

600 mm DIP (Pavement Road)

Work Item and Volume

Excavation	2.70 m³/m
Sand Backfill	1.60 m³/m
Disposal	2.70 m³/m

## Restoration of Asphalt Pavement

Asphalt Concrete     Surface Course     ( t=40mm )	0.084 m³/m
② Asphalt Treated Base Course (t=50mm)	0.105 m³/m
③ Asphalt Treated Base Leveling ( t=50mm )	0.105 m³/m
Crushed Stone or Aggregate ( t=250mm )	0.499 m³/m

600 mm DIP (Field)

## Work Item and Volume

Excavation	2.54 m³/m
Sand Backfill	0.66 m³/m
Soil Backfill	1.57 m³/m
Soil Disposal	0.98 m³/m

450 mm DIP (Field)

## Work Item and Volume

Excavation	2.09 m³/m		
Sand Backfill	0.49 m³/m		
Soil Backfill	1.35 m³/m		
Soil Disposal	0.67 m³/m		

250 mm DIP (Field)

#### Work Item and Volume

Excavation	1.39 m³/m					
Sand Backfill	0.29 m³/m					
Soil Backfill	1.04 m³/m					
Soil Disposal	0.35 m³/m					

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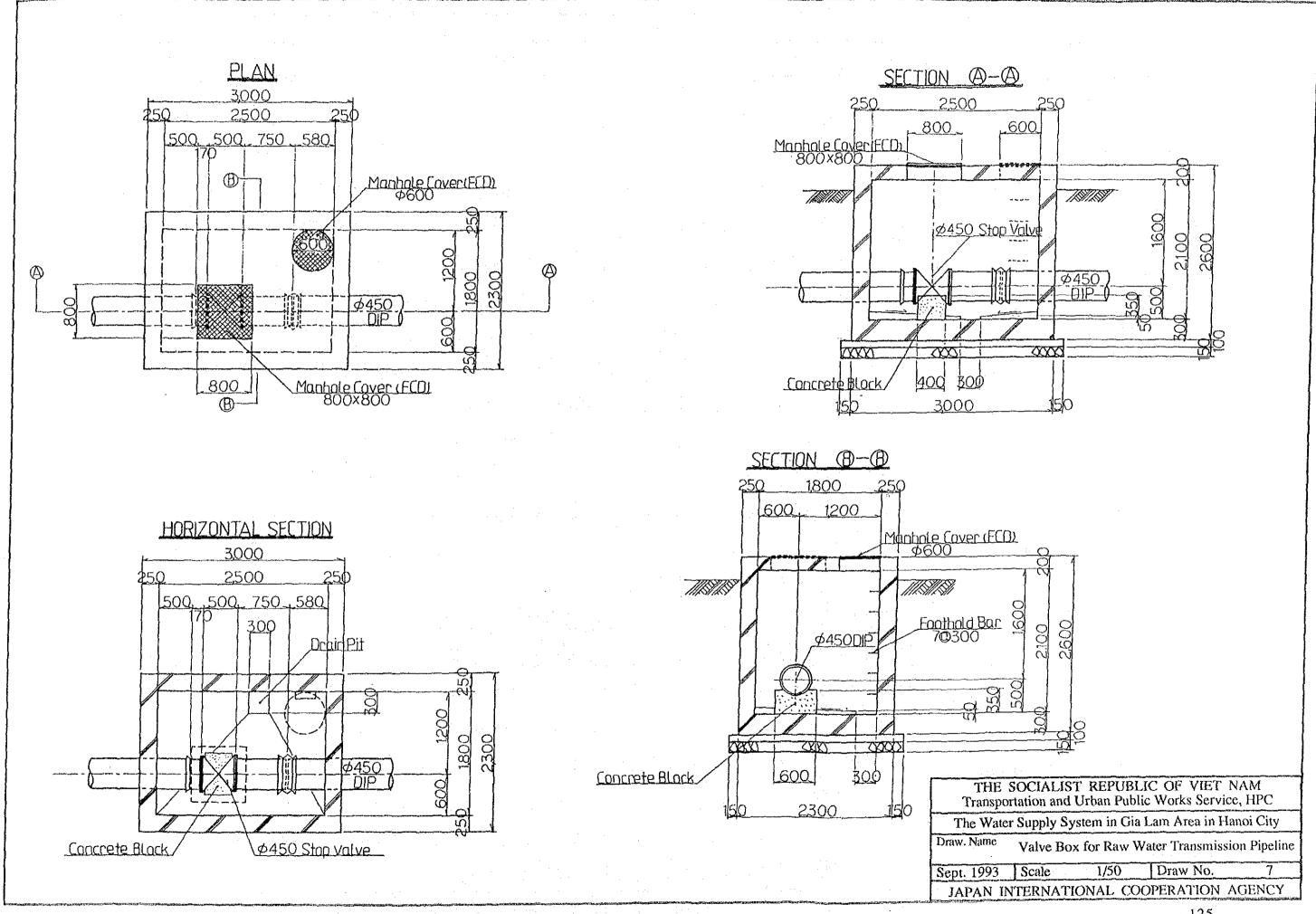
The Water Supply System in Gia Lam Area in Hanoi City

Draw. Name Trench Work Standard of Raw Water Transmission Pipeline

Sept. 1993 | Scale | Draw No. 6

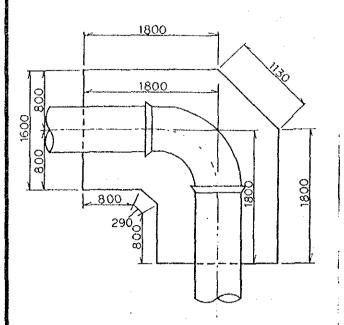
JAPAN INTERNATIONAL COOPERATION AGENCY

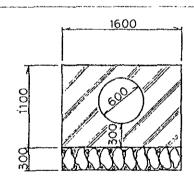
- 124 -



#### ø600x90\* Bend

#### Nos. of Place: 4



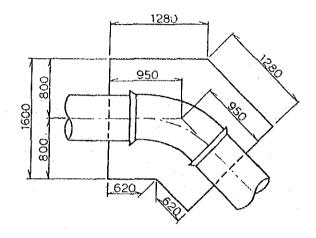


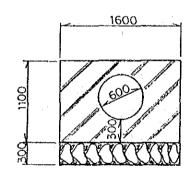
#### Material ner Ilnit

Material per Unit						
Concrete	4.79 (m3)					
Form Work	10.18 (m2)					
Foundation Stone	1.59 (m3)					

#### ø600x45\* Bend

Nos. of Place: 21+8=29



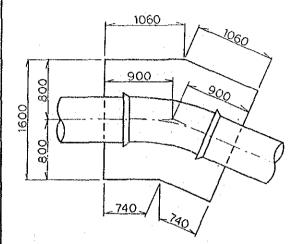


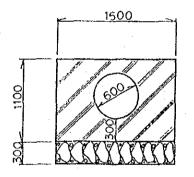
## Material per Unit

Concrete	2.75 (m3)
Form Work	7.07 (m2)
Foundation Stone	0.91 (m3)

## ø600x22\* 1/2 Bend

Nos. of Place: 12+4=16



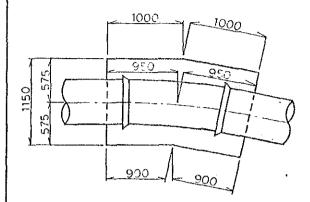


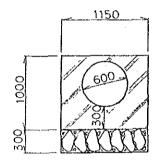
#### Material per Unit

Concrete	2.61 (m3)
Form Work	6.85 (m2)
Foundation Stone	0.86 (m3)

## ø600x11° 1/4 Bend

Nos. of Place: 6+4=10





#### Material per Unit

	Tracecor very look	~
-	Concrete	1.59 (m3)
	Form Work	5.47 (m2)
İ	Foundation Stone	0.66 (m3)

THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC

The Water Supply System in Gia Lam Area in Hanoi City

Draw. Name Raw Water Transmission Pipeline Concrete

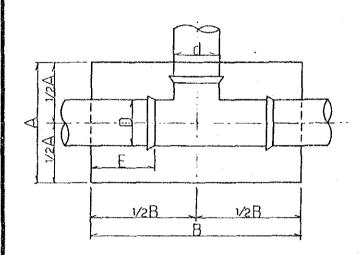
Works for Bends & Tees (1)

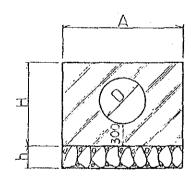
Sept. 1993 | Scale | Draw No. | 8

JAPAN INTERNATIONAL COOPERATION AGENCY

Tee

Nos. of Place ø600 x ø600 : 1 ø600 x ø400 : 2 ø450 x ø300 : 4 ø400 x ø300 : 1 ø250 x ø250 : 1



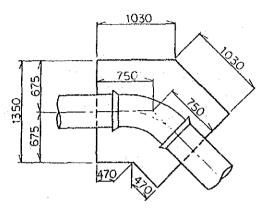


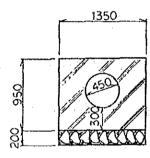
Dimension / Material per Unit

Dimension / Waterial per Unit														
Dimension (mm)				Material										
				Concrete		•								
Α	В	E	E	E	E	E	E	H	E H	H	.h	7	Work	Stone
				L	(m3)	(m2)	(m3)							
1,600	2,800	850	1,100	300	3.90	8.75	1.35							
1,600	2,800	850	1,100	300	3.98	8.92	1.35							
1,350	2,100	610	950	200	2.28	6.12	0.57							
1,300	1,800	490	900	200	1.81	5.21	0.47							
785	1,250	200	<b>4</b> 65	150	0.36	1.71	0.15							
	A 1,600 1,600 1,350 1,300	A B  1,600 2,800  1,600 2,800  1,350 2,100  1,300 1,800	Dimension A B E  1,600 2,800 850 1,600 2,800 850 1,350 2,100 610 1,300 1,800 490	Dimension (mm)       A     B     E     H       1,600     2,800     850     1,100       1,600     2,800     850     1,100       1,350     2,100     610     950       1,300     1,800     490     900	Dimension (mm)  A B E H h  1,600 2,800 850 1,100 300  1,600 2,800 850 1,100 300  1,350 2,100 610 950 200  1,300 1,800 490 900 200	Dimension (mm)         M           A         B         E         H         h         Concrete (m3)           1,600         2,800         850         1,100         300         3.90           1,600         2,800         850         1,100         300         3.98           1,350         2,100         610         950         200         2.28           1,300         1,800         490         900         200         1.81	Dimension (mm)   Material							

## ø450x45° Bend

Nos. of Place: 8+4=12



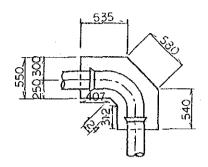


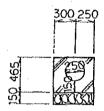
# Material per Unit

Concrete	1.66 (m3)
Form Work	5.06 (m2)
Foundation Stone	0.41 (m3)

#### ø250x90° Bend

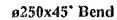
Nos. of Place: 16



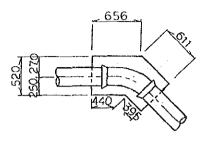


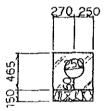
#### Material per Unit

Concrete	0.26 (m3)
Form Work	1.60 (m2)
Foundation Ston	e 0.11 (m3)



Nos. of Place: 1





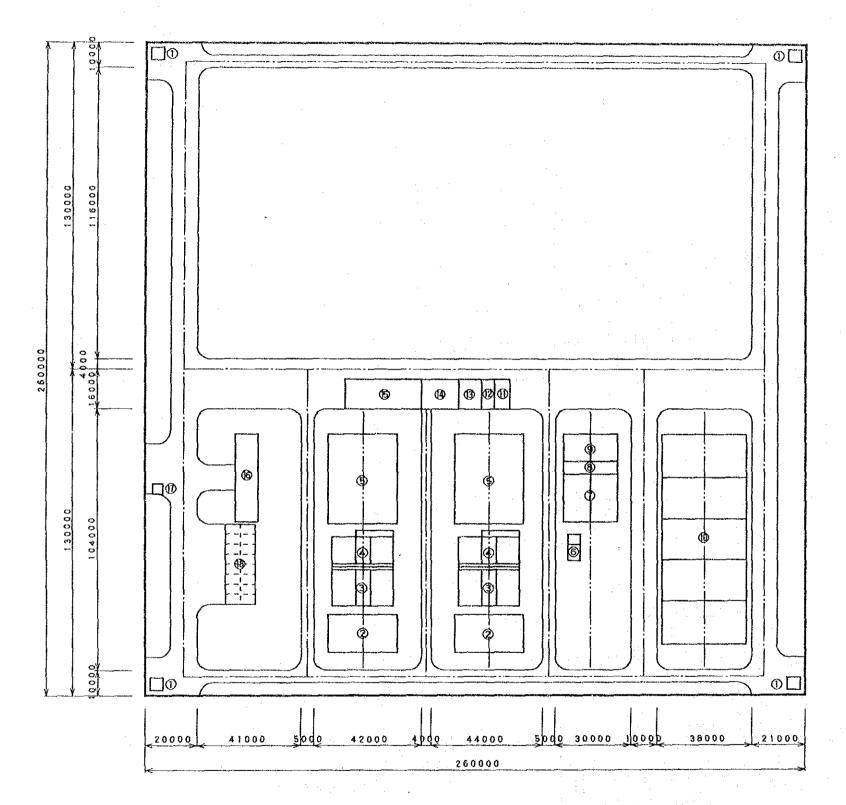
Material per Unit

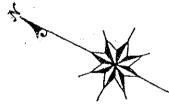
ĺ	Concrete	0.19 (m3
	Form Work	1.34 (m2
	Foundation Stone	0.08 (m3

THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC

The Water Supply System in Gia Lam Area in Hanoi City Raw Water Transmission Pipeline Concrete Works for Bends & Tees (2) Draw, Name

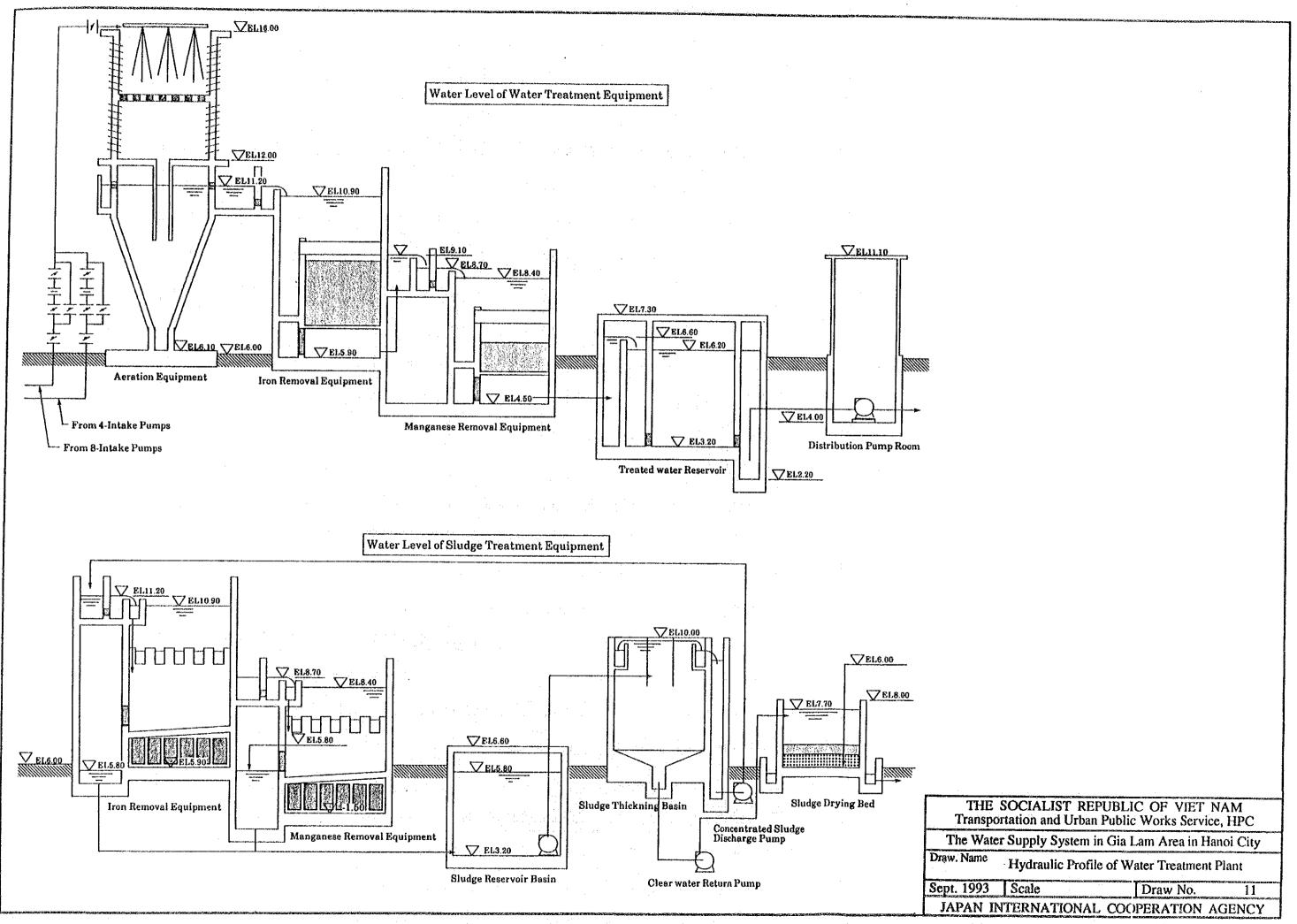
Sept. 1993 | Scale Draw No. JAPAN INTERNATIONAL COOPERATION AGENCY

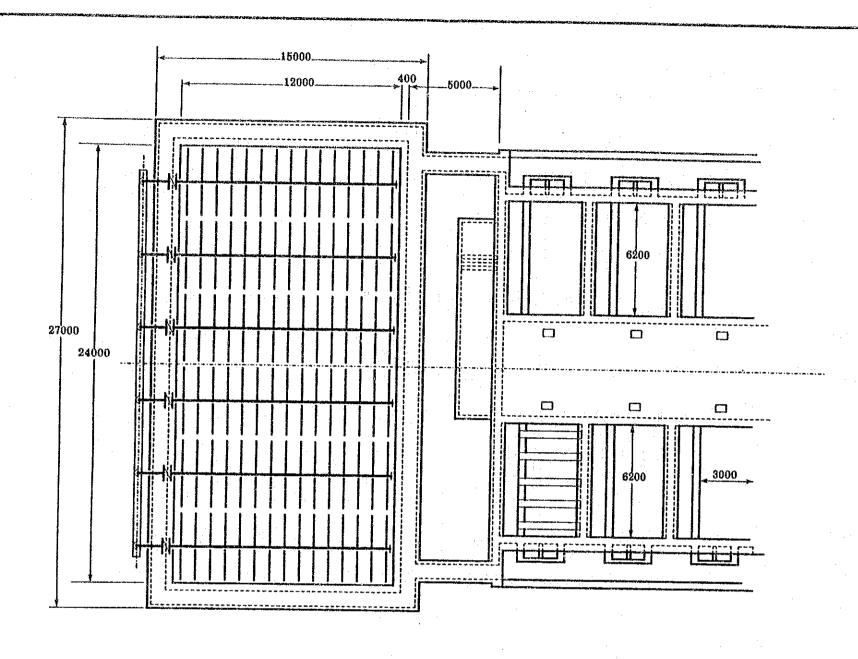


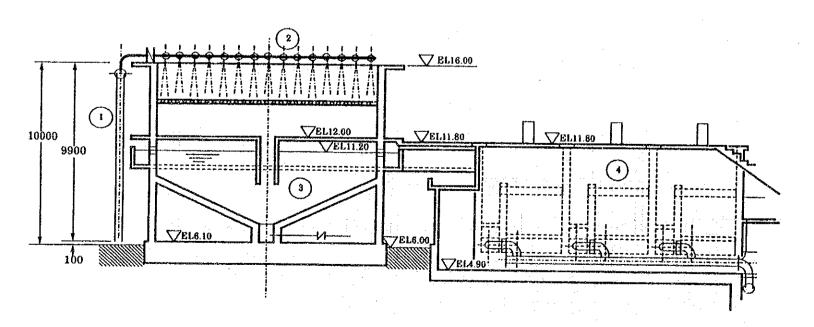


1	Intake Well House		
2	Aeration and Sedimentation Equipment		
3	Iron Removal Equipment		
(4) Manganese Removal Equipment			
(5) Reservoir Tank			
6	Chlorination Equipment		
7	Sludge Reservoir Basin		
8	Sludge Treatment Room		
9	Sludge Thichning Basin		
(10)	Sludge Drying Bed		
	D/G Room		
(12)	Transformer Room		
(13)	Electrical Room		
<u>(14)</u>	Control Room		
(15)	Distribution Pump Room		
(6)	Administration Building		
(17)	Guard House		
(18)	Parking Area		

THE Transpo	SOCIALIS	ST REPUBLI I Urban Publi	IC OF VIET No Works Service	AM , HPC	
The Wate	r Supply S	ystem in Gia	Lam Area in Har	noi City	
Draw. Name Layout Plan of Water Treatment Plant					
Sept. 1993	Scale	1/1,500	Draw No.	10	
JAPAN II	NTERNAT	IONAL CO	OPERATION A	GENCY	







1 Raw Water Pipe

Spray Pipe

Hold Tank

Iron Removal Equipment

THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC

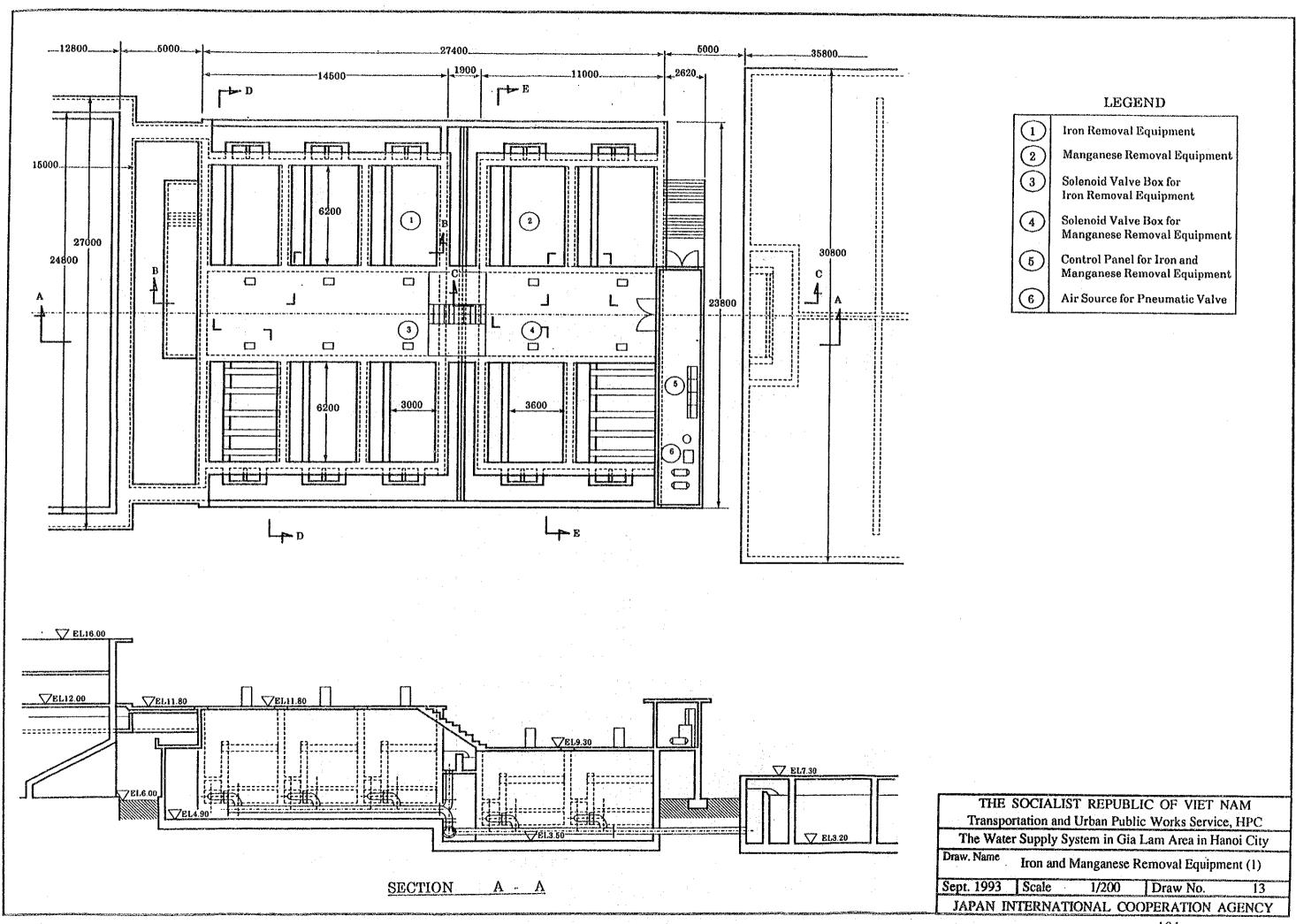
The Water Supply System in Gia Lam Area in Hanoi City

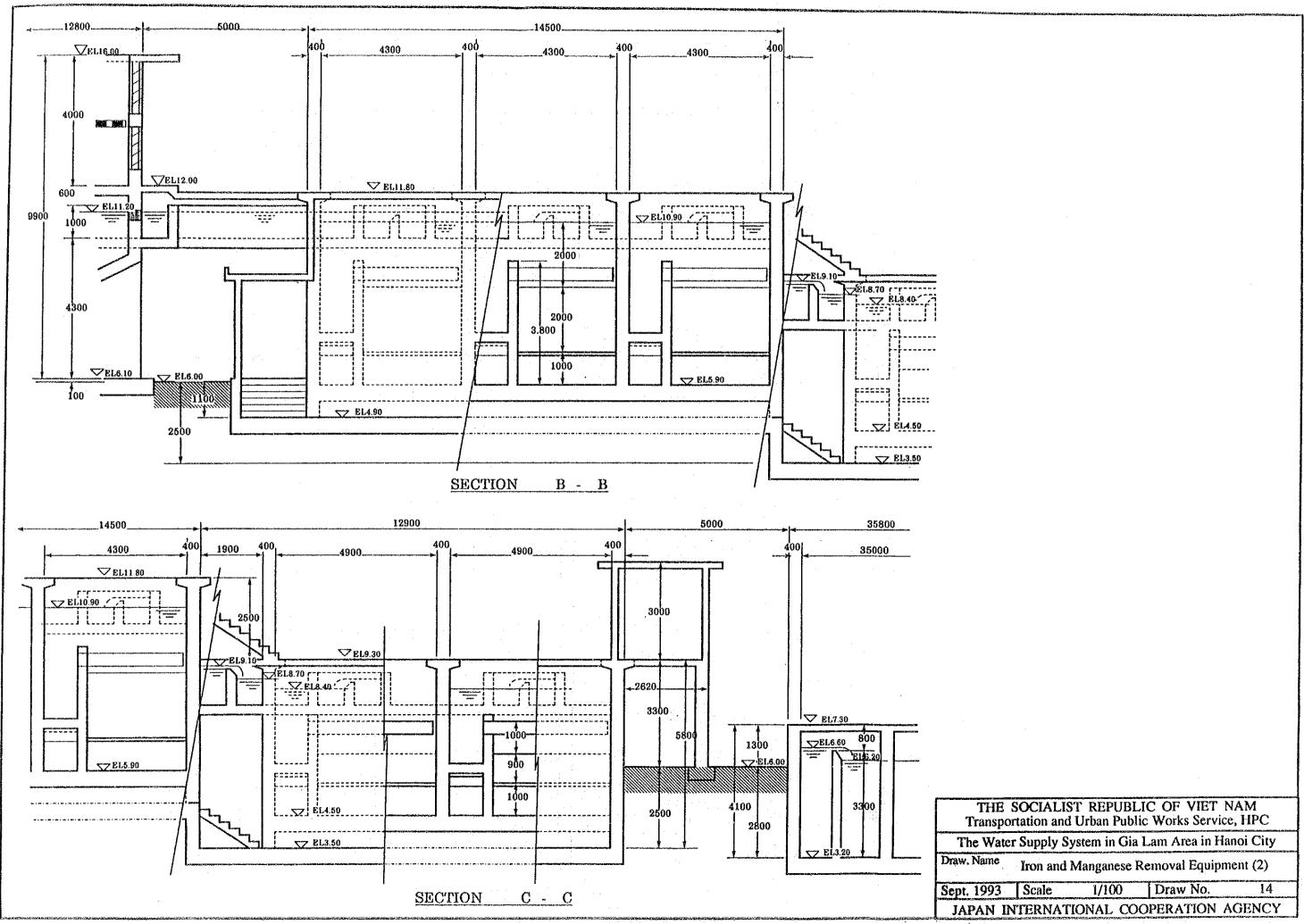
Draw. Name

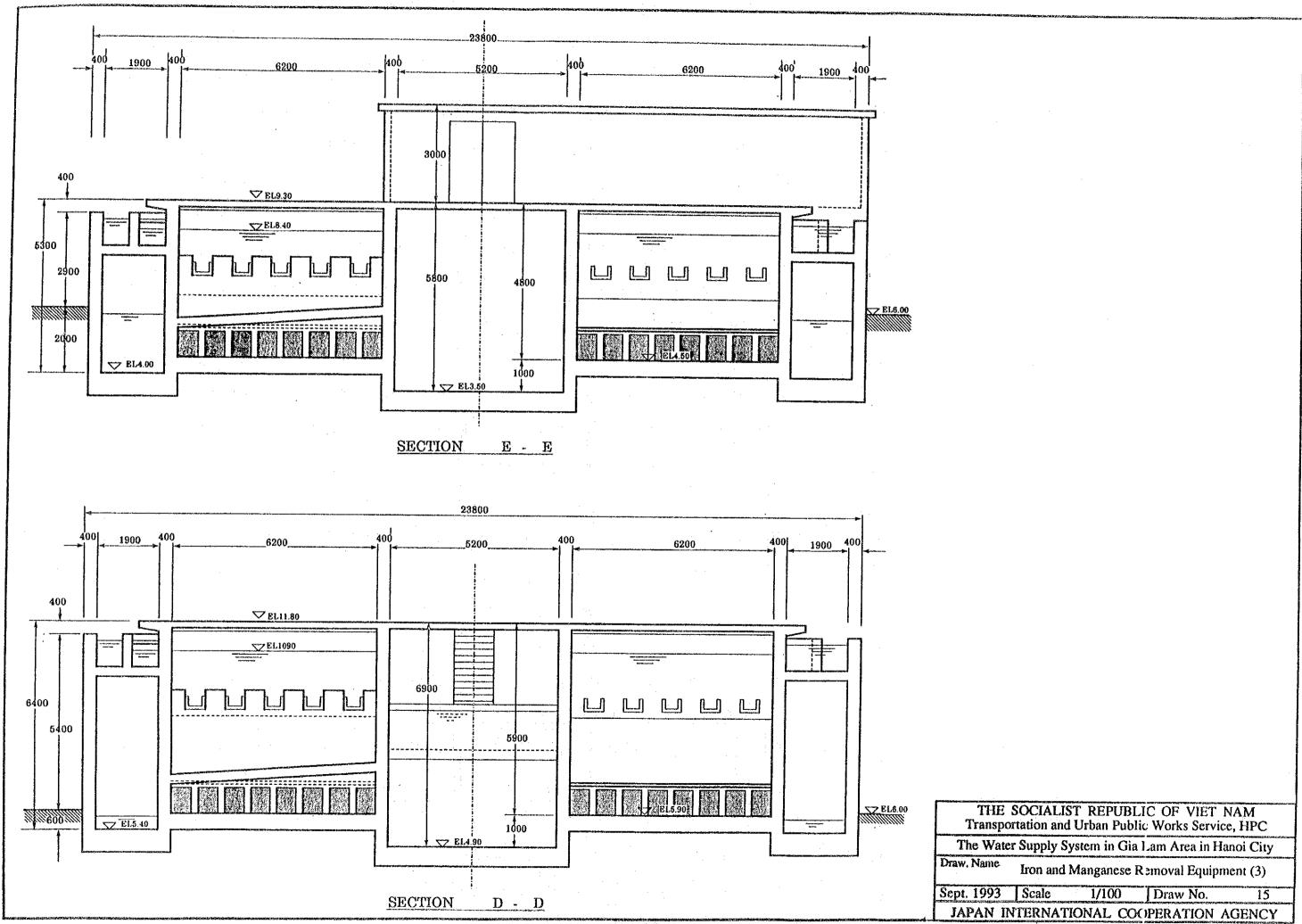
Aeration and Sedimentation Equipment

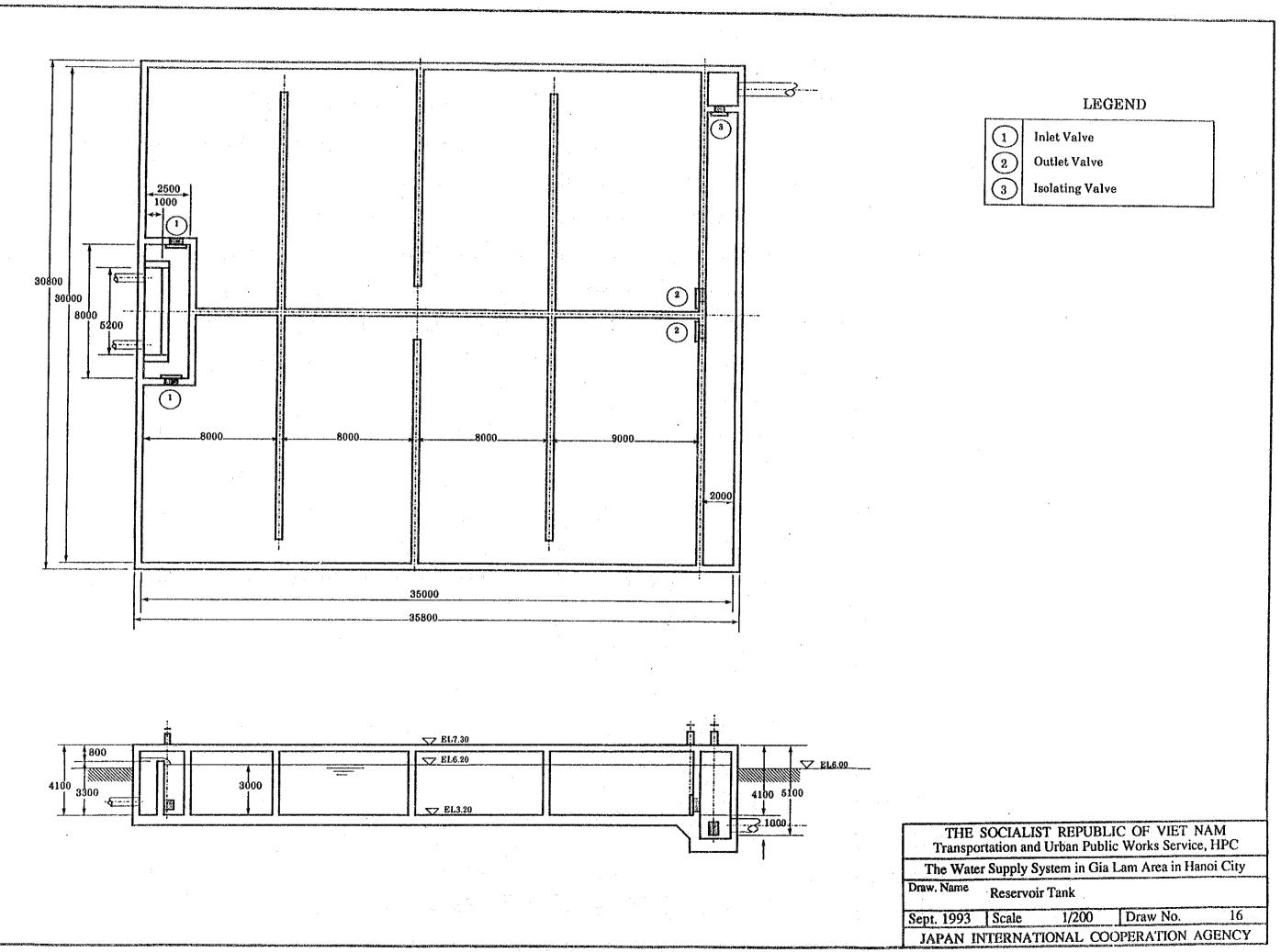
Sept. 1993 | Scale 1/200 | Draw No. 12

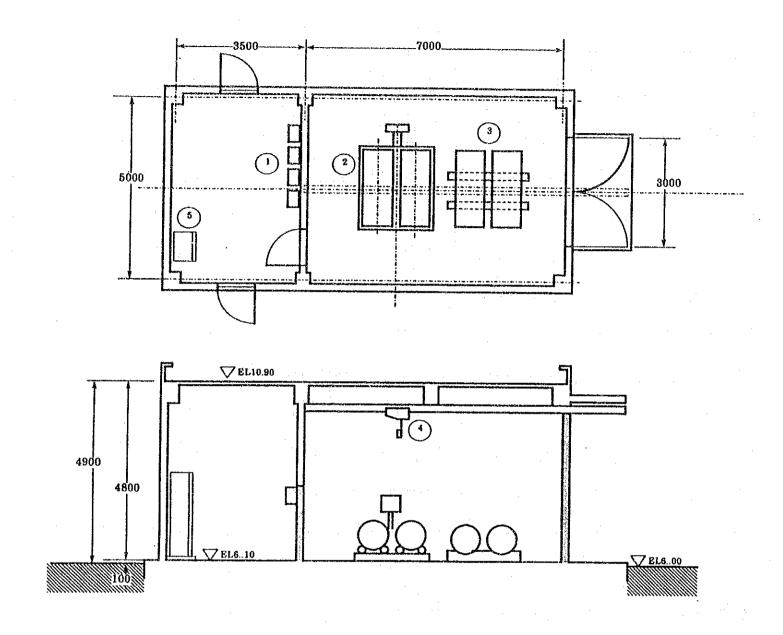
JAPAN INTERNATIONAL COOPERATION AGENCY





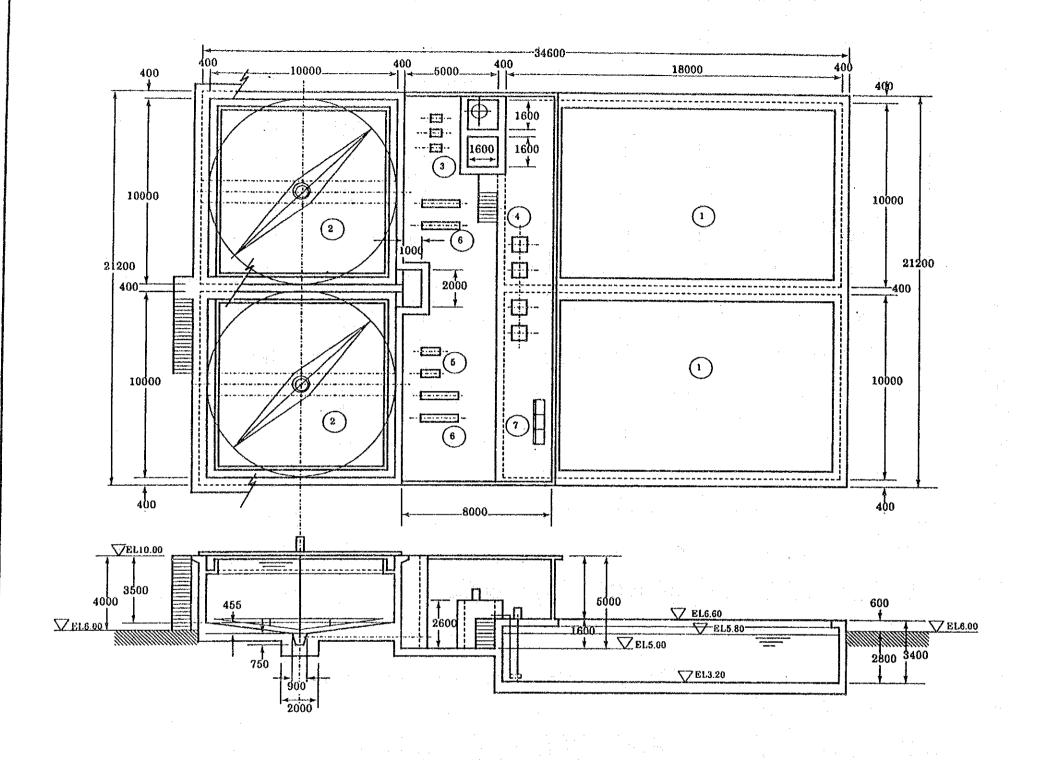






1	Chlorinator
2	Chlorine Weighing Mashine
(3)	Chlorine Container
4	Chain Hoist
5	Control Panel for Chlorination Equipment

THE SOCIALIST REPUBLIC OF VIET NAM
Transportation and Urban Public Works Service, HPC
The Water Supply System in Gia Lam Area in Hanoi City
Draw. Name
Chlorination Equipment
Sept. 1993 | Scale 1/100 | Draw No. 17
JAPAN INTERNATIONAL COOPERATION AGENCY



Sludge Reservoir Basin

Sludge Thickning Basin

Coagulant Dosing Equipment

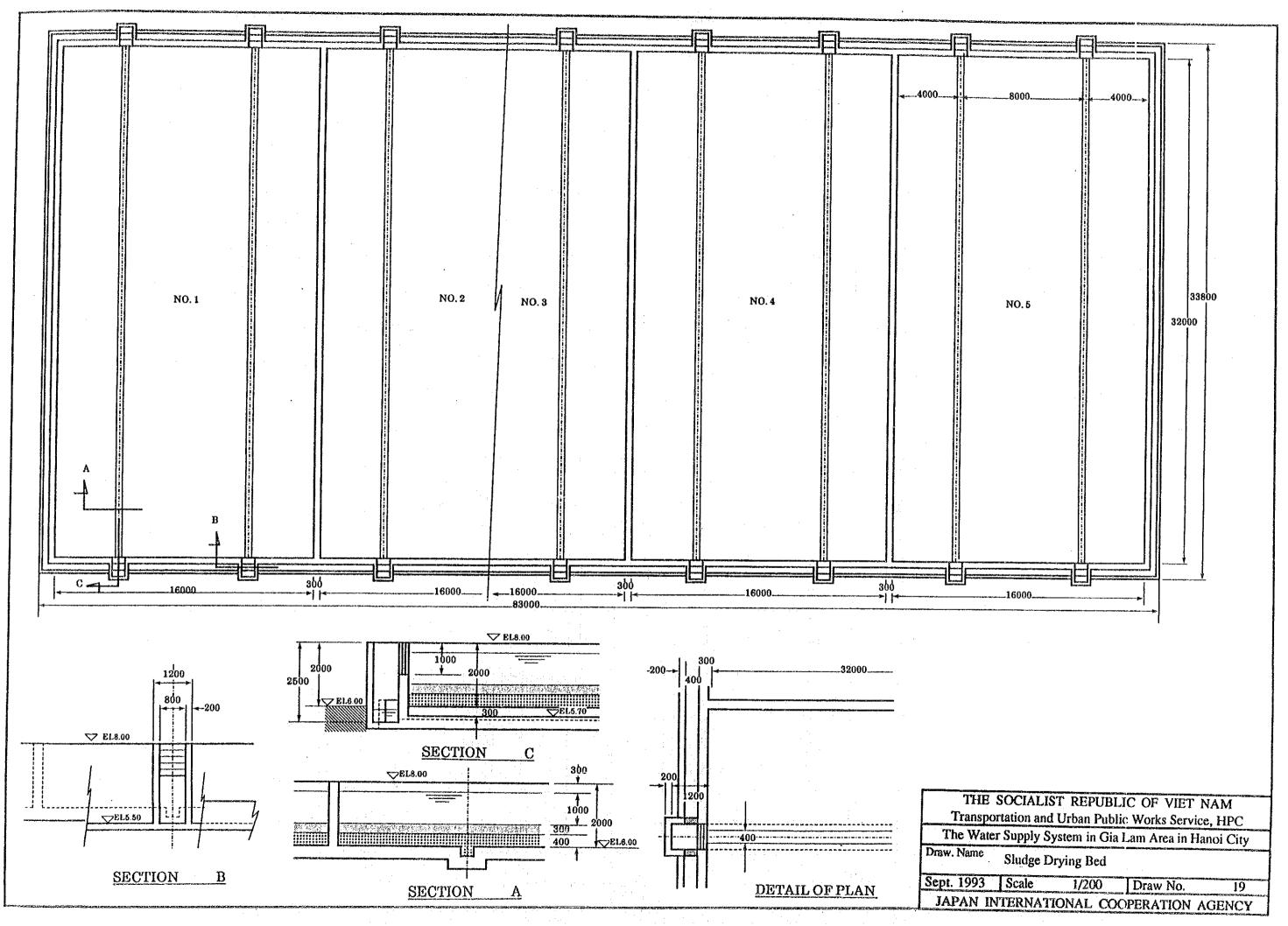
Sludge Transfer Pump

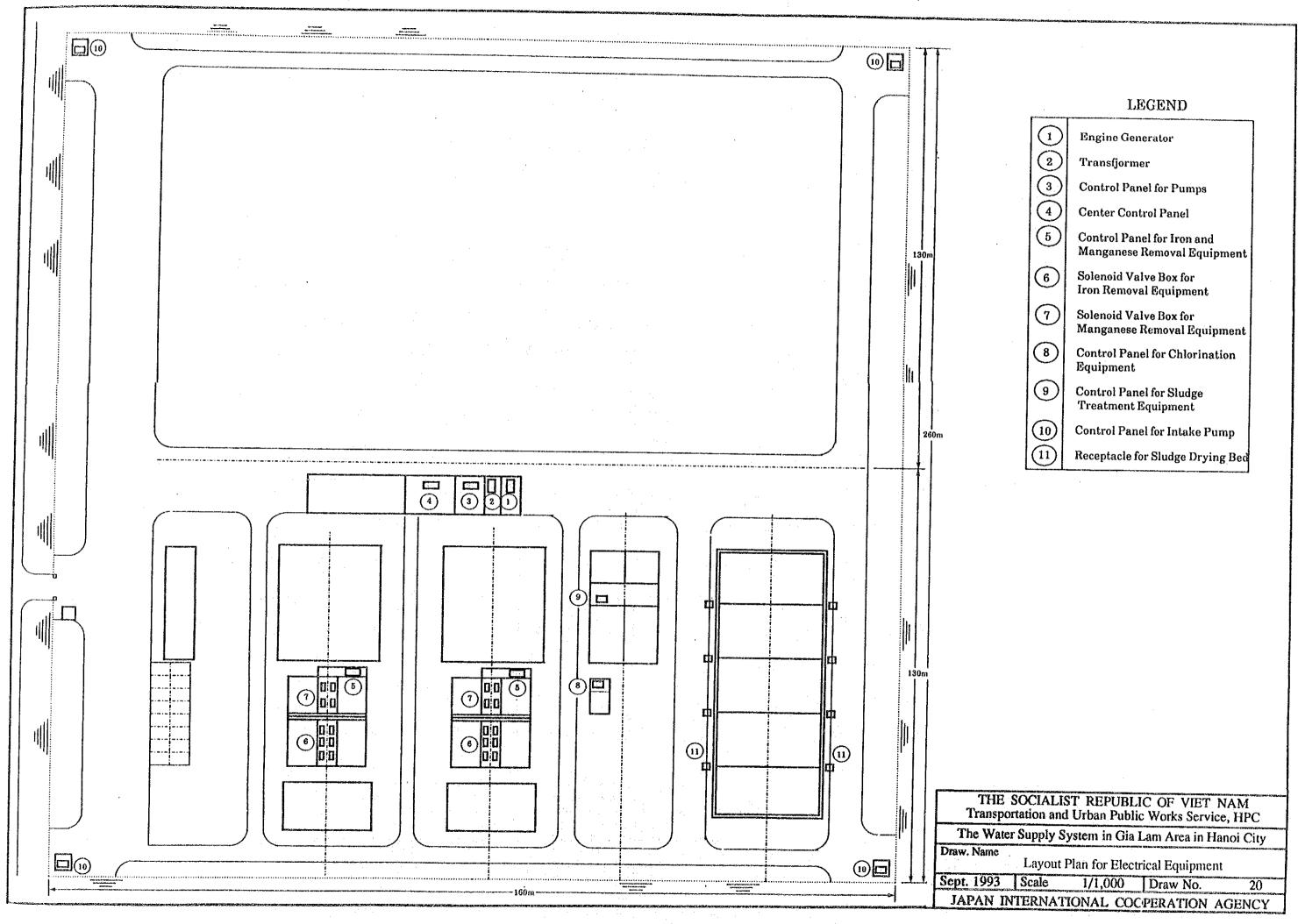
Clear Water Return Pump

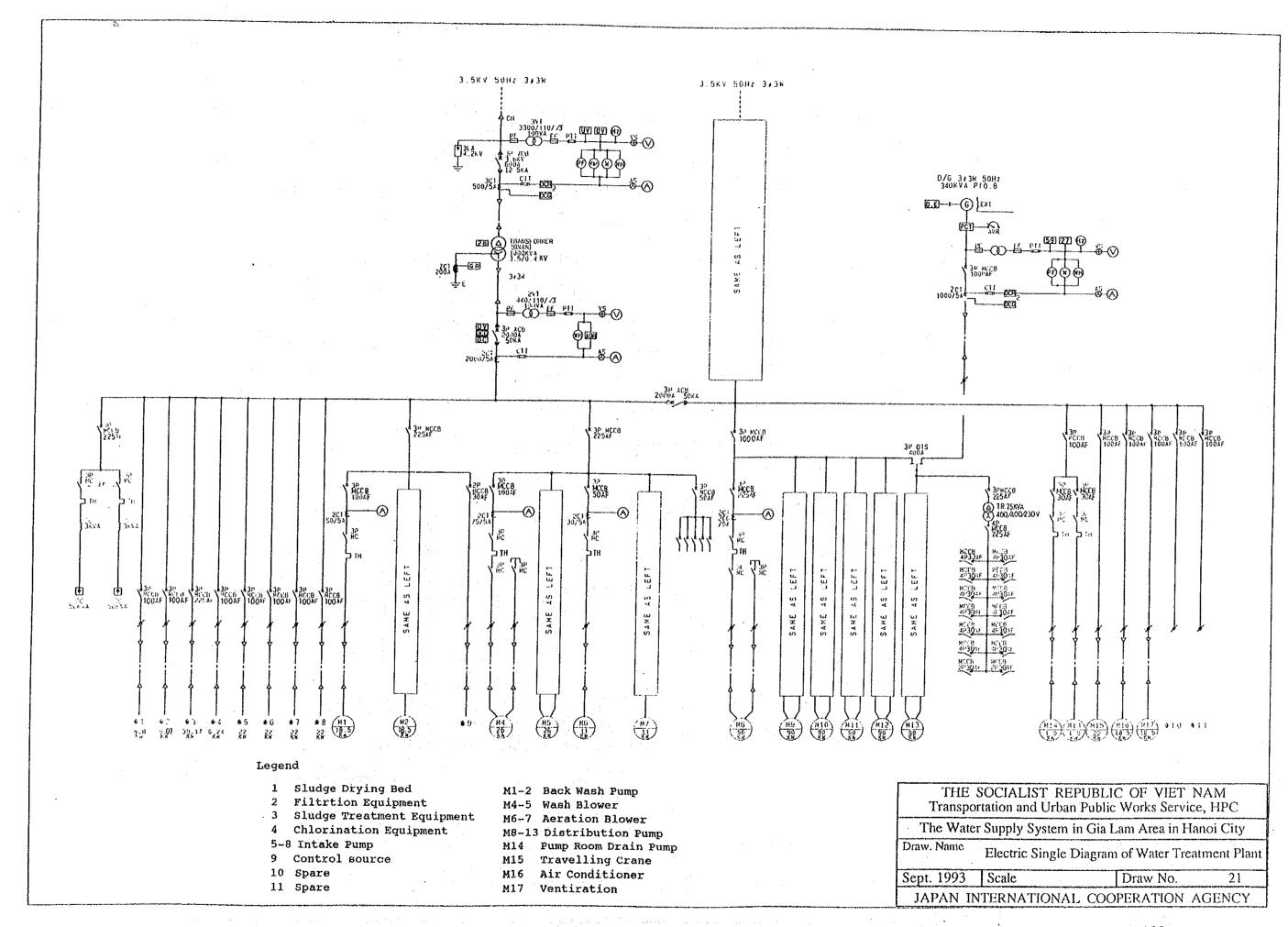
Concentrated Sludge Discharge Pump

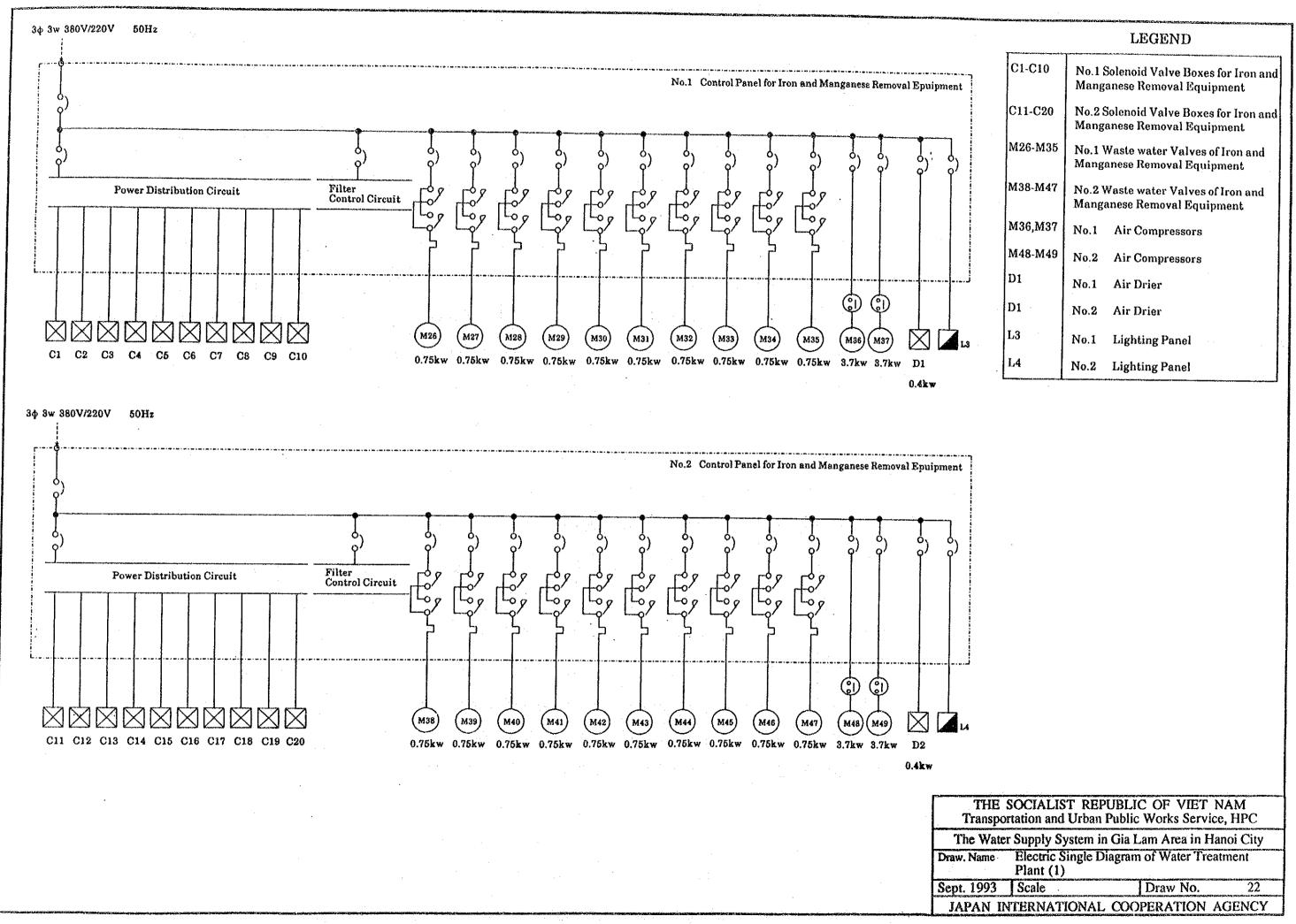
Control Panel for Sludge Treatment Equipment

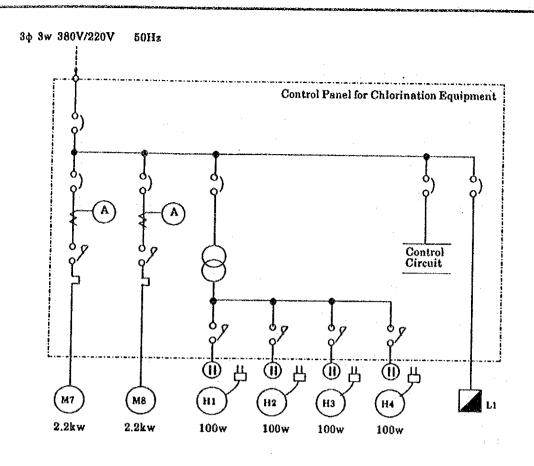
THE SOCIALIST REPUBLIC OF VIET NAM
Transportation and Urban Public Works Service, HPC
The Water Supply System in Gia Lam Area in Hanoi City
Draw. Name
Sludge Treatment Equipment
Sept. 1993 | Scale | 1/200 | Draw No. | 18
JAPAN INTERNATIONAL COOPERATION AGENCY



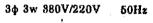


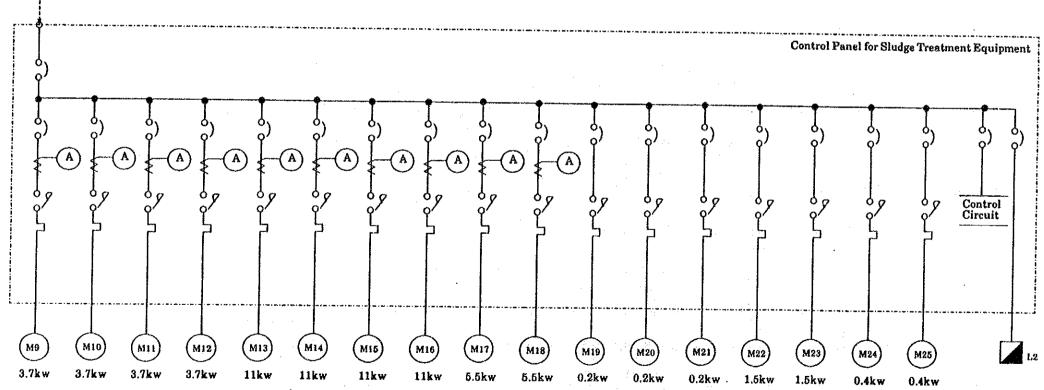






M7-M8	Pressurized Water Pumps		
H1-H4	Chlorinators		
M9-M12	Sludge Transfer Pumps		
M13-M16	Concentrated Sludge Discharge Pump		
M17-M18	Clear Water Return Pumps		
M19-M21	Coagulant Dosing Pumps		
M22-M23	Coagulant Mixers		
M24-M25	Scrapers of Sludge Thickning Basin		
Li	Lighting Panel		
L2	Lighting Panel		





THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC

The Water Supply System in Gia Lam Area in Hanoi City

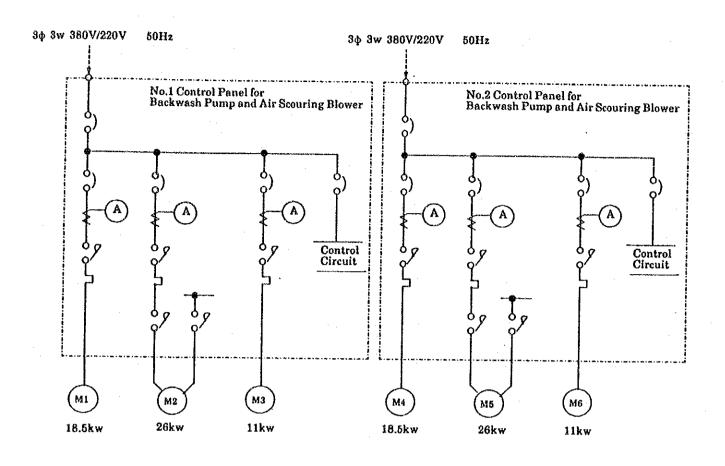
Draw. Name Electric Single Diagram of Water Treatment Plant (2)

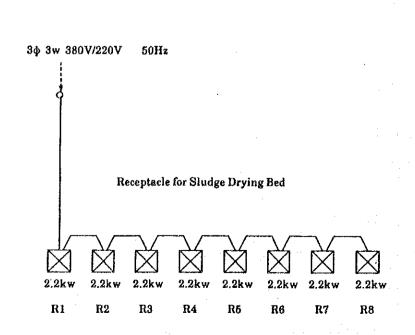
Sept. 1993 | Scale

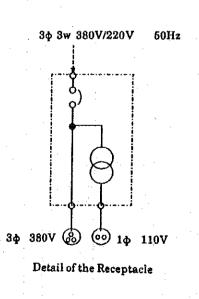
Draw No.

23

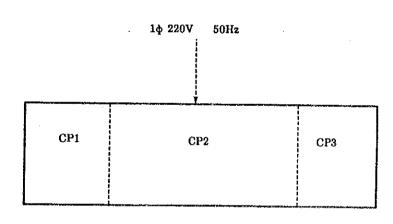
JAPAN INTERNATIONAL COOPERATION AGENCY



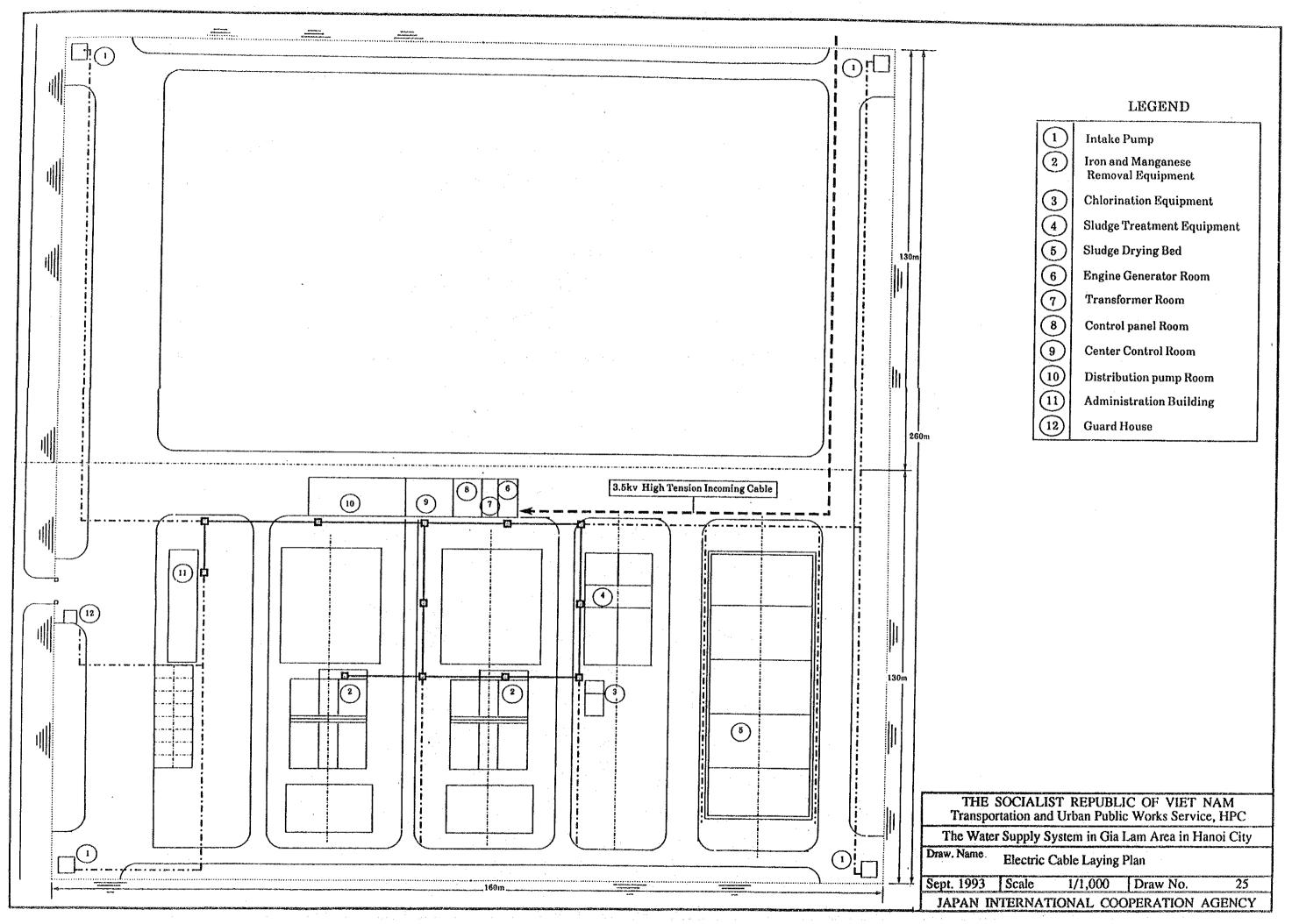


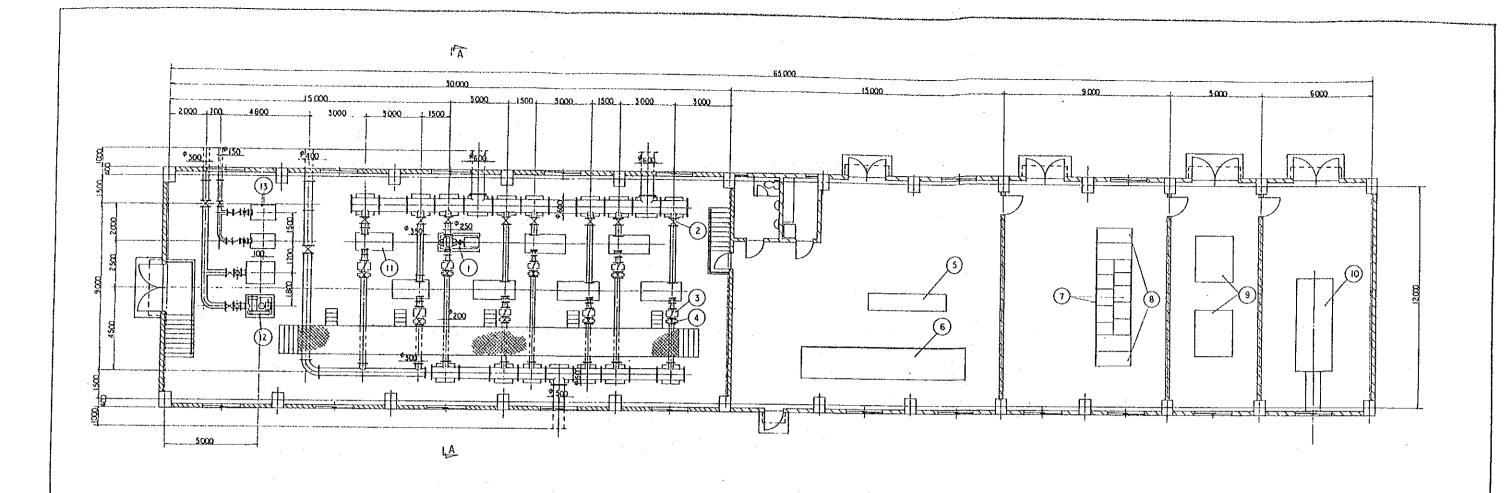


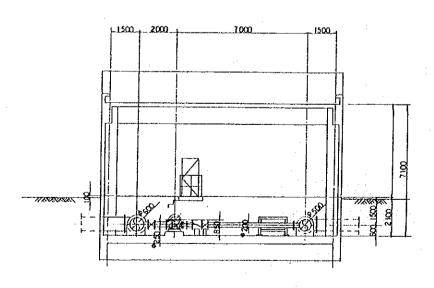
M1	Backwash Pump
M2	Air Scouring Blower
М3	Aeration Blower
M4	Backwash Pump
M5	Air Scouring Blower
M6	Aeration Blower
R1-R8	Receptacles for Sludge Drying Bed
CP1	Center Control Panel for Intake Pumps
CP2	Center Control Panel for Water Treatment Facility
СРЗ	Center Control Panel for Intake Pump



THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC				
The Water Supply System in Gia Lam Area in Hanoi City				
Draw. Name Electric Single Diagram of Water Treatment Plant (3)				
Sept. 1993	Scale	Draw No.	24	
YAPAN II	TERNATIONAL	COOPERATION	<b>AGENCY</b>	







#### Legend

- 1 Distribution Pump
- 2 Suction Gate Valve
- 3 Discharge Check valve
- 4 Discharge Gate Valve
- 5 Operation Desk
- 6 Control panel
- 7 Low Voltage Panel
- 8 Transformer Primary Panel
- 9 Transformer
- 10 Emergency Generator
- 11 Back Wash pump
- 12 Wash Blower
- 13 Aeration Blower

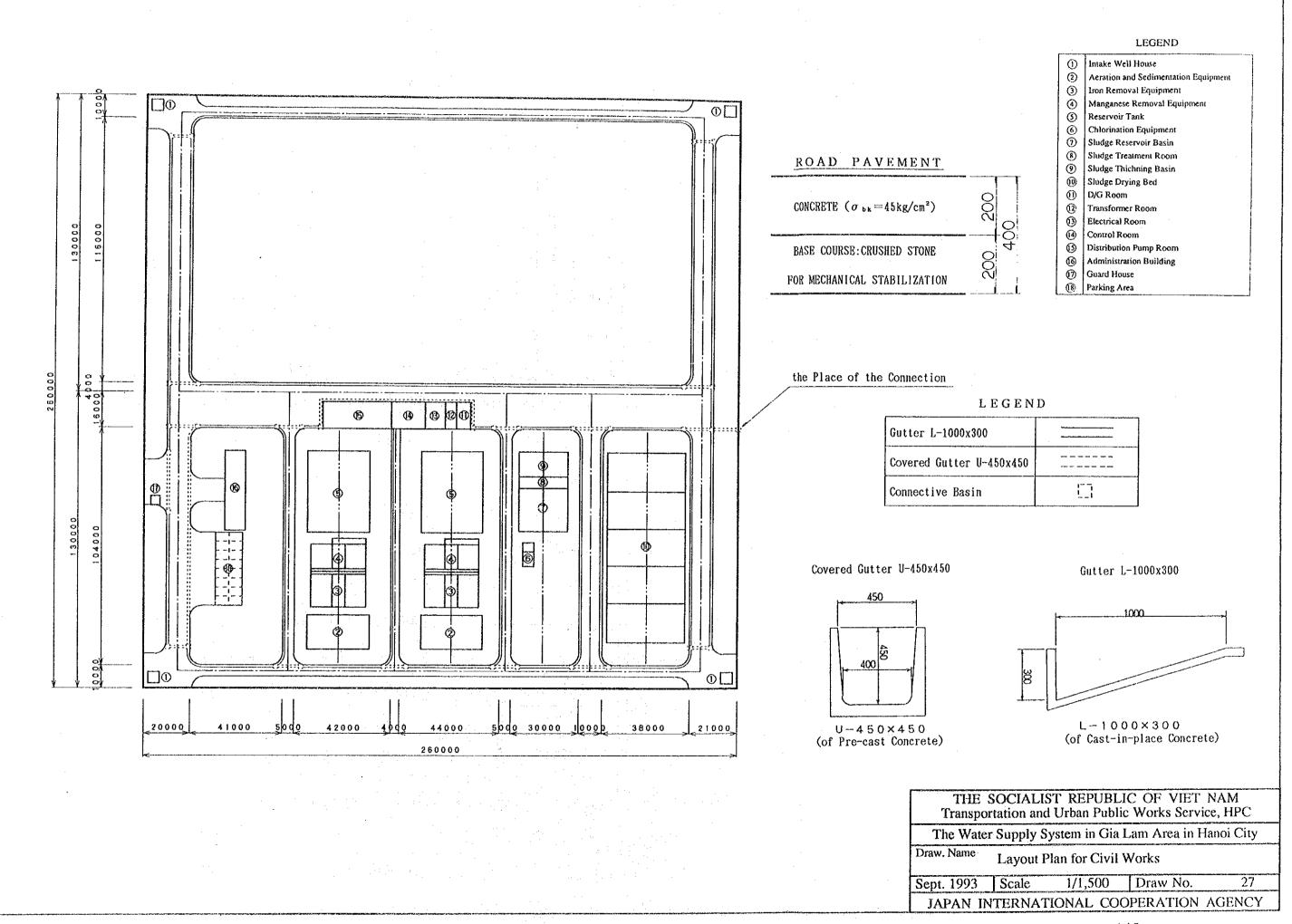
THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC The Water Supply System in Gia Lam Area in Hanoi City

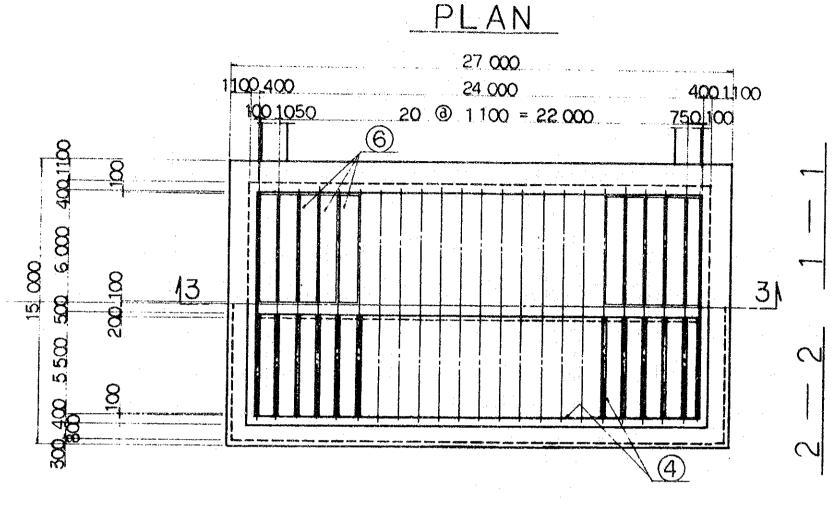
Draw, Name Distribution Pump

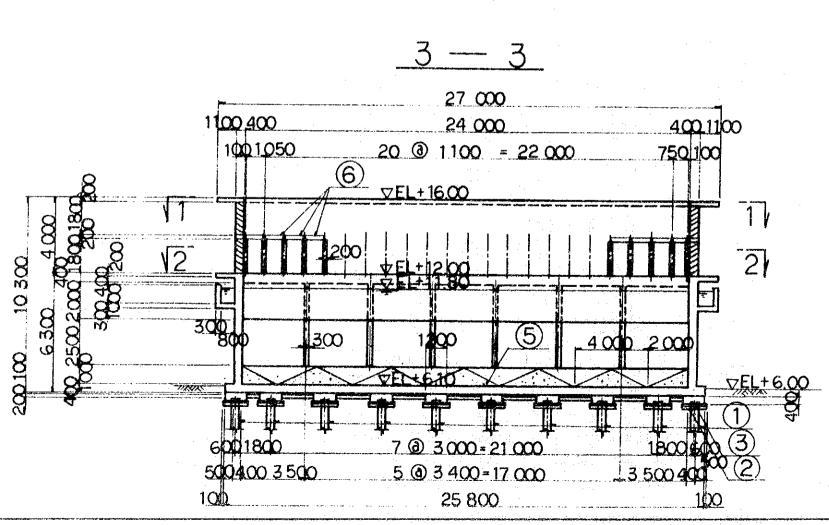
Sept. 1993 | Scale | 1/100 | Draw No.

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1	reinforced concrete pile		
2	gravel		
3	leveling concrete		
4	waterproof coating		
(5)	plain concrete		
6	babble board		
7	U-type flame		
8	filter sand		
9	filter concrete bed		
<b>1</b>	filter gravel		
<b>(</b> )	flash board		

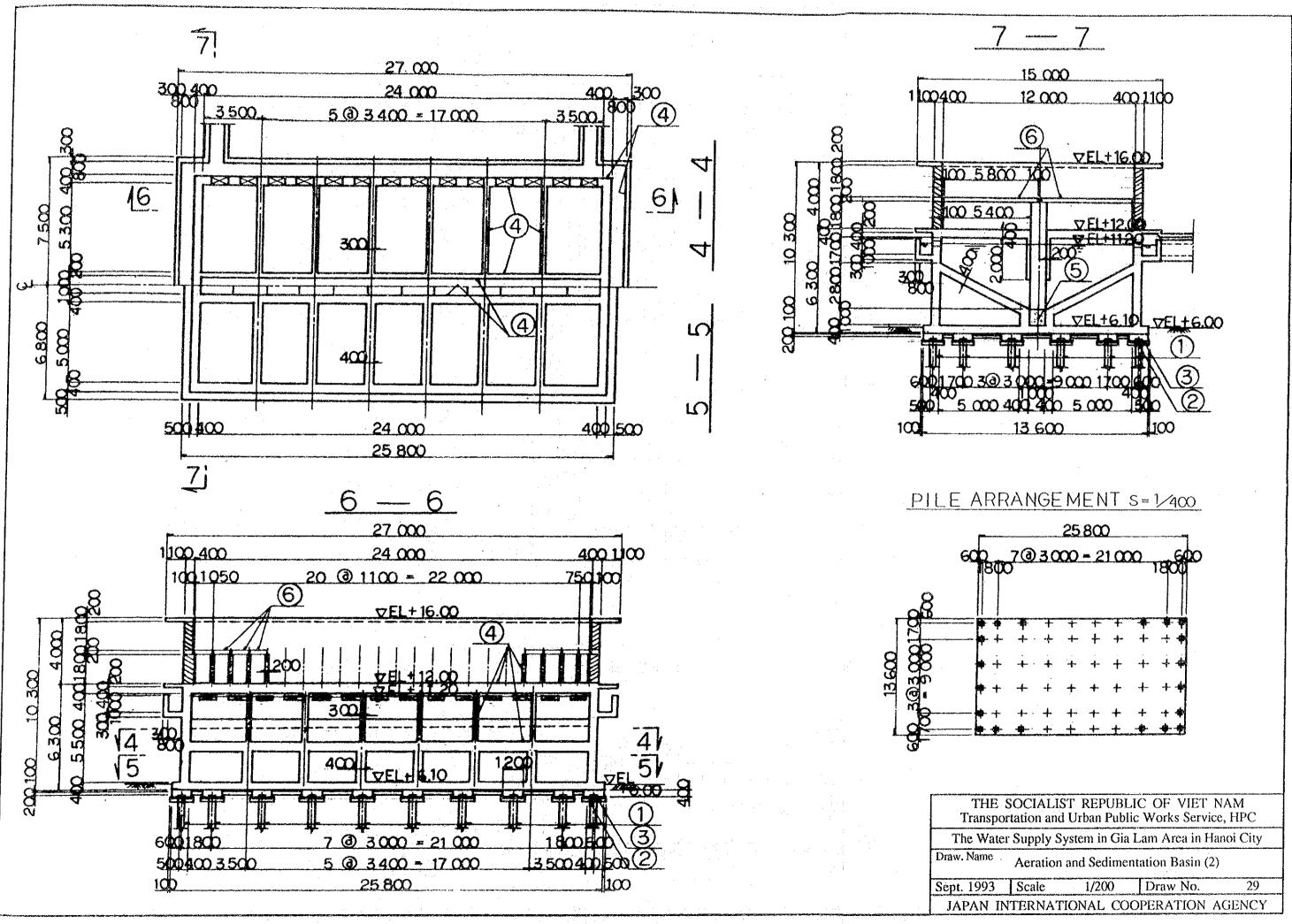
THE SOCIALIST REPUBLIC OF VIET NAM
Transportation and Urban Public Works Service, HPC

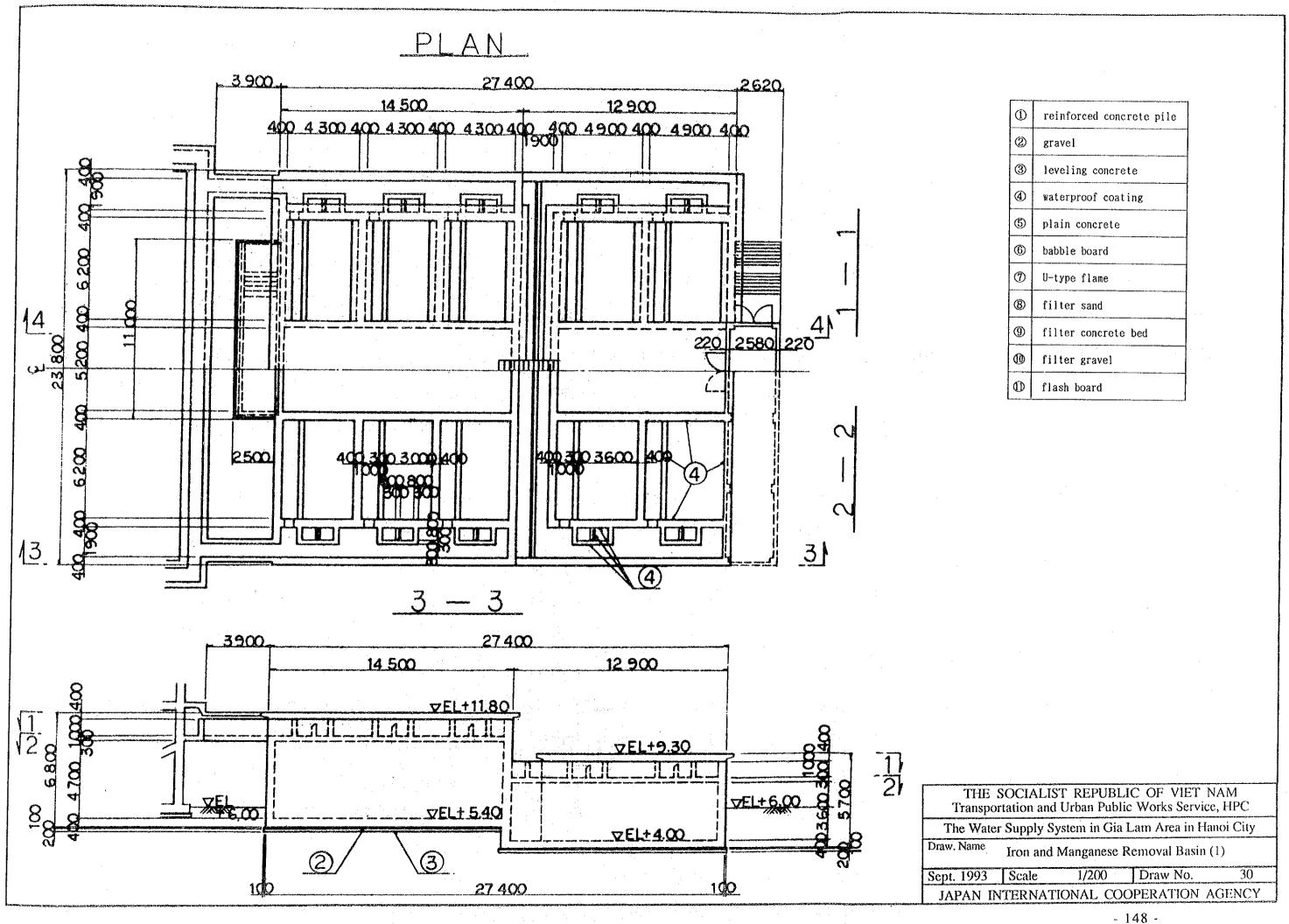
The Water Supply System in Gia Lam Area in Hanoi City

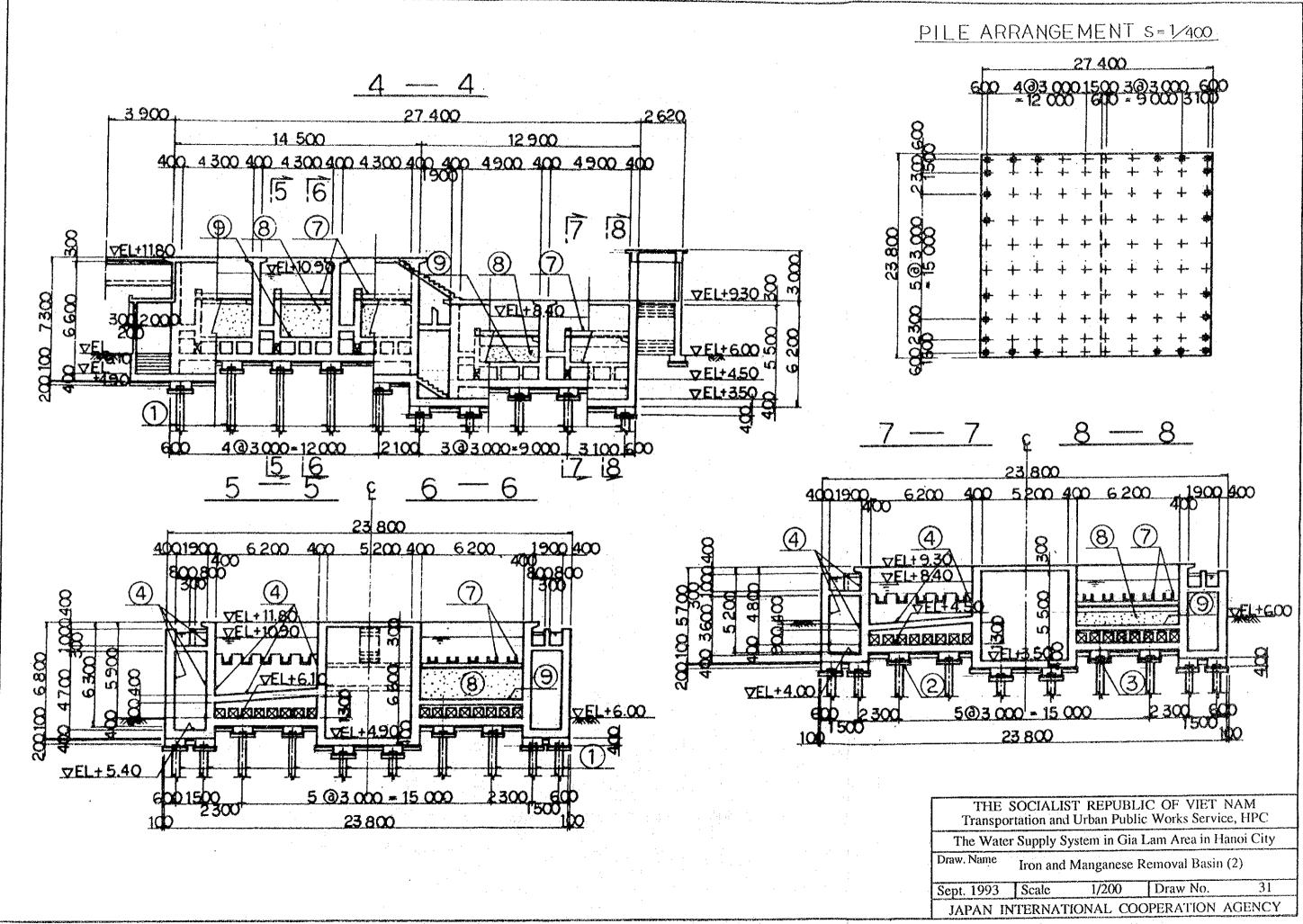
Draw. Name
Aeration and Sedimentation Basin (1)

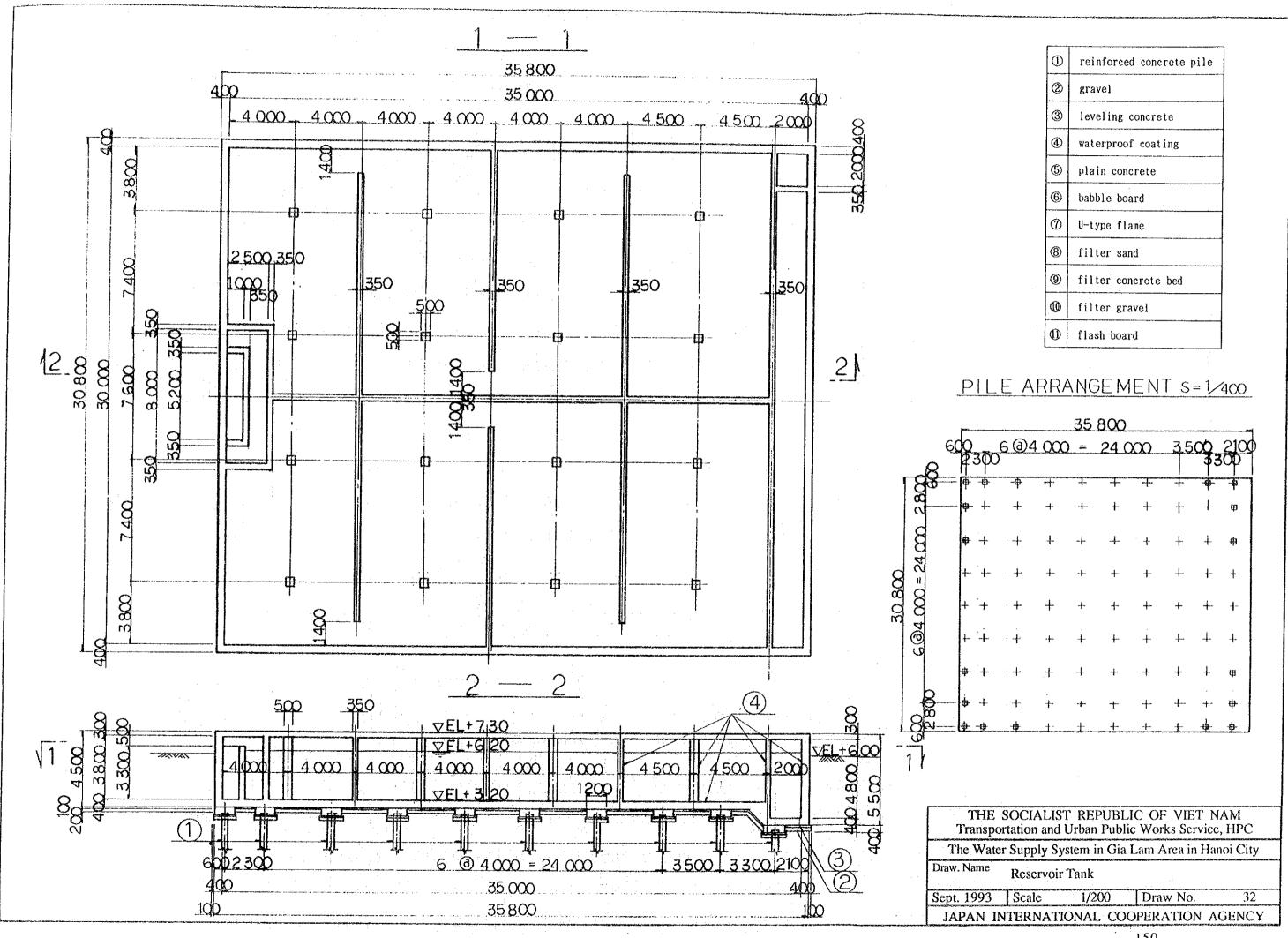
Sept. 1993 | Scale | 1/200 | Draw No. | 28

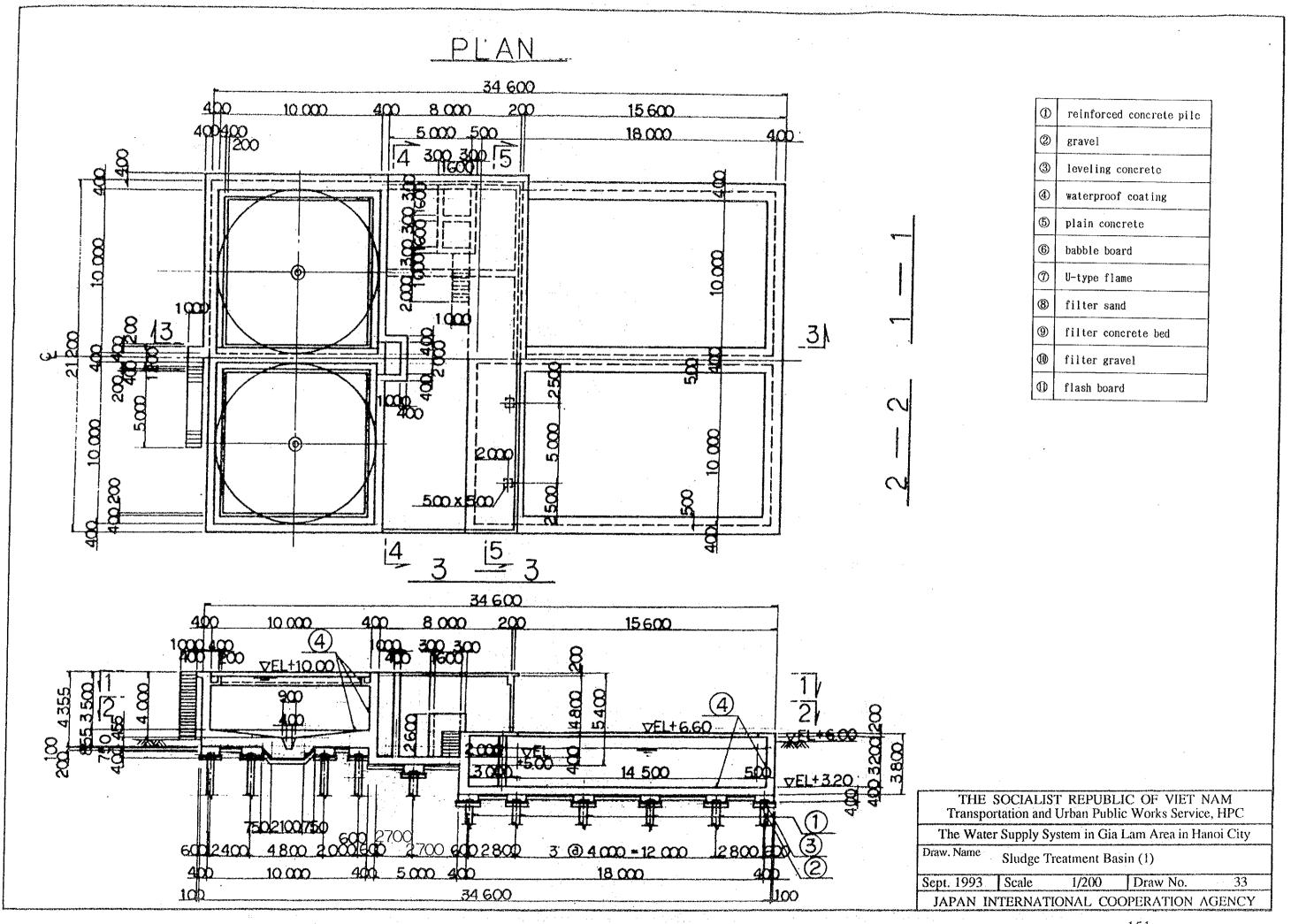
JAPAN INTERNATIONAL COOPERATION AGENCY

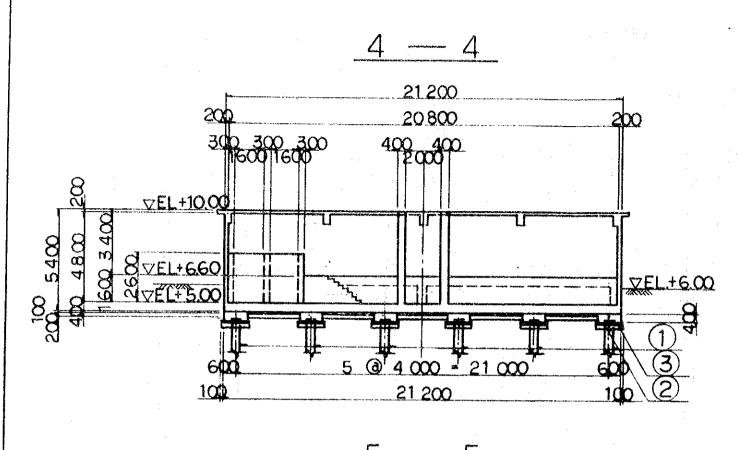


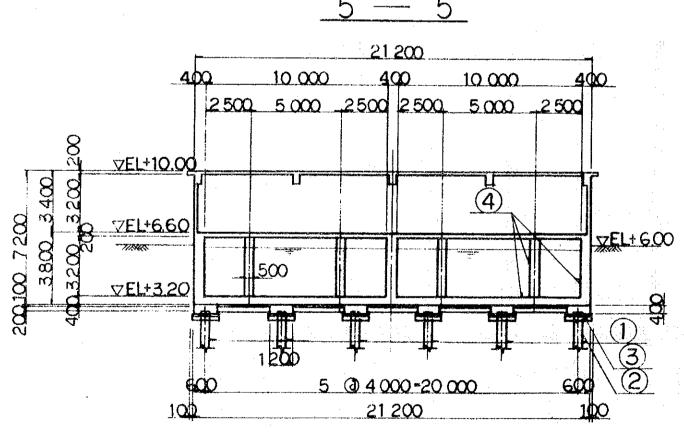




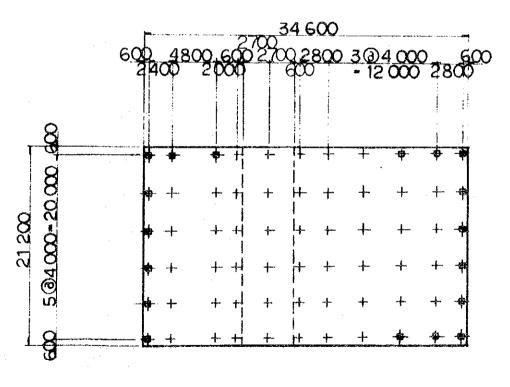








# PILE ARRANGEMENT S=1/400



THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC					
The Water Supply System in Gia Lam Area in Hanoi City					
Draw. Name Sludge Treatment Basin (2)					
Sept. 1993	Scale	1/200	Draw No.	34	
 JAPAN INTERNATIONAL COOPERATION AGENCY					

