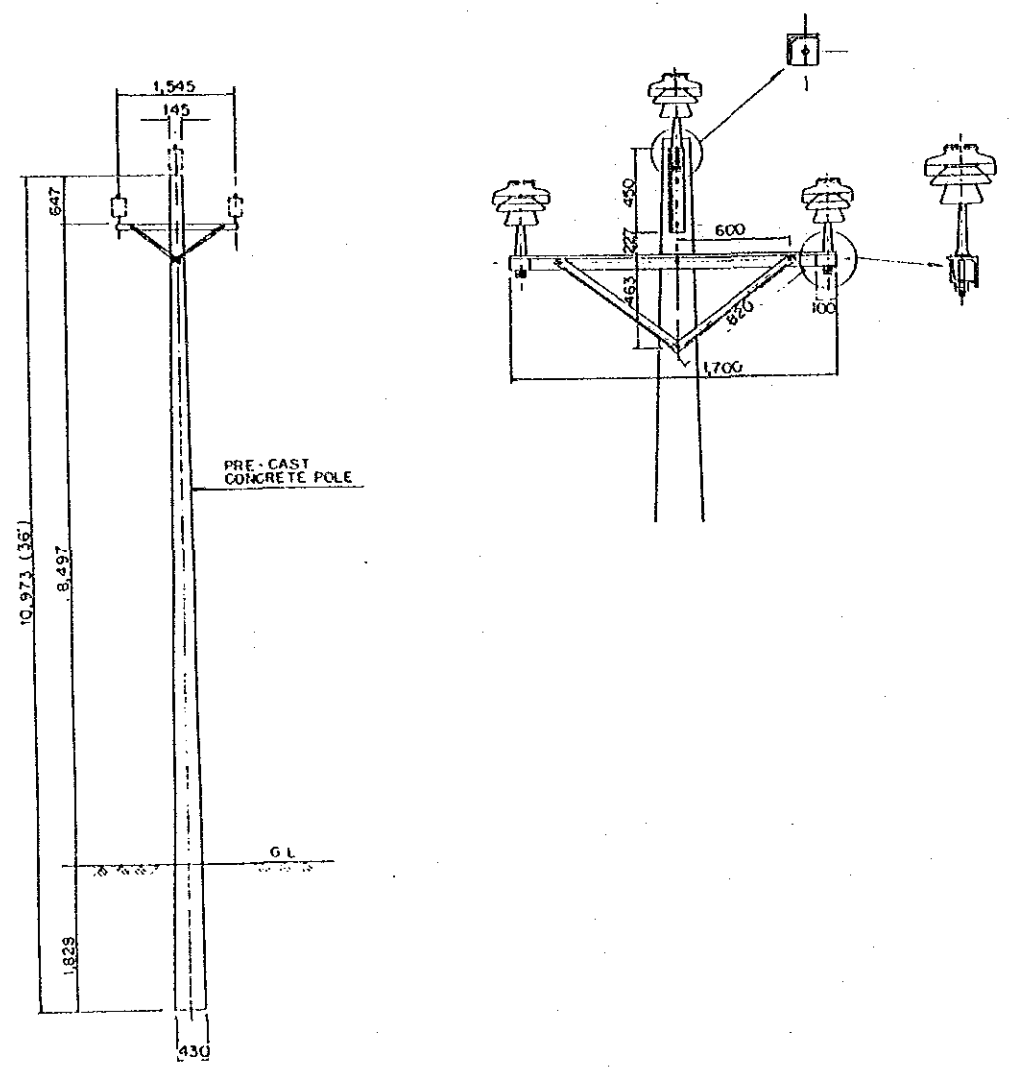
THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING PUMPING STATION STEP AND OTHER MISCELLANIOUS WORKS		
Date	Drawing No.	1012
JAPAN INTERNATIONAL COOPERATION AGENCY		



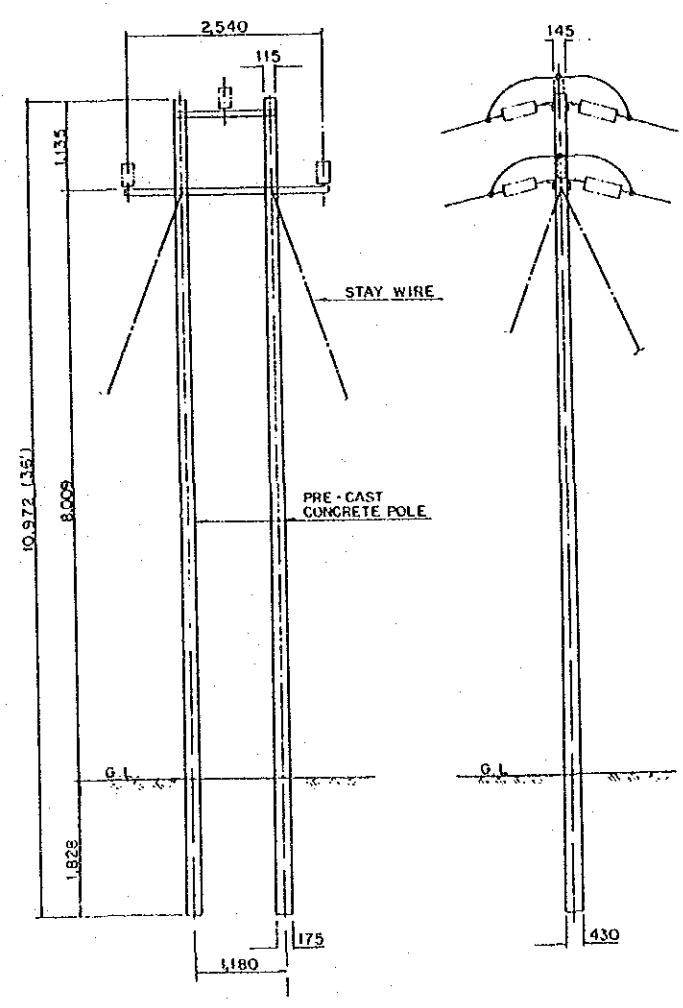
UPPER CROSSAM



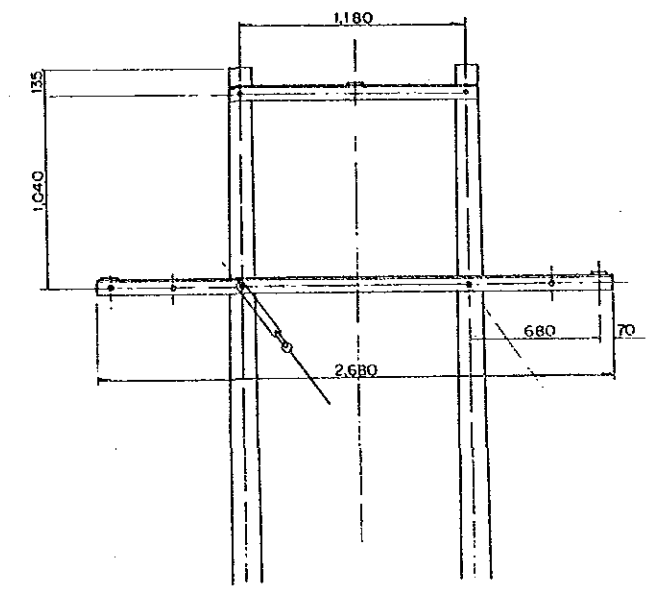
LOWER CROSSAM



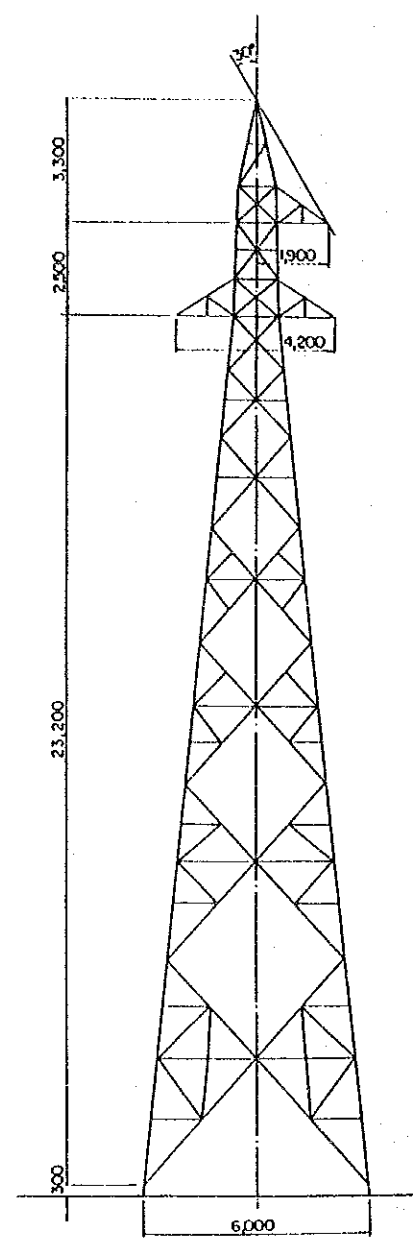
SUSPENSION POLE



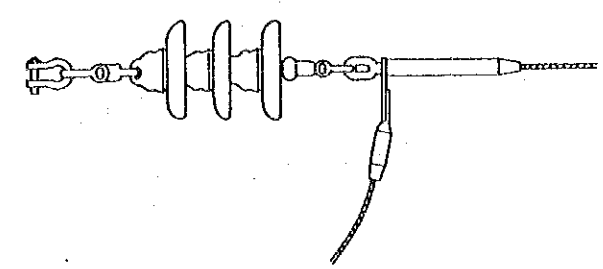
ANGLE POLE



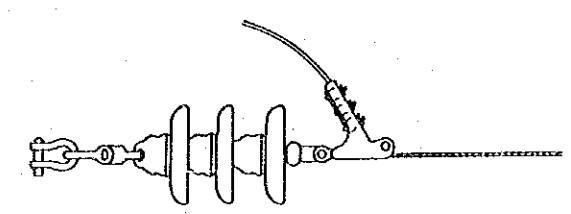
THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING POWER SUPPLY SYSTEM GENERAL WORK			
Date	Drawing No.	2001	
JAPAN INTERNATIONAL COOPERATION AGENCY			



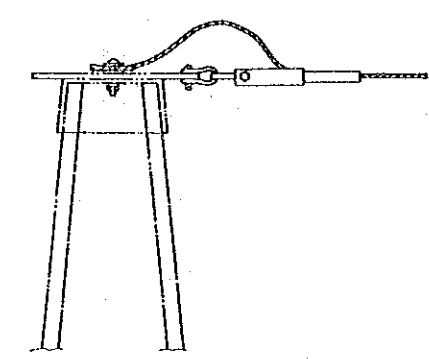
SKELTON OF STEEL TOWER



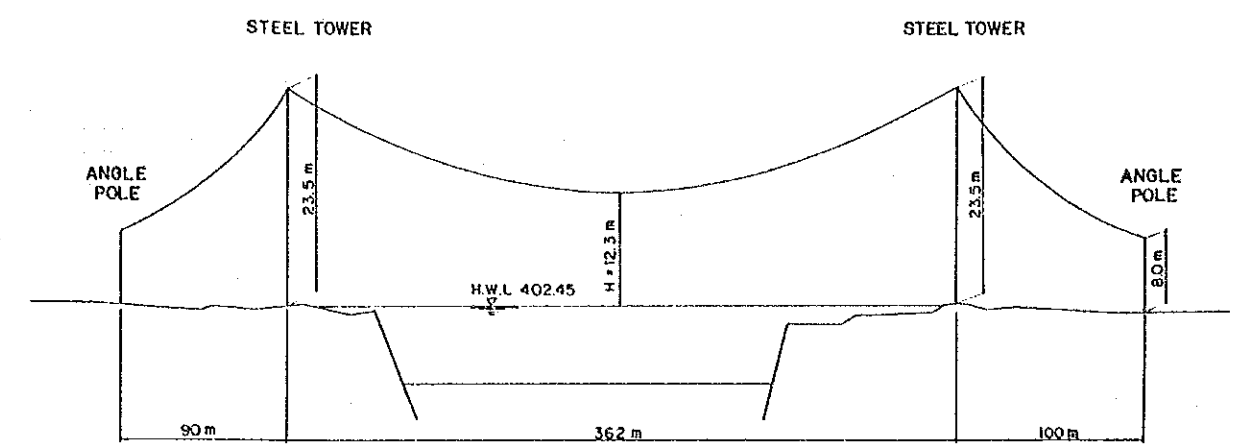
TENSION INSULATOR SET
(COMPRESSION TYPE)



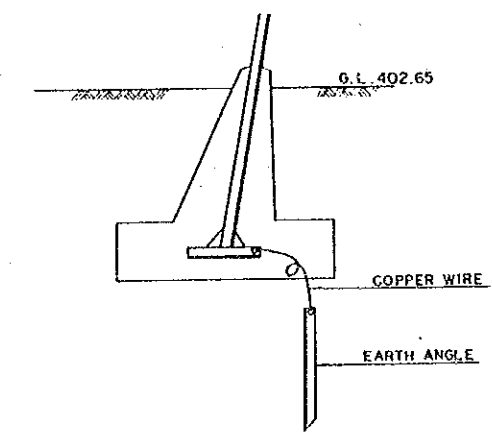
TENSION INSULATOR SET
(BOLT TYPE)



GROUNDWIRE TENSION SET

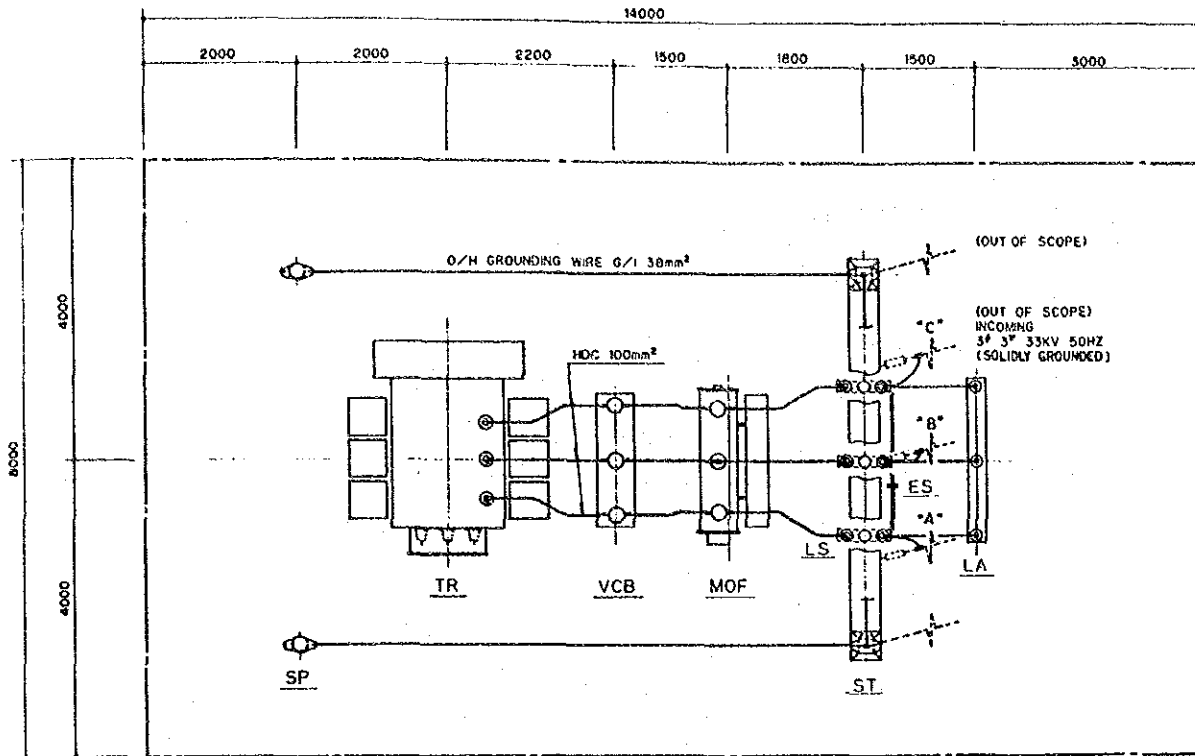


PROFILE OF RIVER CROSSING
(SCALE HORIZONTAL 1: 2,000)
VERTICAL 1: 400)

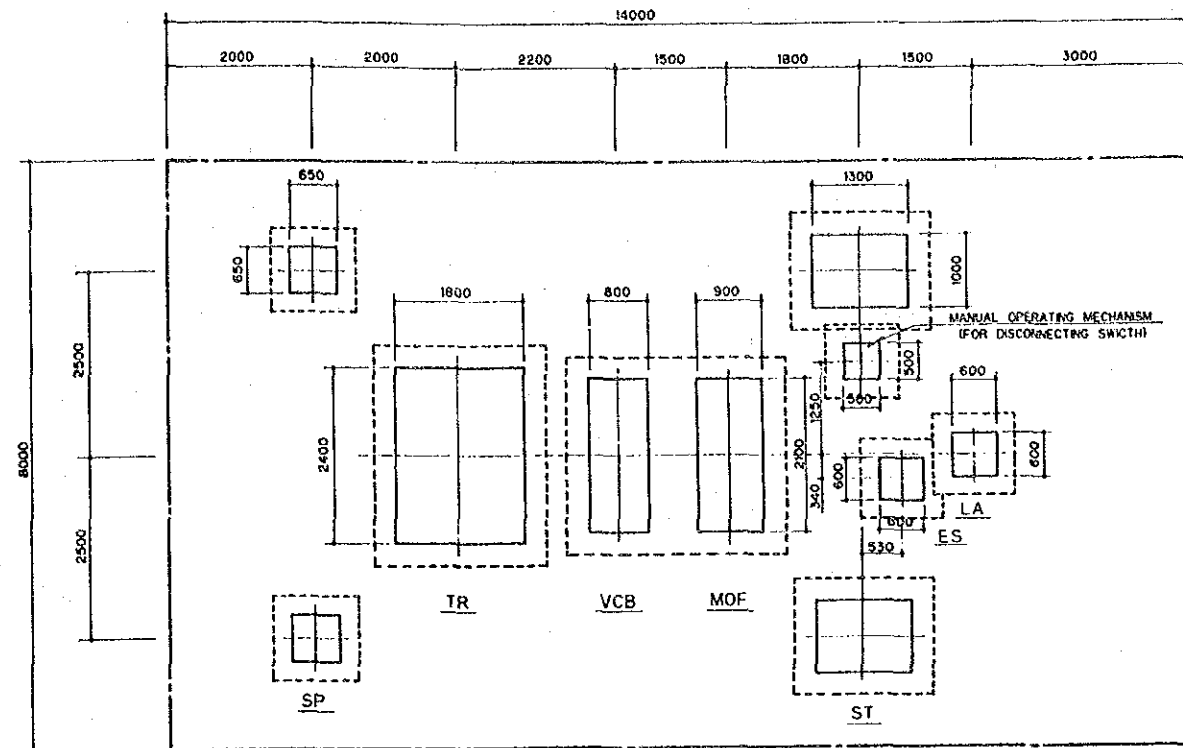


FOUNDATION &
EARTHING SYSTEM

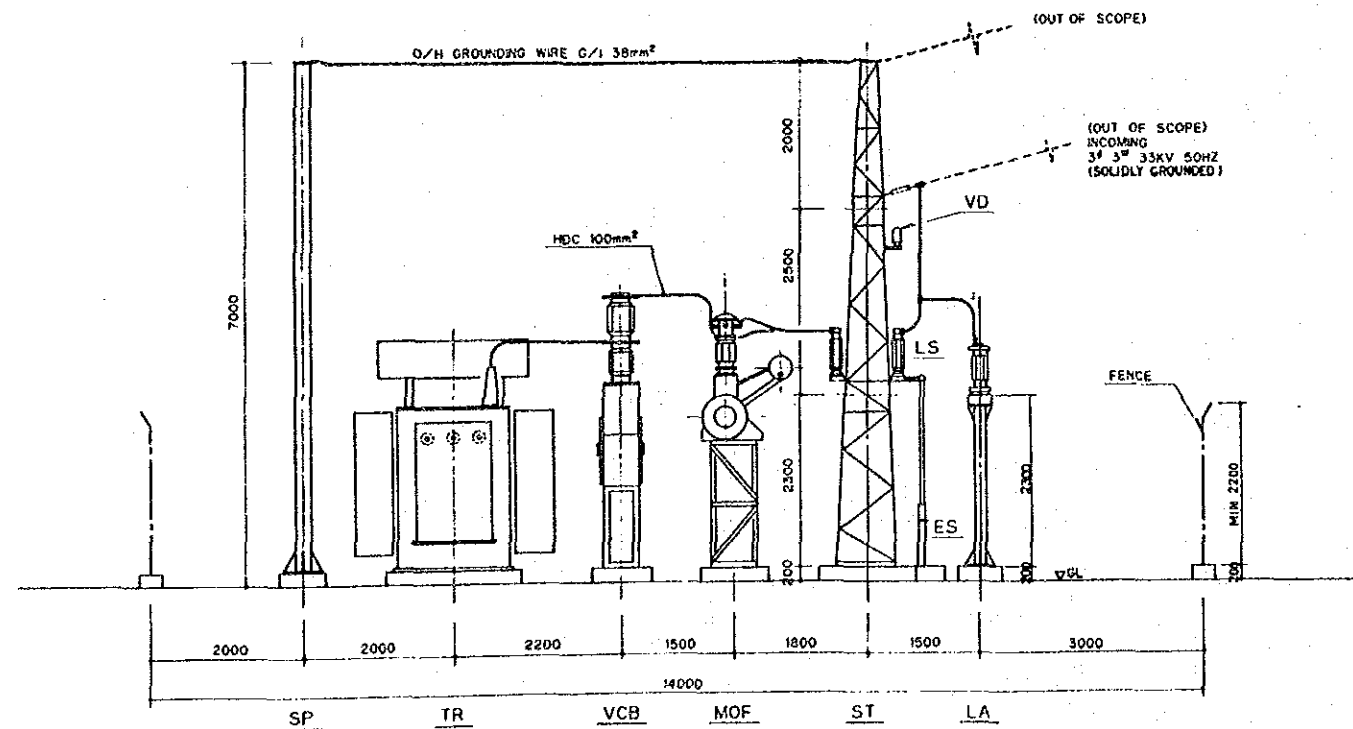
THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING			
POWER SUPPLY SYSTEM RIVER CROSSING WORK			
Date	Drawing No.	2002	
JAPAN INTERNATIONAL COOPERATION AGENCY			



PLAN



FOUNDATION PLAN



SECTION

LEGEND

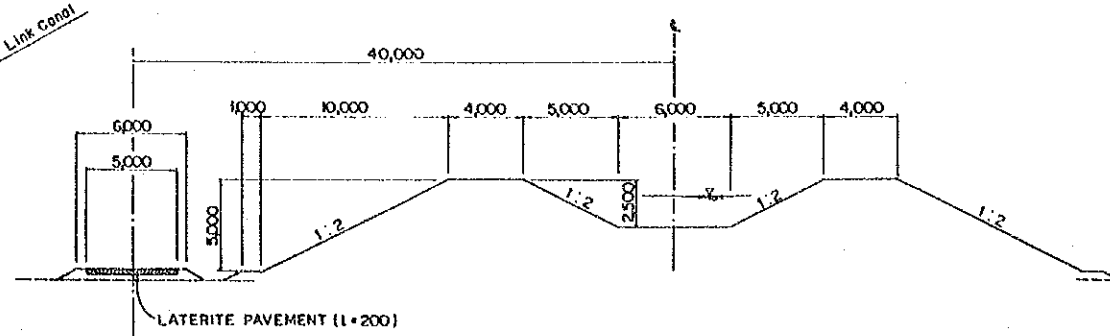
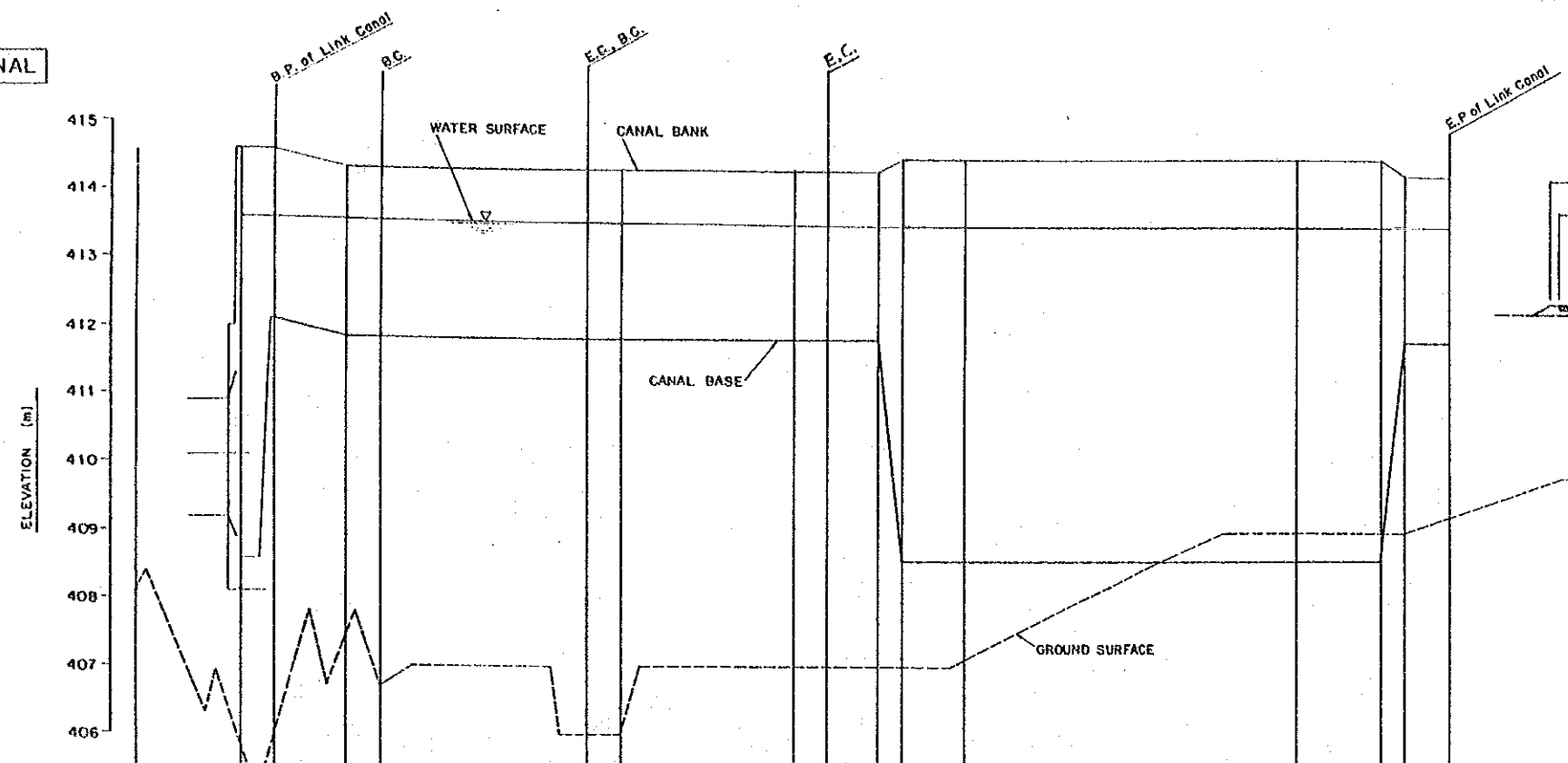
MARK	DISCRIPTION	REMARK
VD	VOLTAGE DETECTOR	
LA	LIGHTNING ARRESTER	
LS	LINE SWITCH	
ES	EARTH SWITCH	
MOF	METERING OUTFIT	
VCB	VACUUM CIRCUIT BREAKER	
TR	TRANSFORMER	WITH CT
ST	STEEL STRUCTURE	
SP	STEEL POLE	
SP	STEEL POLE	

THE REPUBLIC OF THE SUDAN
 THE HURGA NUR EL DIN
 PUMP SCHEME REHABILITATION PROJECT

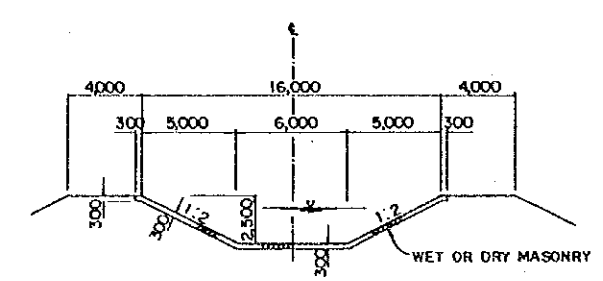
TITLE OF DRAWING
 POWER SUPPLY SYSTEM
 OUTDOOR SUBSTATION

Date _____ Drawing No. 2003
 JAPAN INTERNATIONAL COOPERATION AGENCY

LINK CANAL

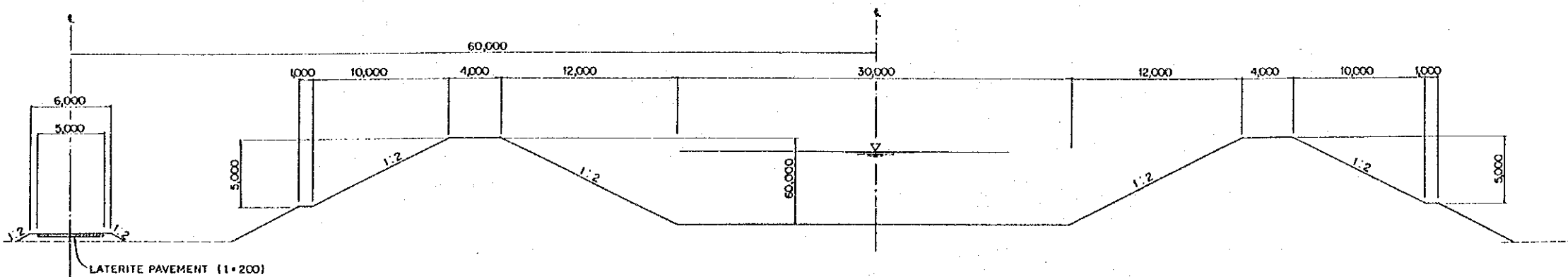


TYPICAL CROSS SECTION OF LINK CANAL



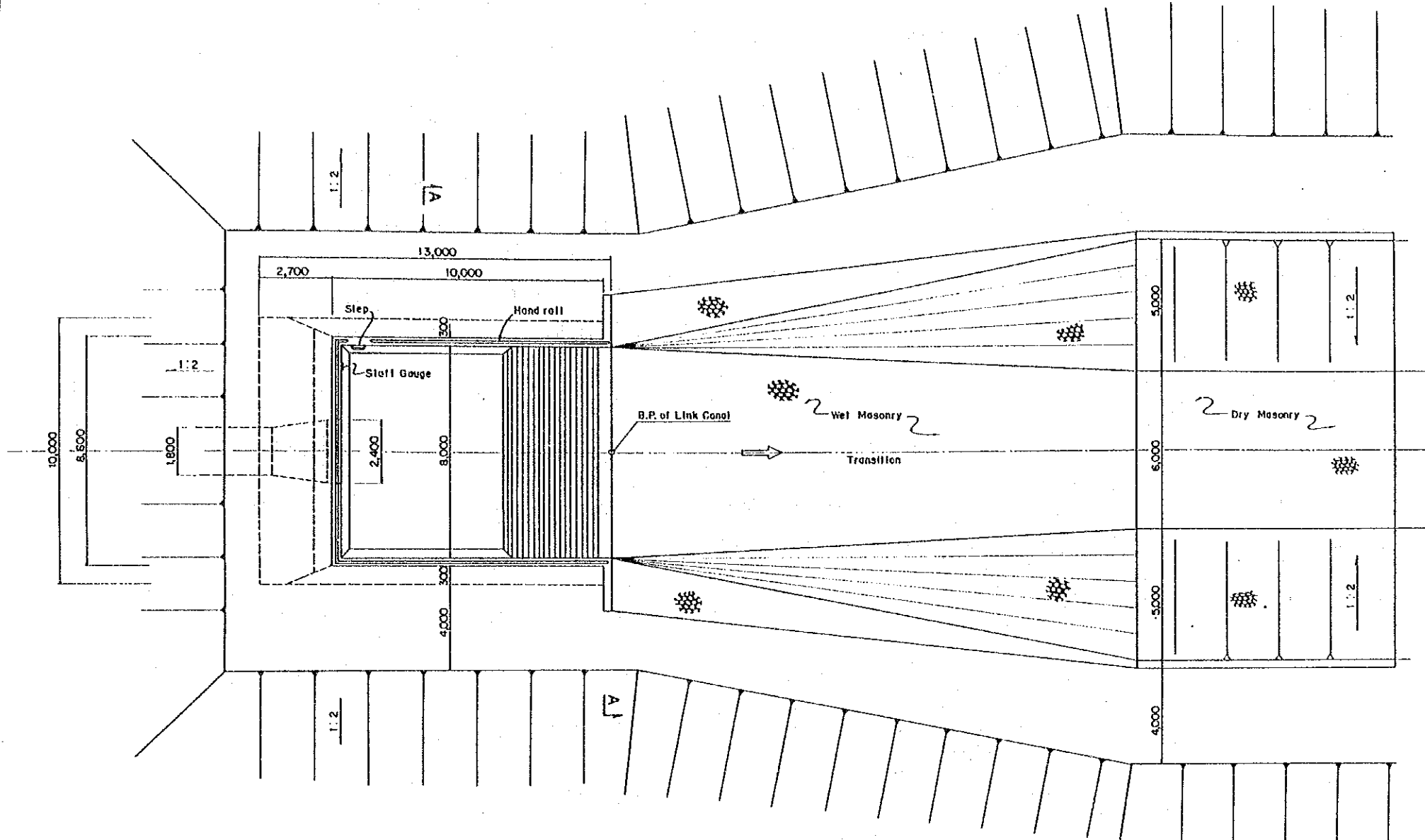
CROSS SECTION OF LINING PORTION

DESIGN	CANAL TYPE	Discharge Outlet	Transition	Dry Masonry Lining	IA=24°30', R=140 m TL=30.4 m, CL=60 m Q=8.17 m³/s, I=1/10,000, h=1.71 m, V=0.51 m/s	IA=29°30', R=136 m TL=35.9 m, CL=70 m	Dry Masonry Lining	Well Masonry	Sand Settling Basin	Transition					
	CANAL BANK ELEVATION		414.60	414.60	414.35	414.35	414.35	414.35	414.35	414.35	414.35				
	WATER SURFACE ELEVATION		413.58	414.37	414.35	414.35	414.35	414.35	414.35	414.35	414.35				
	CANAL BASE ELEVATION		408.60	412.10	411.87	411.87	411.87	411.87	411.87	411.87	411.87				
	GROUND SURFACE ELEVATION	408.0 408.4 406.3 402.1	407.8 406.7 407.8 406.7 407.0	407.0 406.0	406.0 407.0	408.0	409.0 409.0	408.5 413.54	408.5 413.54	409.0 409.0	409.8 409.9 409.3 409.4				
REDUCED DISTANCE		0	20	30	60	100	150	160	175	182	200	300	325	332	345
DISTANCE			20	10	60	10	50	10	15	7	18	100	25	7	13
STATION NO.		B.P.			K0100						K0200		K0300		E.P.

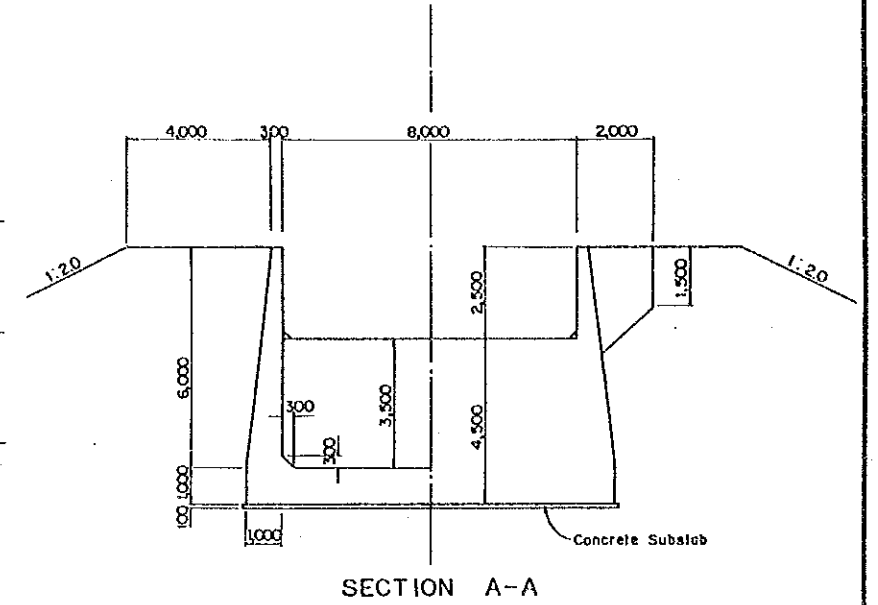


CROSS SECTION OF SAND SETTLING BASIN

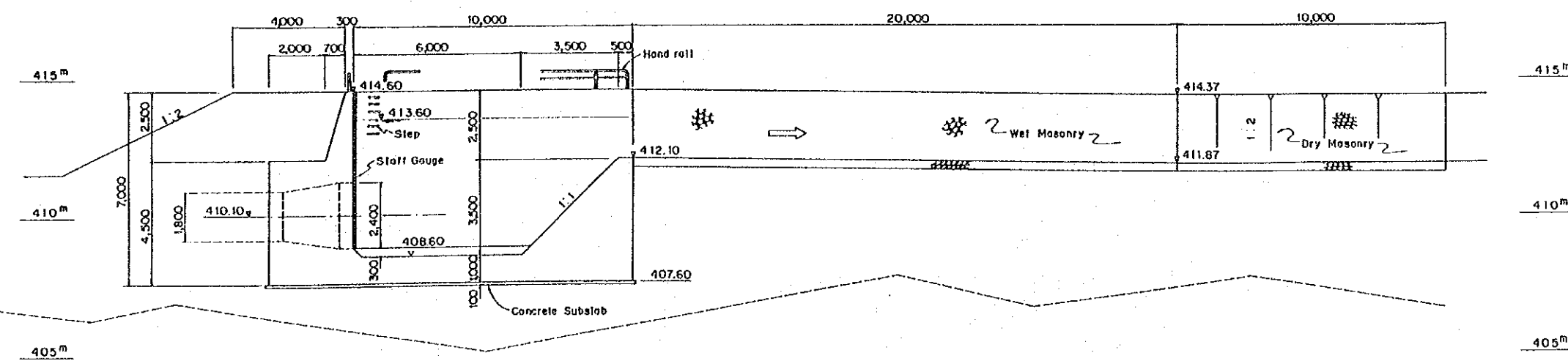
THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING			
LINK CANAL AND NEW MAIN CANALS			
PROFILE OF LINK CANAL			
Date		Drawing No.	3002
JAPAN INTERNATIONAL COOPERATION AGENCY			



PLAN



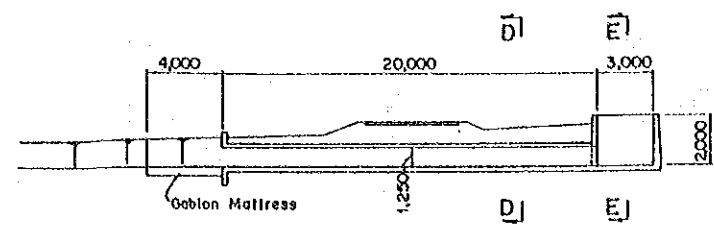
SECTION A-A



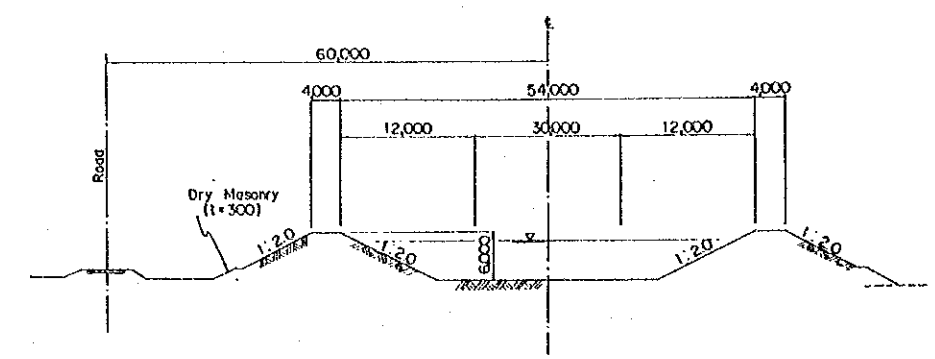
PROFILE



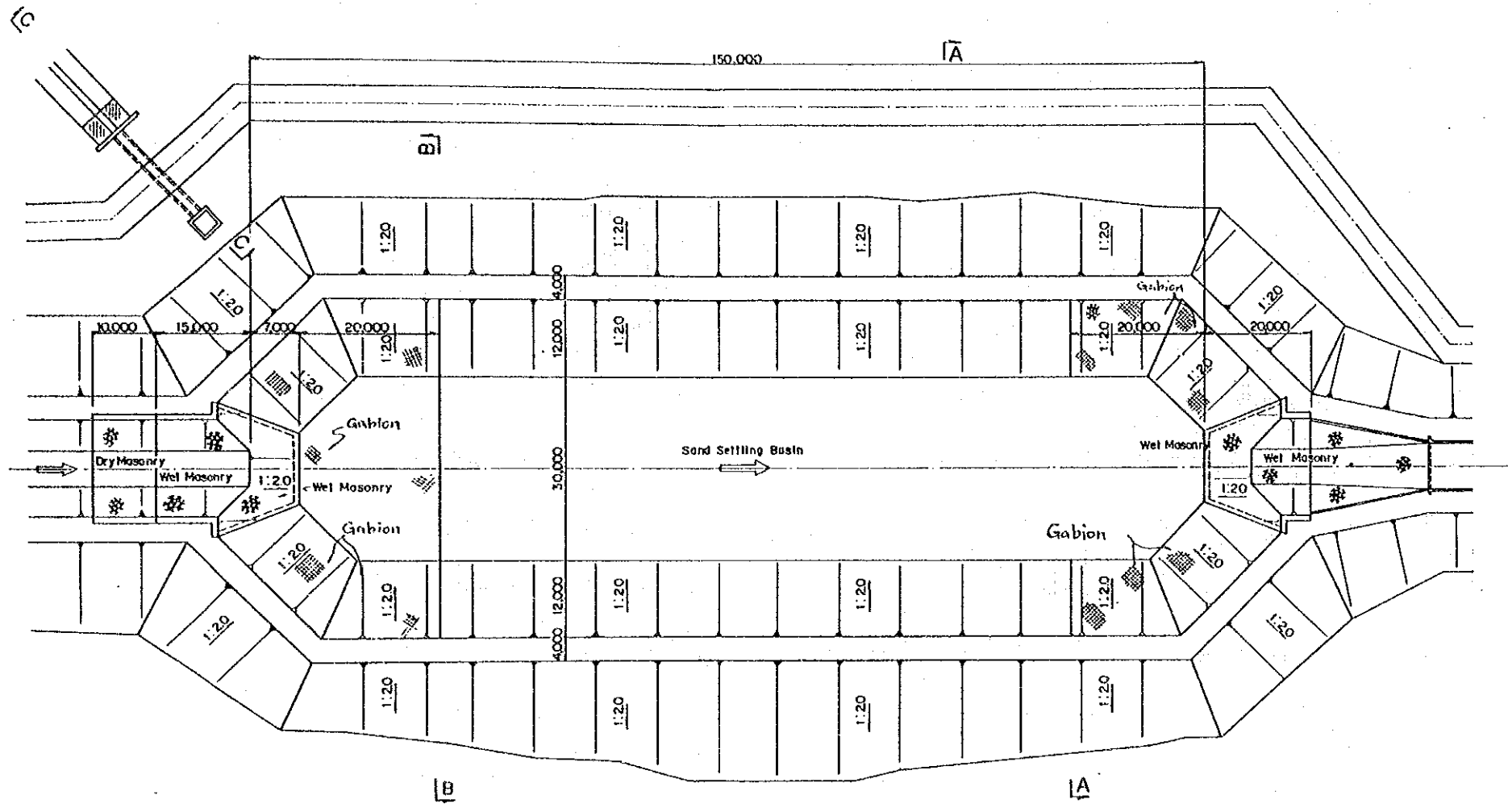
THE REPUBLIC OF THE SUDAN			
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT			
TITLE OF DRAWING LINK CANAL AND NEW MAIN CANALS DISCHARGE OUTLET STRUCTURE			
Date		Drawing No.	3003
JAPAN INTERNATIONAL COOPERATION AGENCY			



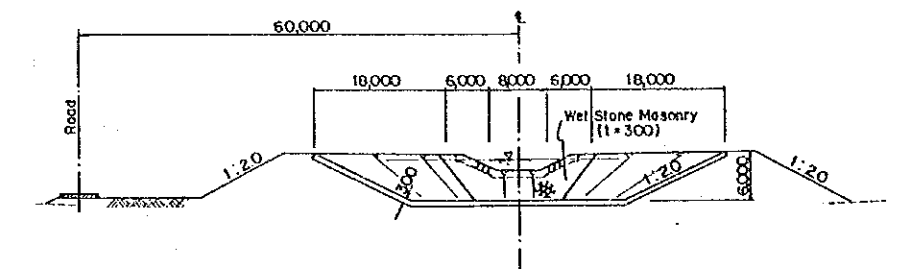
SECTION C-C



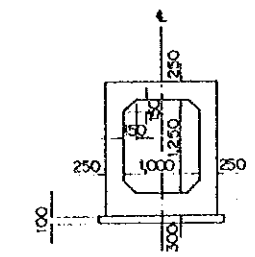
SECTION A-A



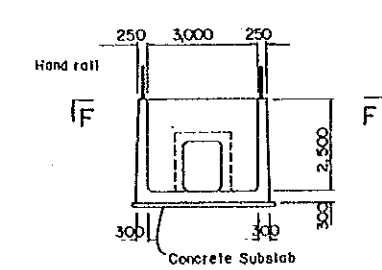
PLAN



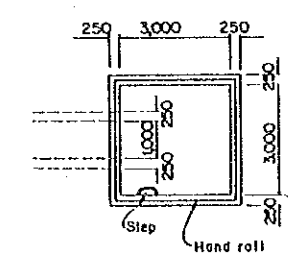
SECTION B-B



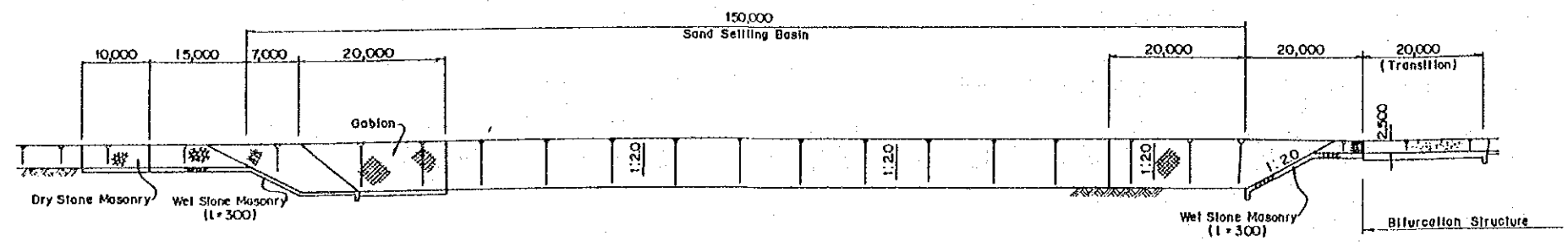
SECTION D-D



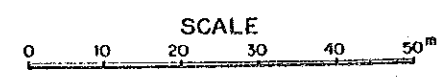
SECTION E-E



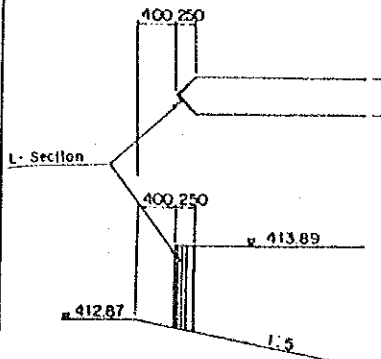
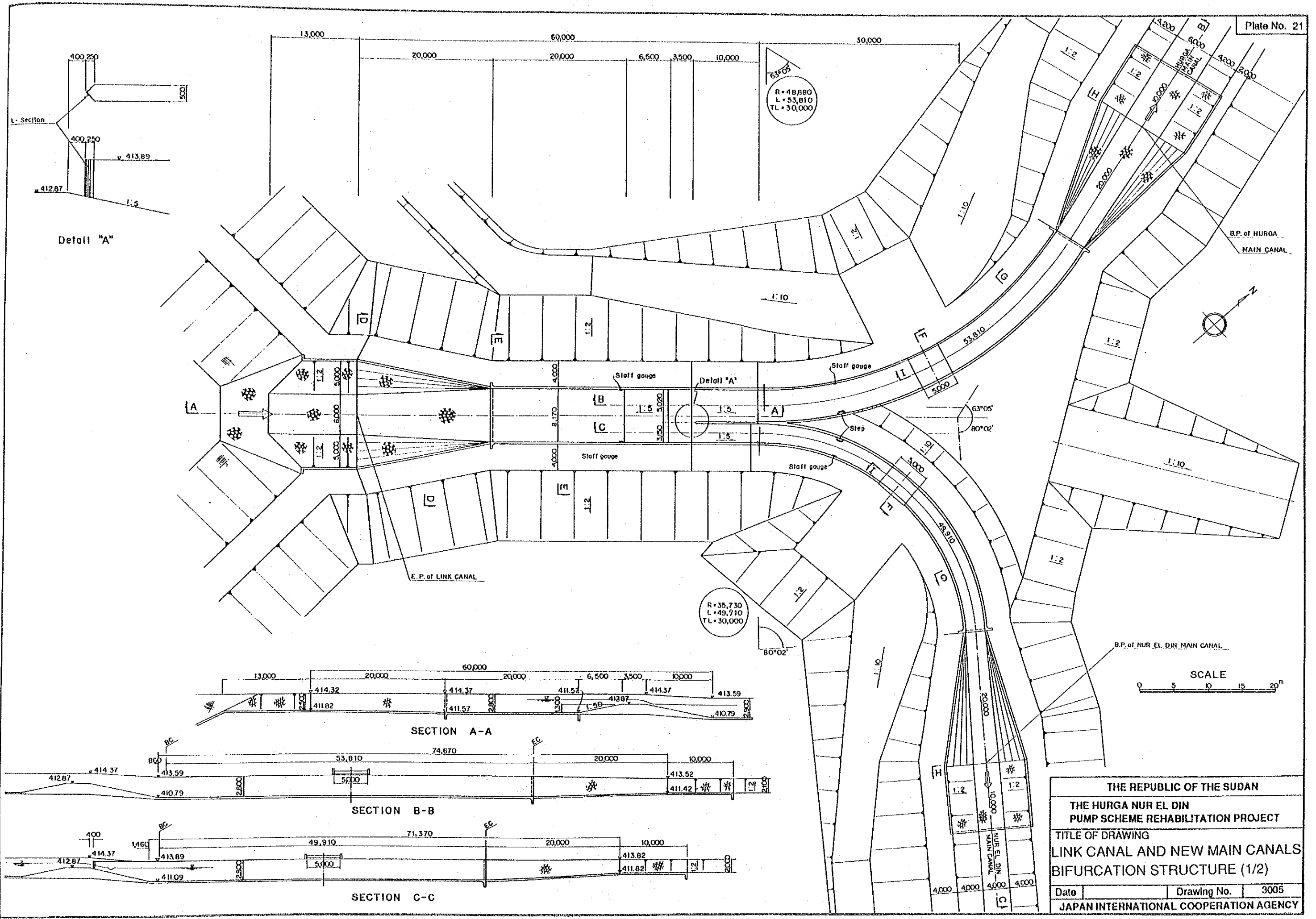
SECTION F-F



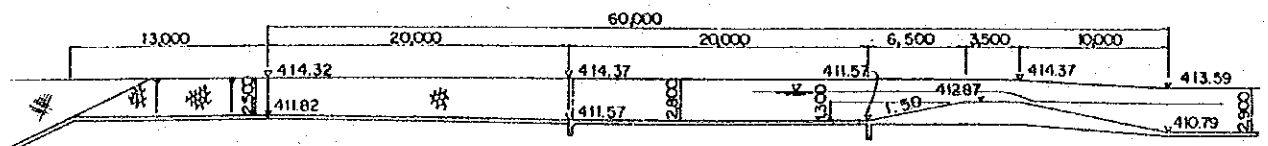
PROFILE



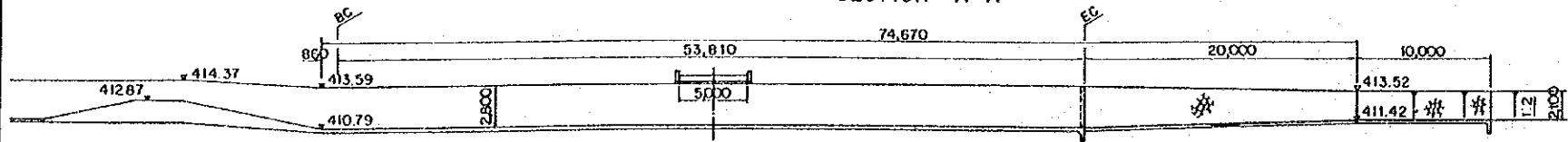
THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN		
PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING		
LINK CANAL AND NEW MAIN CANALS		
SAND SETTLING BASIN STRUCTURE		
Date	Drawing No.	3004
JAPAN INTERNATIONAL COOPERATION AGENCY		



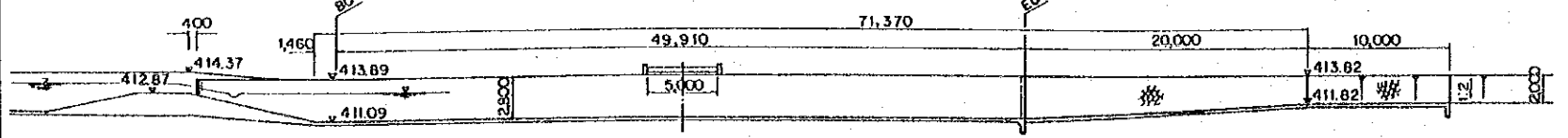
Detail "A"



SECTION A-A

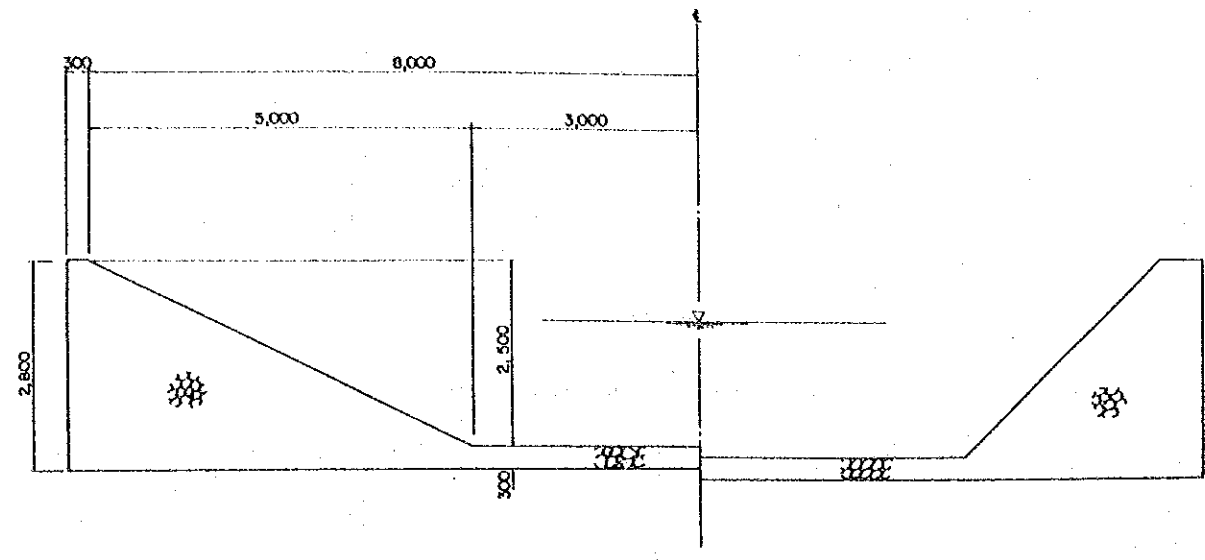


SECTION B-B

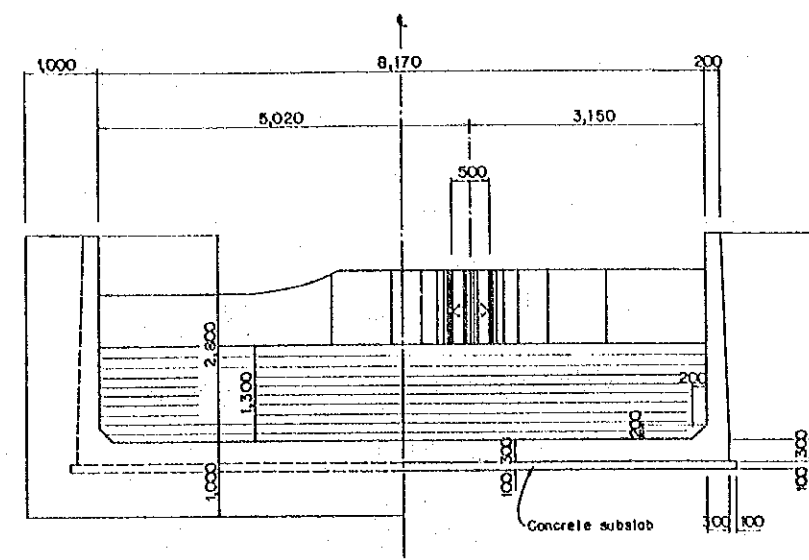


SECTION C-C

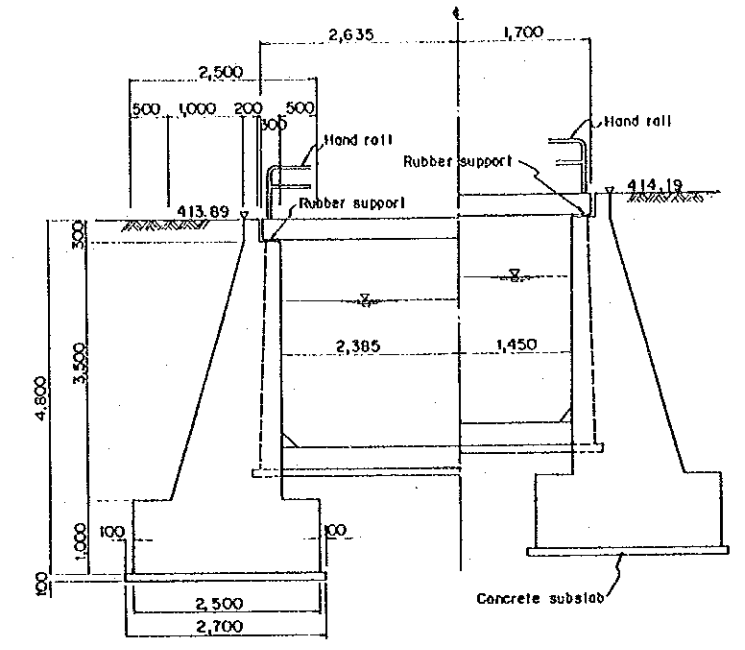
THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING LINK CANAL AND NEW MAIN CANALS BIFURCATION STRUCTURE (1/2)		
Date	Drawing No.	3005
JAPAN INTERNATIONAL COOPERATION AGENCY		



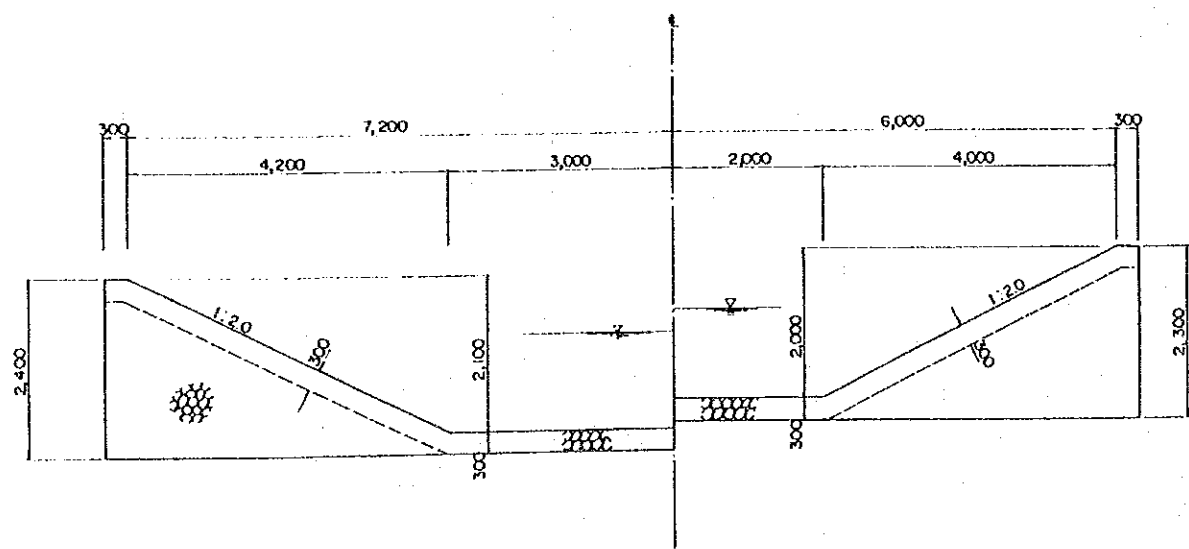
SECTION D-D



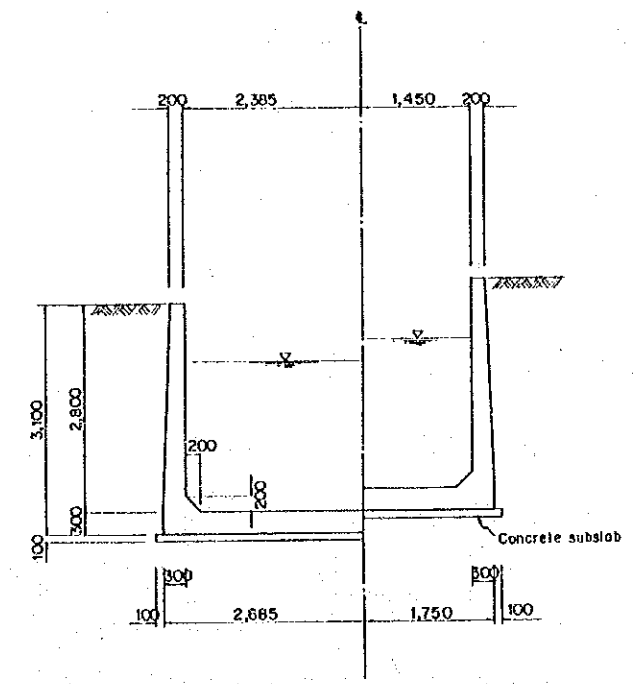
SECTION E-E



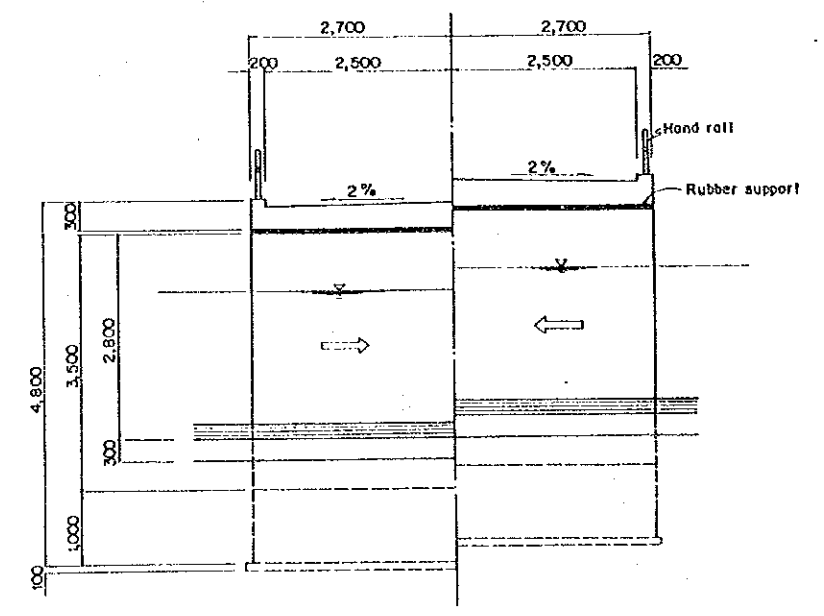
SECTION F-F



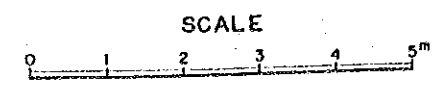
SECTION H-H



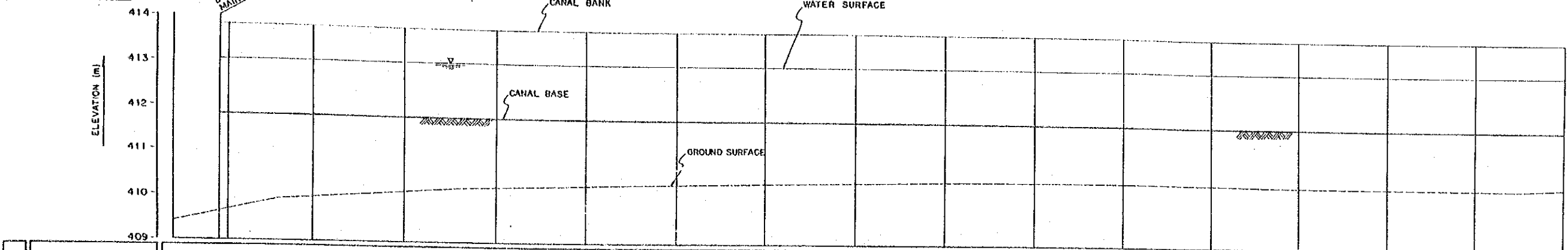
SECTION G-G



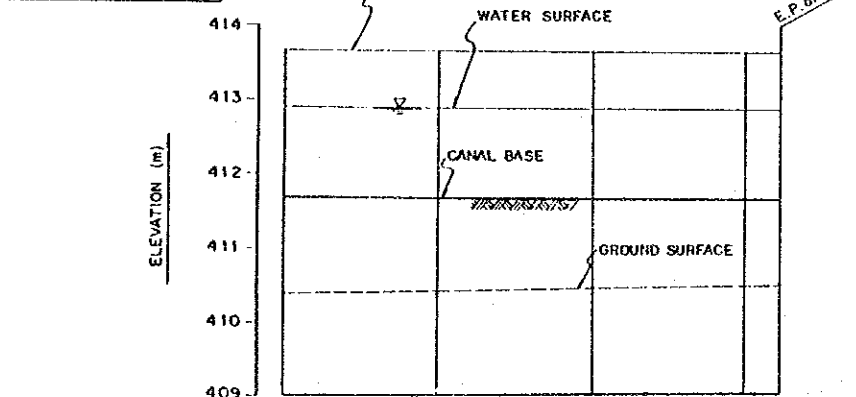
SECTION I-I



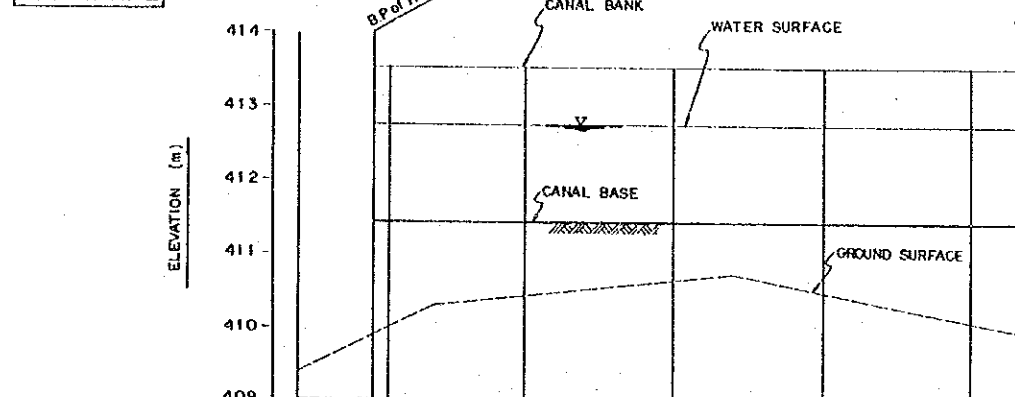
THE REPUBLIC OF THE SUDAN		
THE HURGA NUR EL DIN PUMP SCHEME REHABILITATION PROJECT		
TITLE OF DRAWING LINK CANAL AND NEW MAIN CANALS BIFURCATION STRUCTURE (2/2)		
Date	Drawing No.	3006
JAPAN INTERNATIONAL COOPERATION AGENCY		



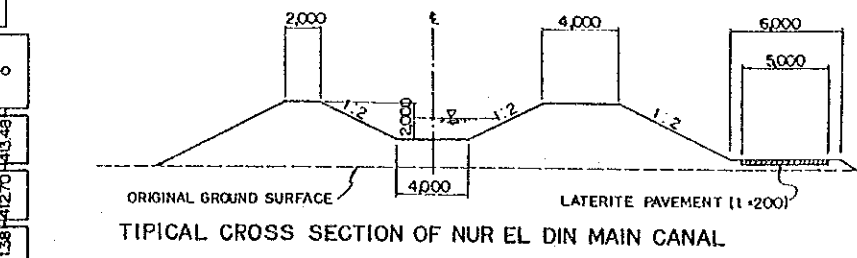
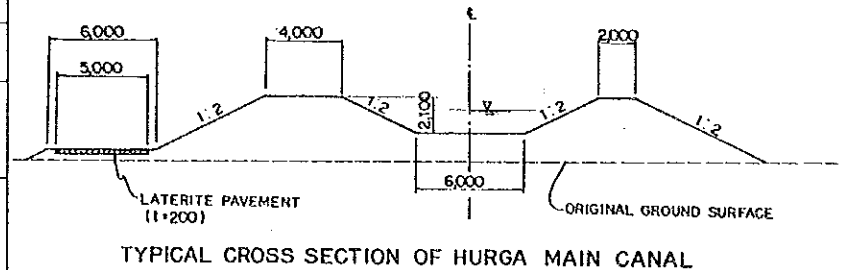
DESIGN	CANAL TYPE	Lining $Q = 3.15 \text{ m}^3/\text{s}$, $I = 1/10,000$, $h = 1.22 \text{ m}$, $v = 0.40 \text{ m/s}$															
	CANAL BANK ELEVATION	413.82	413.81	413.80	413.79	413.78	413.77	413.76	413.75	413.74	413.73	413.72	413.71	413.69	413.68	413.67	
	WATER SURFACE ELEVATION	413.04	413.03	413.02	413.01	413.00	412.99	412.98	412.97	412.96	412.95	412.94	412.93	412.91	412.90	412.89	
	CANAL BASE ELEVATION	411.82	411.81	411.80	411.79	411.78	411.77	411.76	411.75	411.74	411.73	411.72	411.71	411.69	411.68	411.67	
	GROUND SURFACE ELEVATION	409.40	409.38	409.36	409.34	409.31	409.34	409.42	409.41	409.35	409.35	409.35	409.35	409.35	409.35	409.35	
	REDUCED DISTANCE	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	
DISTANCE	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700		
STATION NO.	B.P. +10	K0.000	K0.100	K0.200	K0.300	K0.400	K0.500	K0.600	K0.700	K0.800	K0.900	K1.000	K1.100	K1.200	K1.300	K1.400	K1.500



DESIGN	CANAL TYPE	$Q = 3.15 \text{ m}^3/\text{s}$, $I = 1/10,000$, $h = 1.22 \text{ m}$, $v = 0.40 \text{ m/s}$			
	CANAL BANK ELEVATION	413.67	413.66	413.65	413.64
	WATER SURFACE ELEVATION	412.89	412.88	412.87	412.86
	CANAL BASE ELEVATION	411.67	411.66	411.65	411.64
	GROUND SURFACE ELEVATION	410.49	410.48	410.47	410.46
	REDUCED DISTANCE	1500	1500	1700	1800
DISTANCE	100	100	100	20	
STATION NO.	K1500	K1600	K1700	K1800	E.P.



DESIGN	CANAL TYPE	Lining $Q = 5.02 \text{ m}^3/\text{s}$, $I = 1/10,000$, $h = 1.32 \text{ m}$, $v = 0.44 \text{ m/s}$				
	CANAL BANK ELEVATION	413.32	413.31	413.30	413.29	
	WATER SURFACE ELEVATION	412.74	412.73	412.72	412.71	
	CANAL BASE ELEVATION	411.42	411.41	411.40	411.39	
	GROUND SURFACE ELEVATION	409.40	409.30	409.27	409.17	
	REDUCED DISTANCE	50	100	200	300	
DISTANCE	0	50	100	100		
STATION NO.	B.P. +10	K0.000	K0.200	K0.300	K0.400	E.P.



THE REPUBLIC OF THE SUDAN
 THE HURGA NUR EL DIN
 PUMP SCHEME REHABILITATION PROJECT
 TITLE OF DRAWING
 LINK CANAL AND NEW MAIN CANALS
 PROFILES OF NEW MAIN CANALS
 Date _____ Drawing No. 3007
 JAPAN INTERNATIONAL COOPERATION AGENCY

