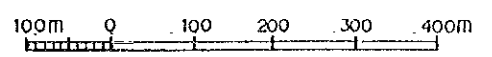
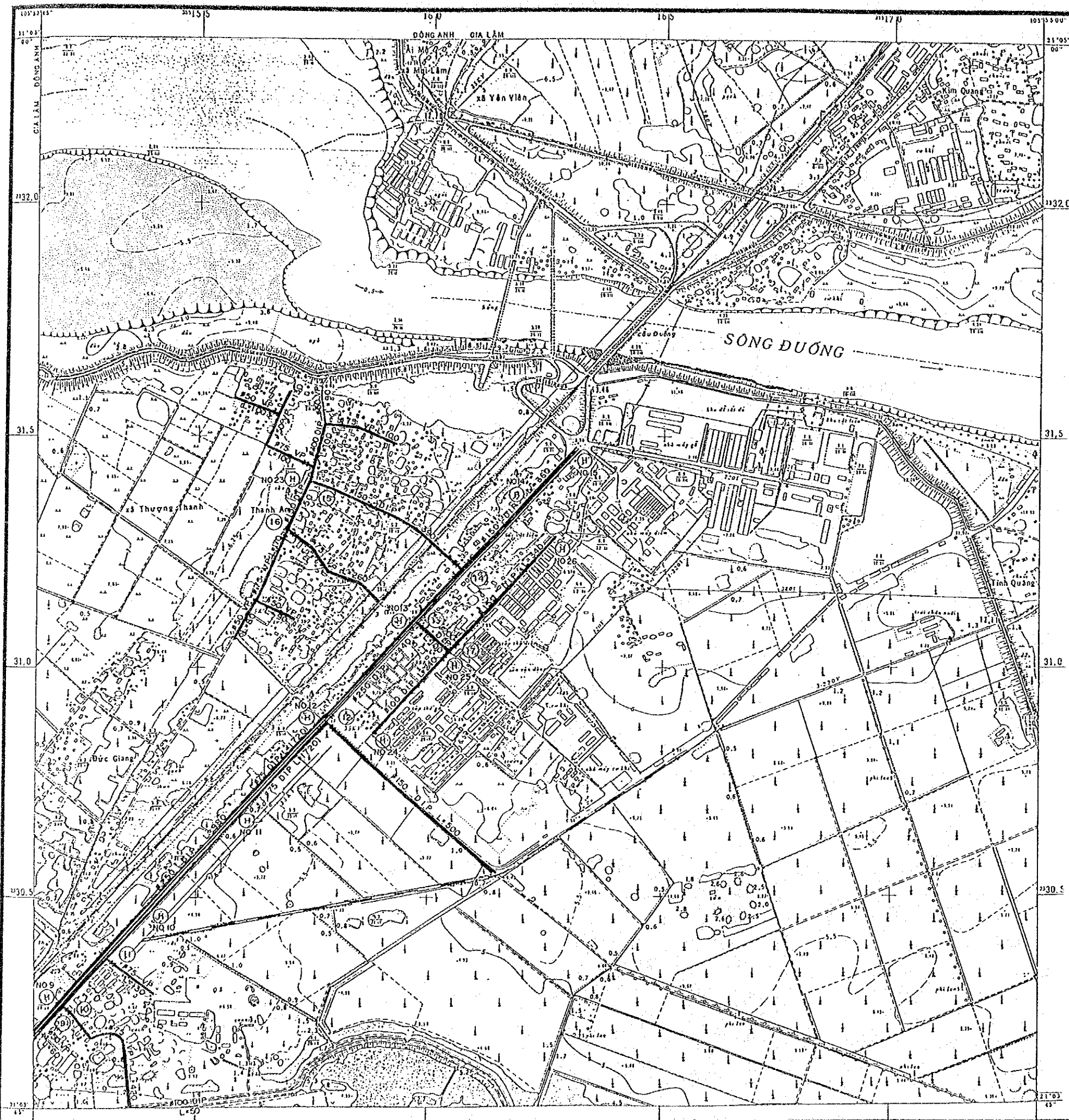




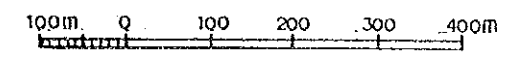
		307	308	
330	331	332		
354	355	356	357	
				380



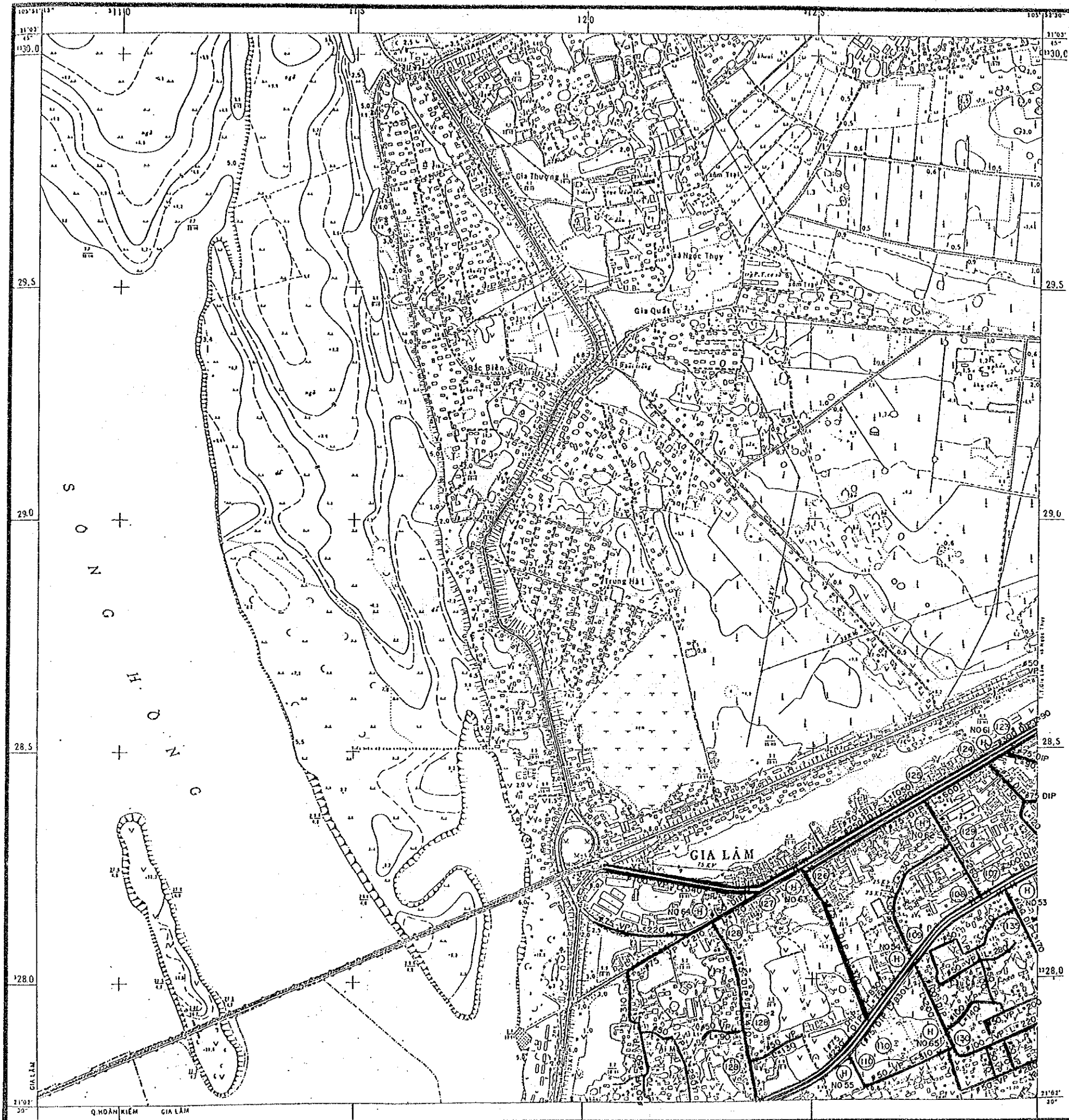
THE SOCIALIST REPUBLIC OF VIET NAM
 Transportation and Urban Public Works Service, HPC
 The Water Supply System in Gia Lam Area in Hanoi City
 Draw.Name Distribution Pipelines (1)
 Sept.1993 Scale / Draw. No. 42
 JAPAN INTERNATIONAL COOPERATION AGENCY



	307	308	
330	331	332	
354	355	356	357
		380	

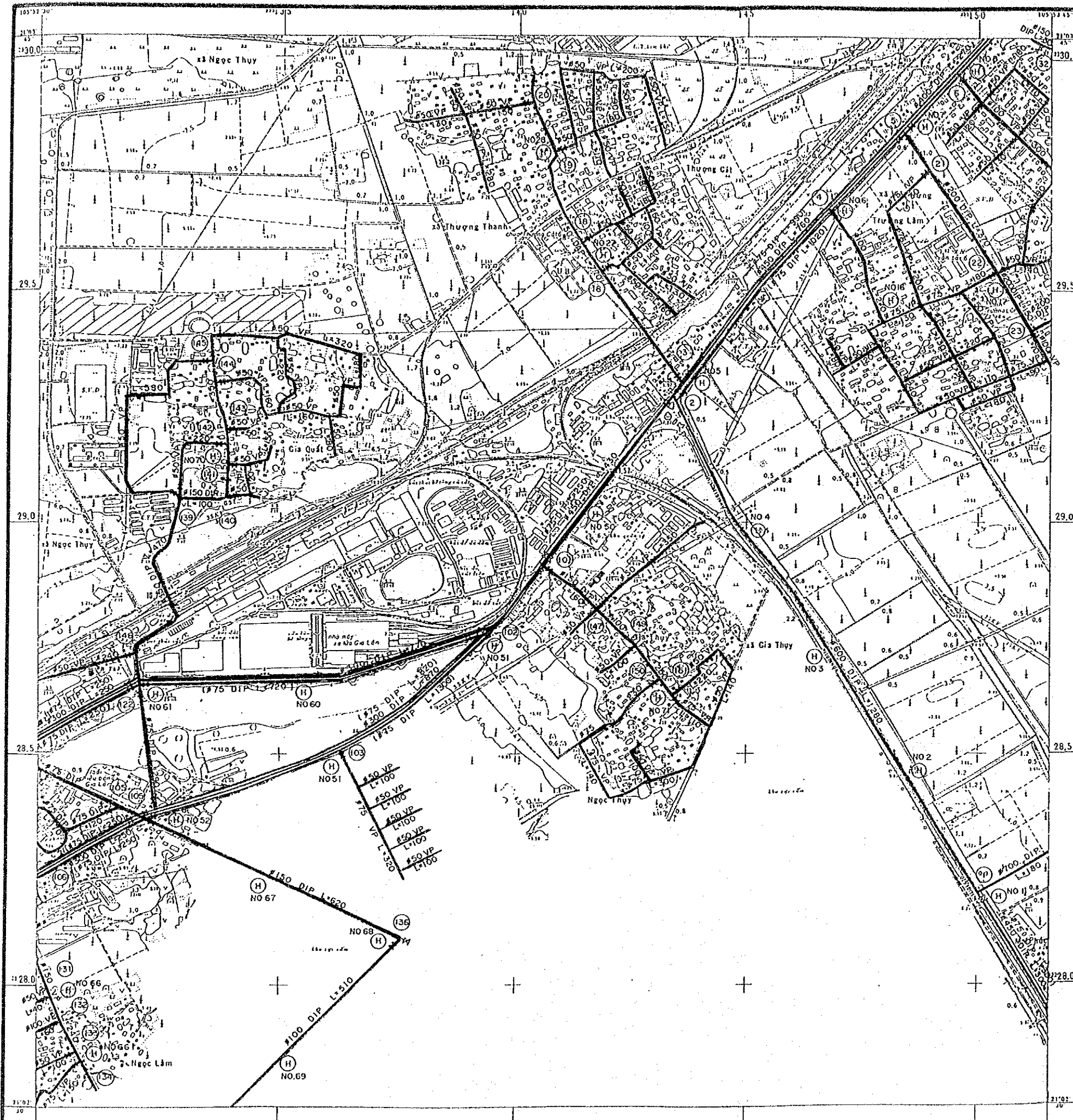


THE SOCIALIST REPUBLIC OF VIET NAM		
Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw.Name	Distribution Pipelines (2)	
Sept.1993	Scale /	Draw. No. 43
JAPAN INTERNATIONAL COOPERATION AGENCY		

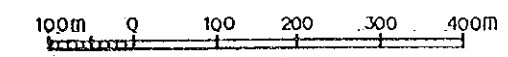


	307	308	
330	331	332	
354	355	356	357
		380	

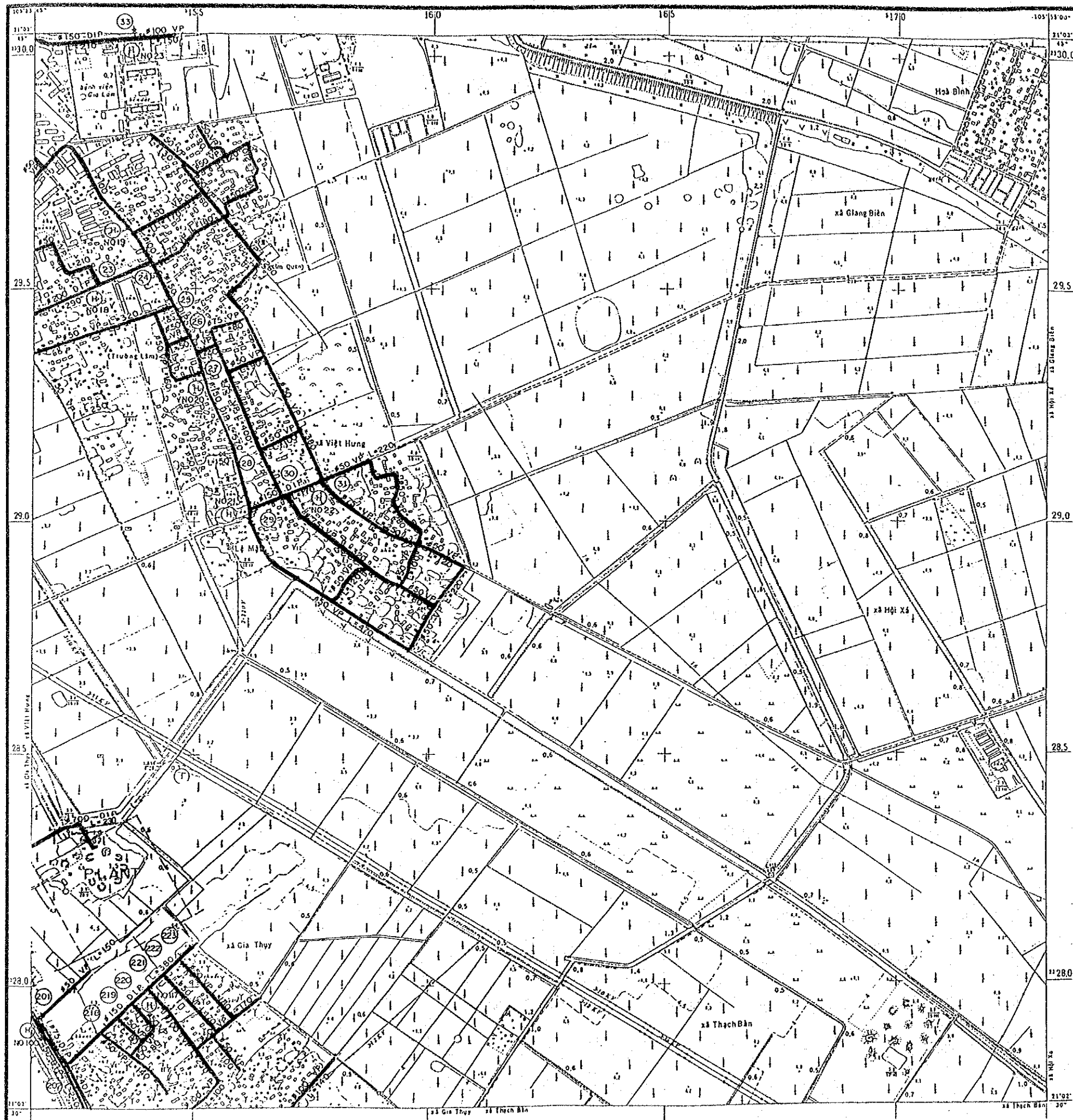
THE SOCIALIST REPUBLIC OF VIET NAM		
Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw.Name	Distribution Pipelines (3)	
Sept.1993	Scale /	Draw. No. 44
JAPAN INTERNATIONAL COOPERATION AGENCY		



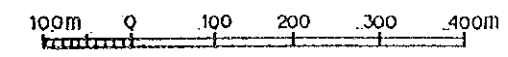
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330	331	332		
354	355	356	357	
				380



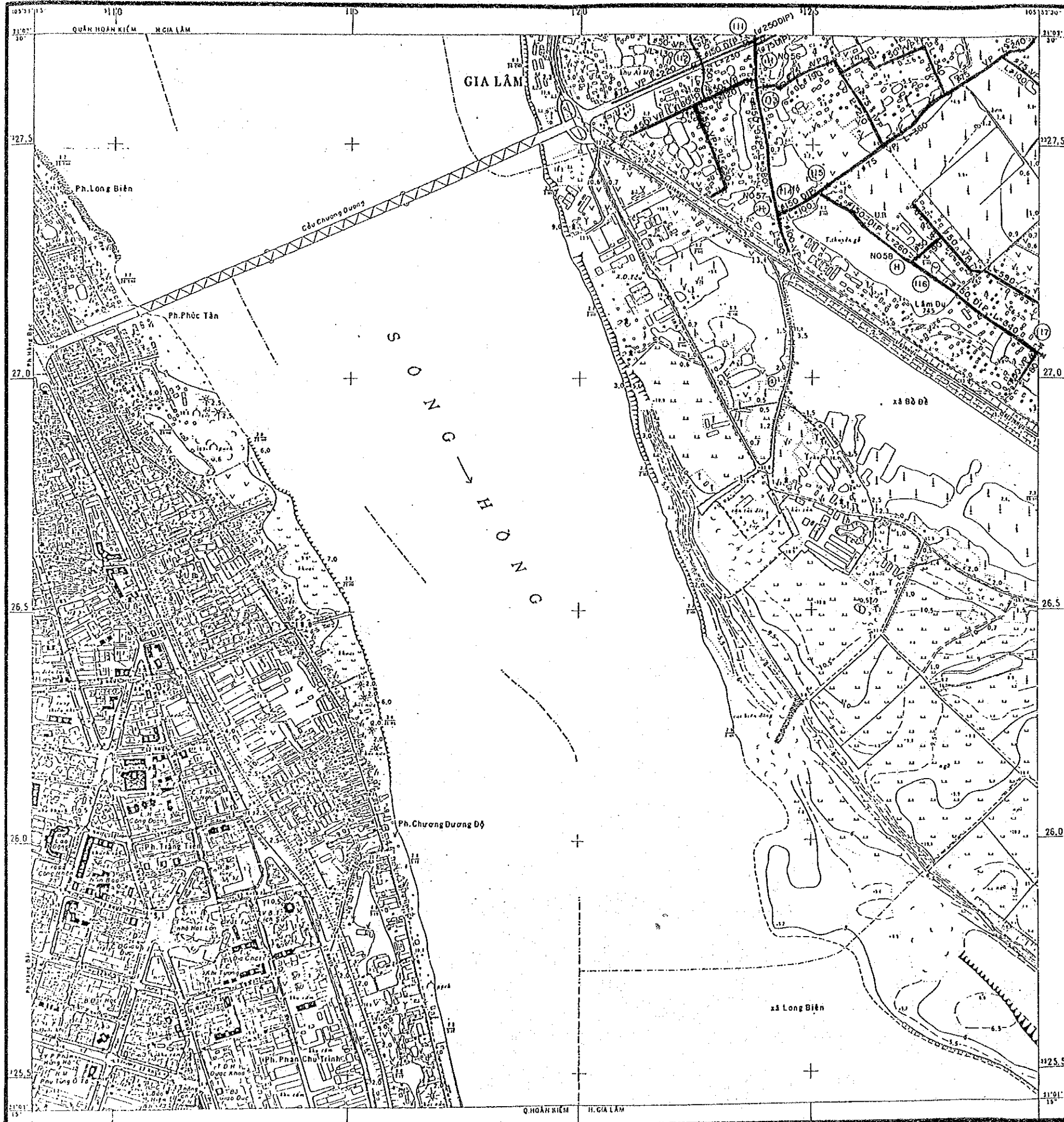
THE SOCIALIST REPUBLIC OF VIET NAM
 Transportation and Urban Public Works Service, HPC
 The Water Supply System in Gia Lam Area in Hanoi City
 Draw.Name Distribution Pipelines (4)
 Sept.1993 Scale / Draw. No. 45
 JAPAN INTERNATIONAL COOPERATION AGENCY



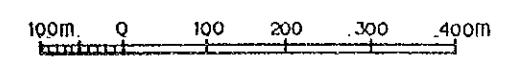
	307	308	
330	331	332	
354	355	356	357
		380	



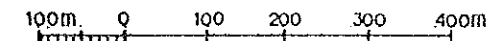
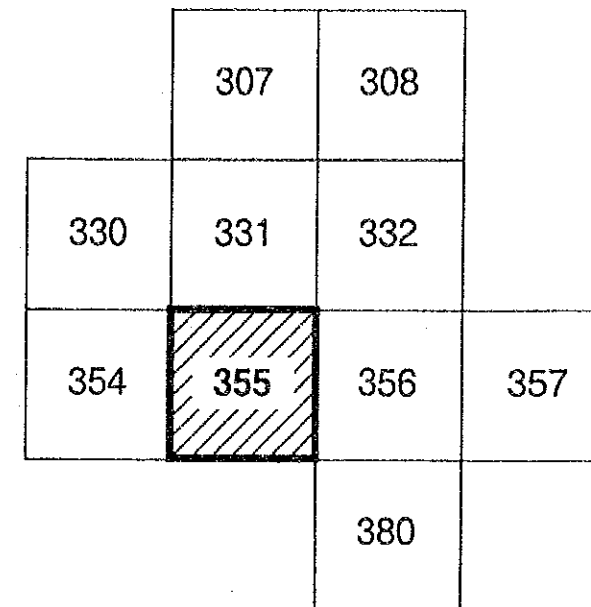
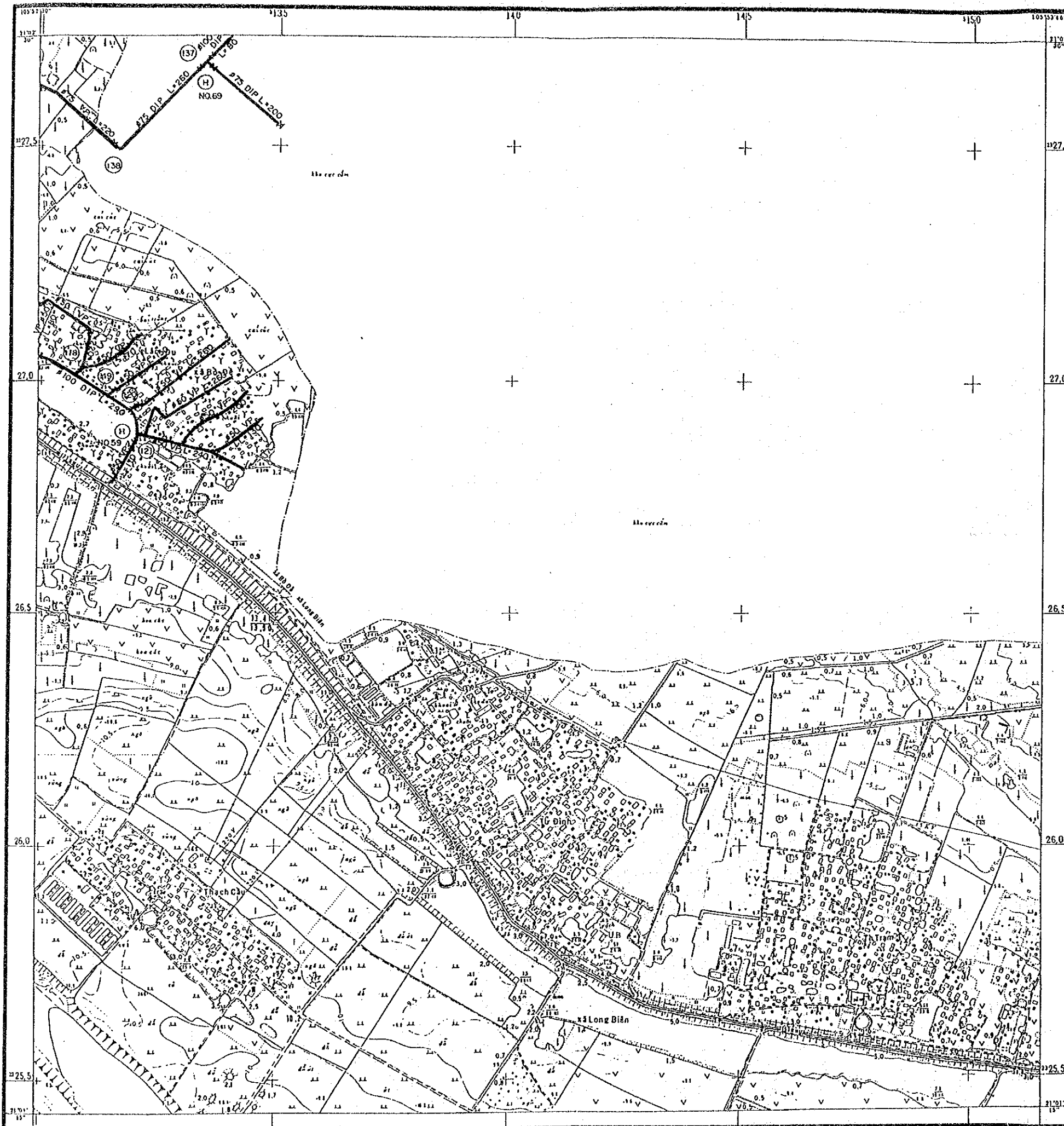
THE SOCIALIST REPUBLIC OF VIET NAM		
Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw.Name	Distribution Pipelines (5)	
Sept.1993	Scale /	Draw. No. 46
JAPAN INTERNATIONAL COOPERATION AGENCY		



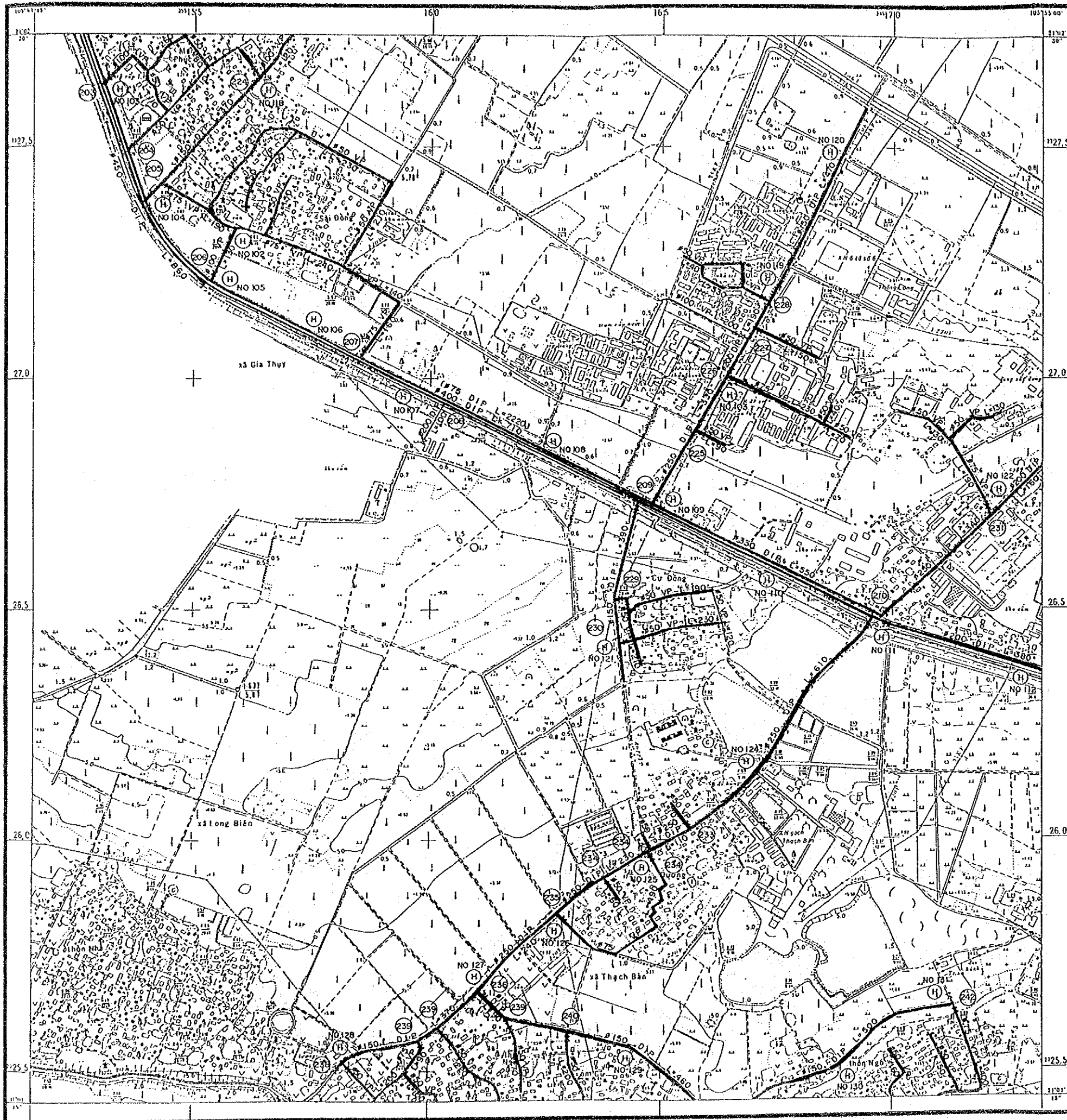
		307	308	
330	331	332		
354	355	356	357	
			380	



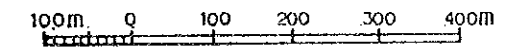
THE SOCIALIST REPUBLIC OF VIET NAM
 Transportation and Urban Public Works Service, HPC
 The Water Supply System in Gia Lam Area in Hanoi City
 Draw.Name Distribution Pipelines (6)
 Sept.1993 Scale / Draw. No. 47
 JAPAN INTERNATIONAL COOPERATION AGENCY



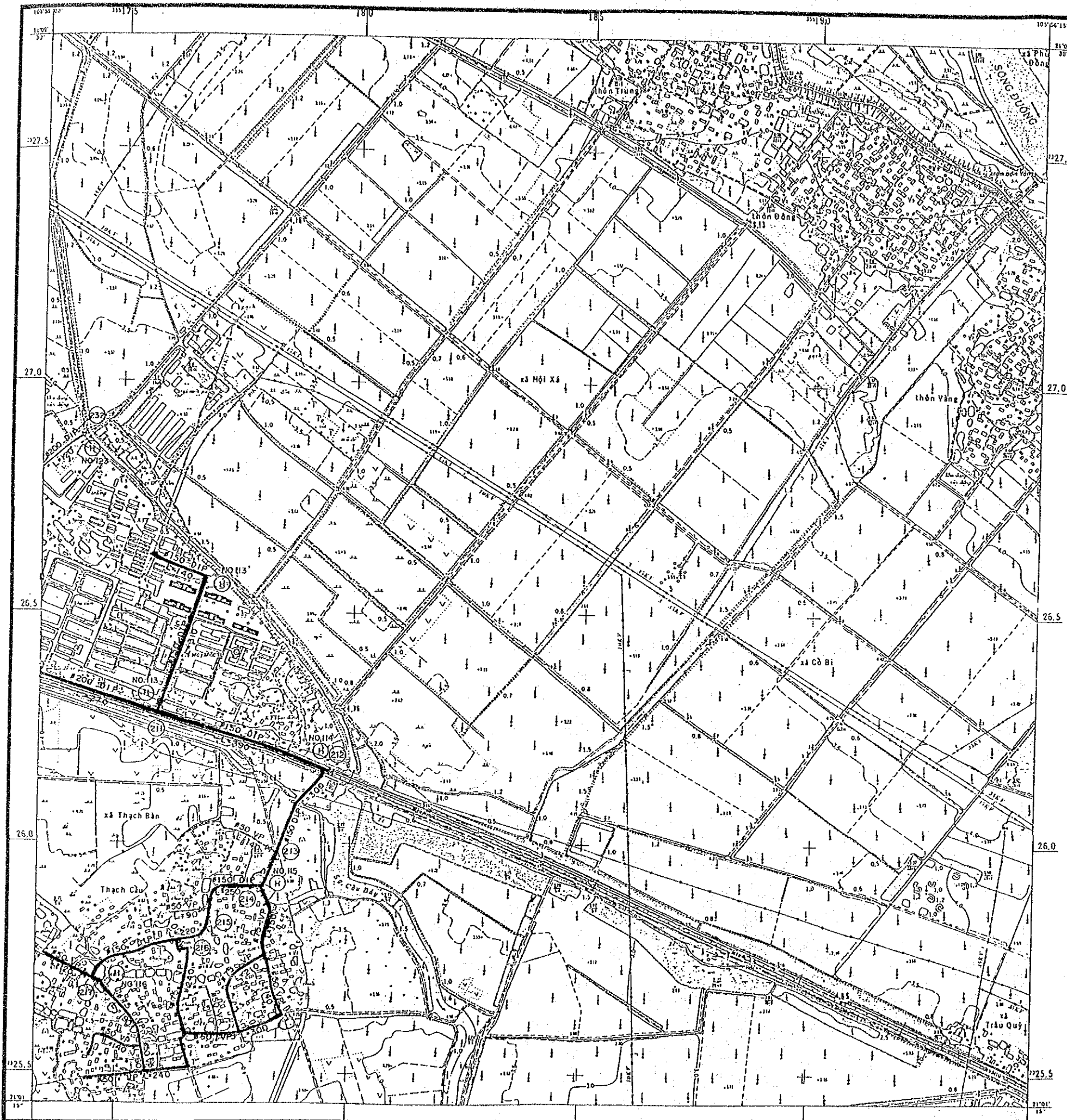
THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw.Name		Distribution Pipelines (7)
Sep.1993	Scale /	Draw. No. 48
JAPAN INTERNATIONAL COOPERATION AGENCY		



	307	308	
330	331	332	
354	355	356	357
		380	



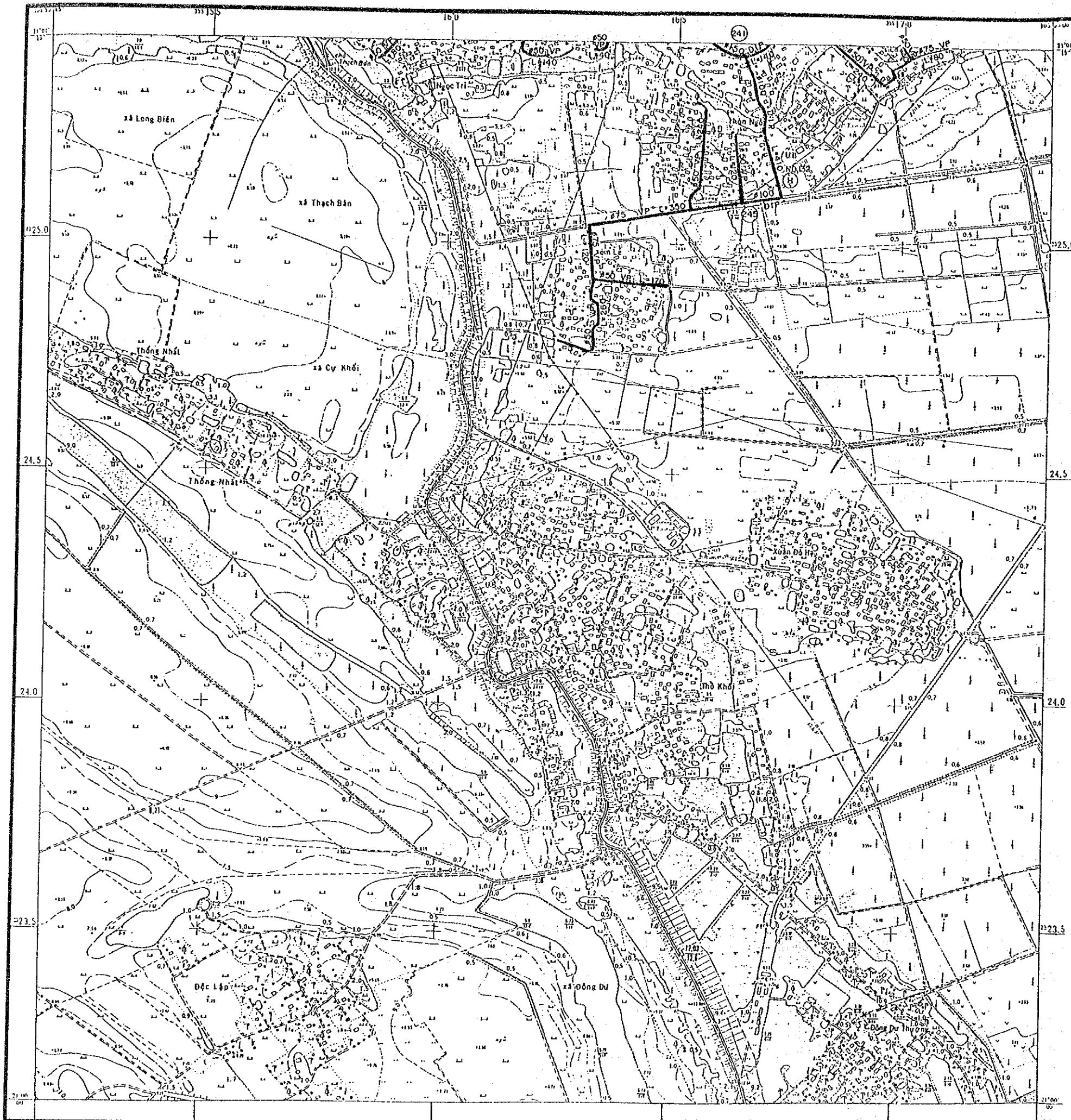
THE SOCIALIST REPUBLIC OF VIET NAM		
Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw.Name	Distribution Pipelines (8)	
Sept.1993	Scale /	Draw. No. 49
JAPAN INTERNATIONAL COOPERATION AGENCY		



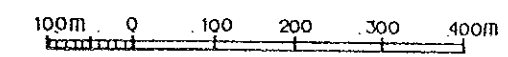
	307	308	
330	331	332	
354	355	356	357
		380	



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 Pipelines (9)	
Sept.1993	Scale /	Draw. No. 50
JAPAN INTERNATIONAL COOPERATION AGENCY		



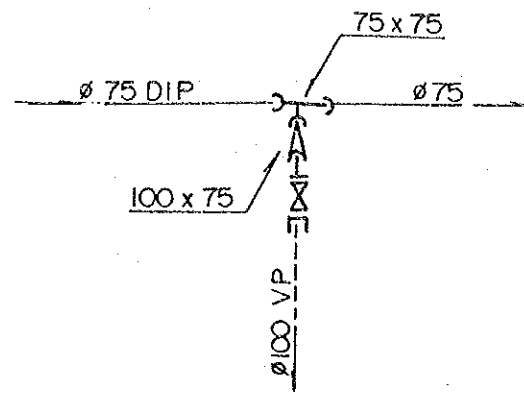
	307	308	
330	331	332	
354	355	356	357
		380	



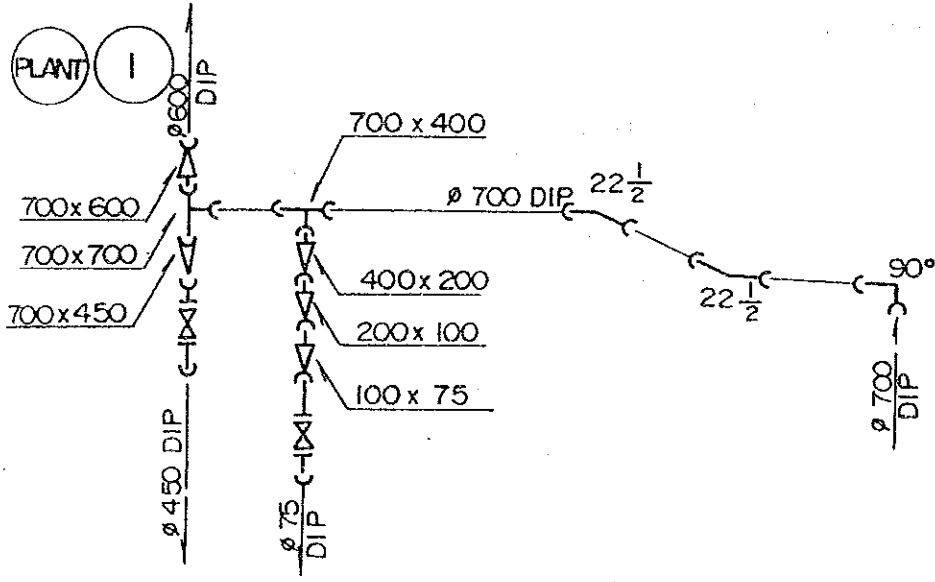
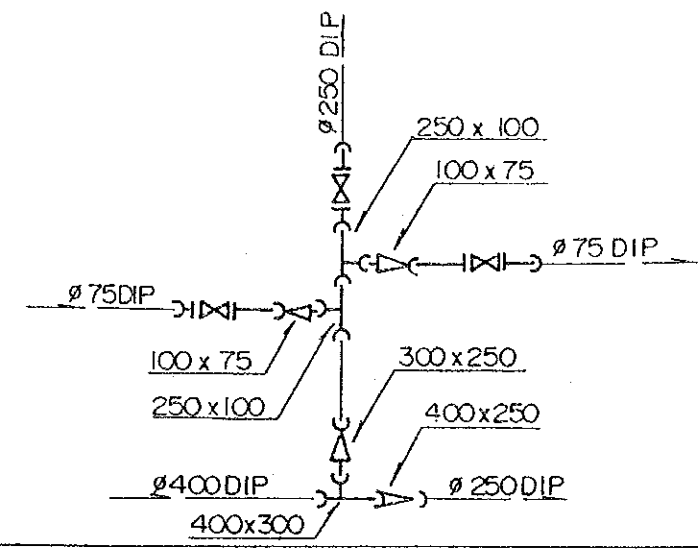
THE SOCIALIST REPUBLIC OF VIET NAM		
Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw.Name	Distribution Pipelines (10)	
Sept.1993	Scale /	Draw. No. 51
JAPAN INTERNATIONAL COOPERATION AGENCY		

	Socket and Spigot Tee with Socket Branch
	Large Socket Taper
	Small Socket Taper
	Socket and Spigot Bend
	Flanged Socket
	Flanged Spigot
	Collar
	Plug
	Sluice Valve
	Fire Hydrant
	Socket and Spigot Tee with Flanged Branch

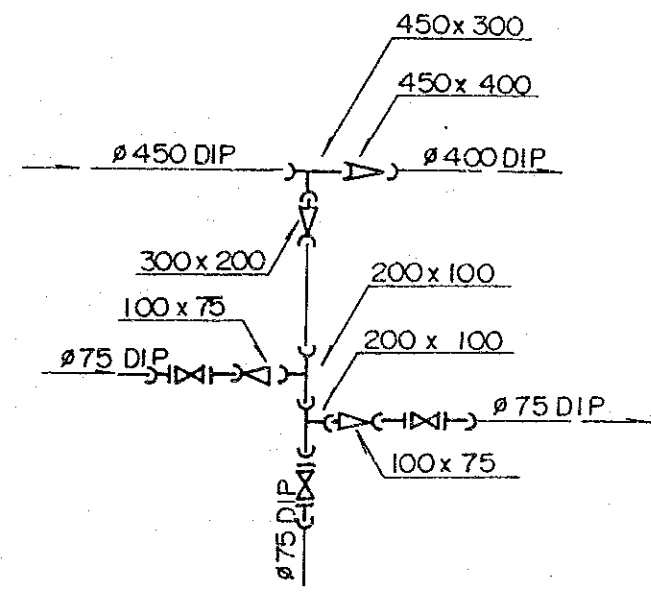
4 6



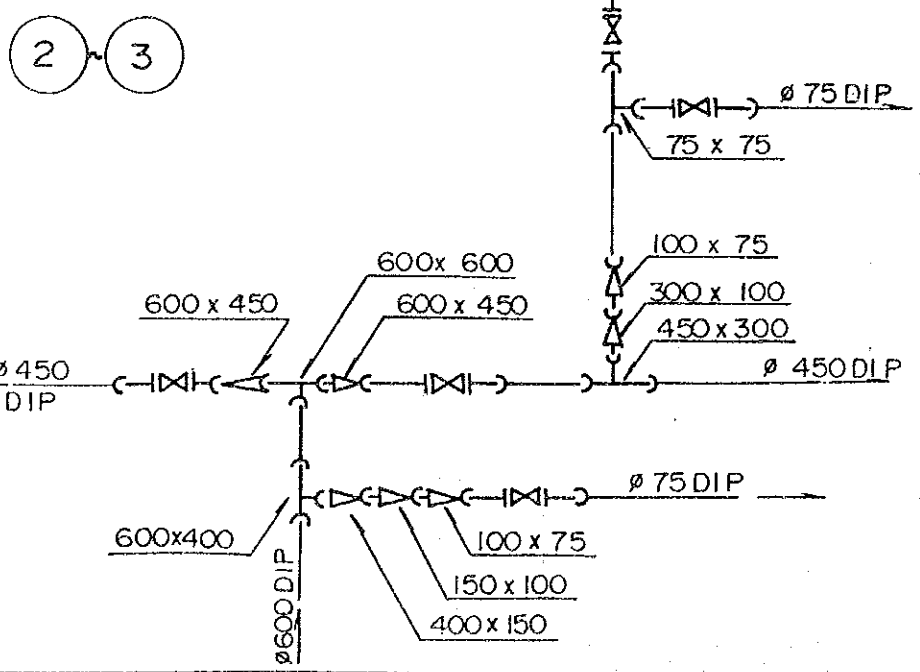
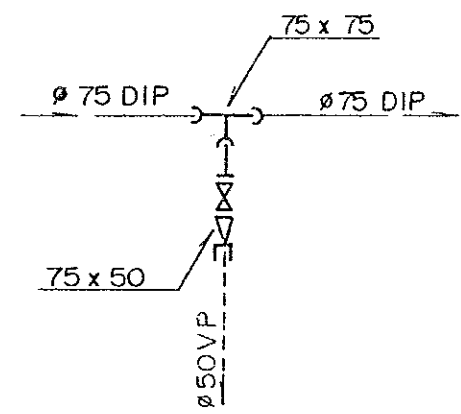
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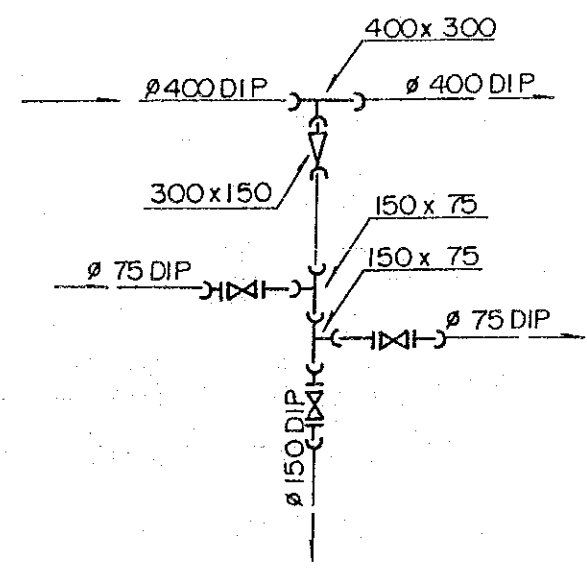
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9

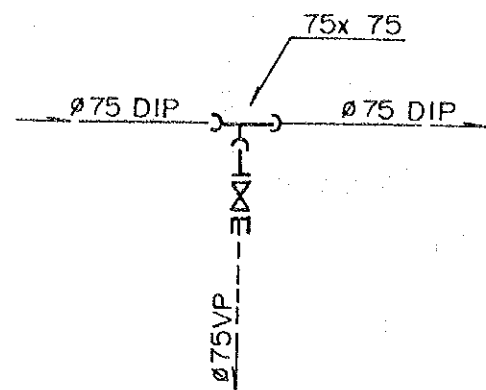


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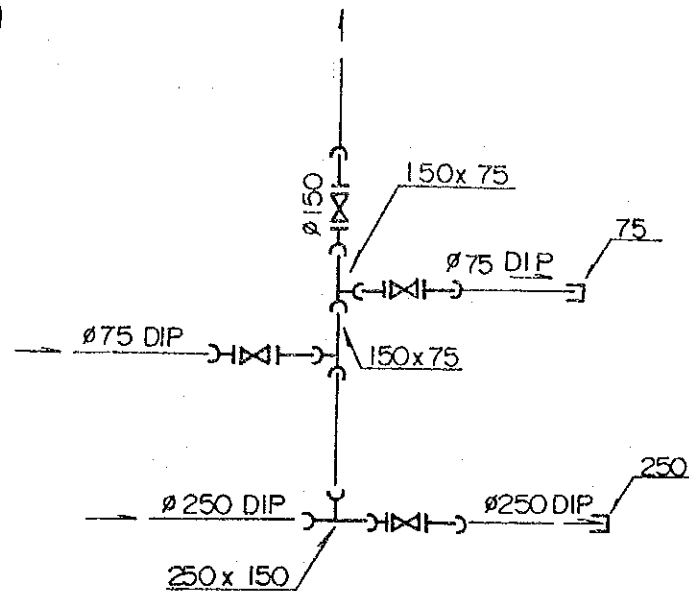


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name	Distribution Pipelines Fittings Detail (1)	
Sept., 1993	Scale 1:	Draw. No. 52
JAPAN INTERNATIONAL COOPERATION AGENCY		

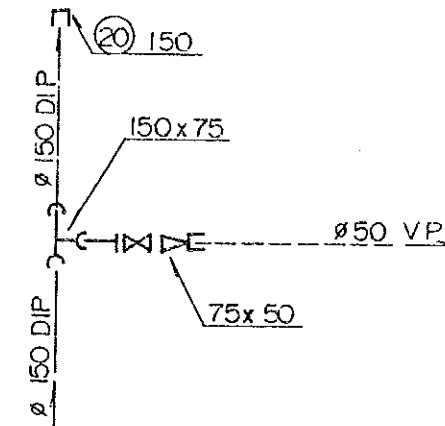
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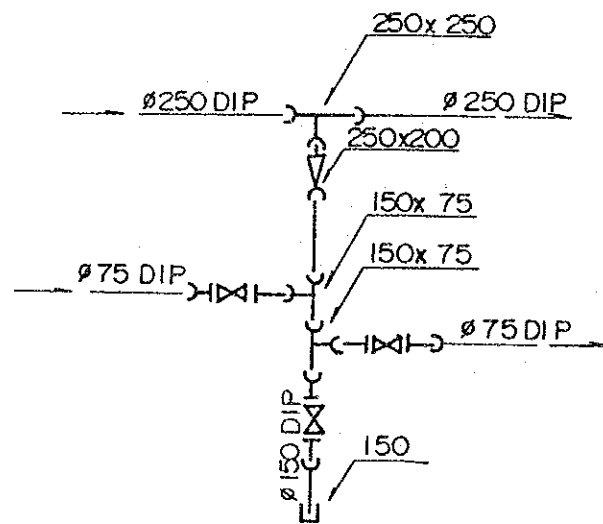
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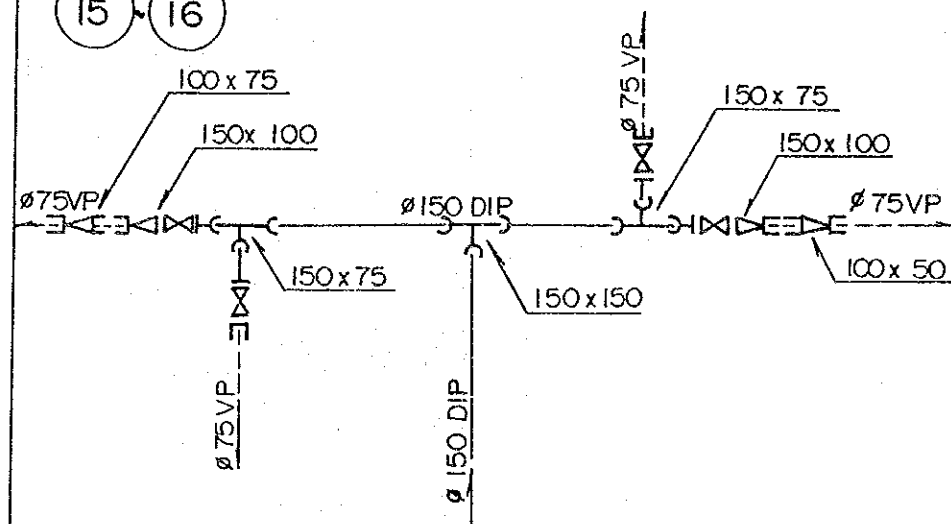
18 18' 19 20 26 27 28 32



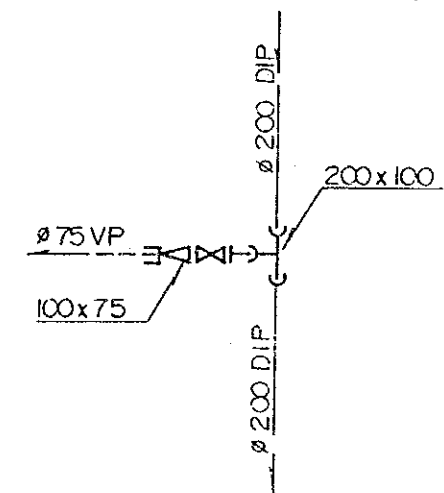
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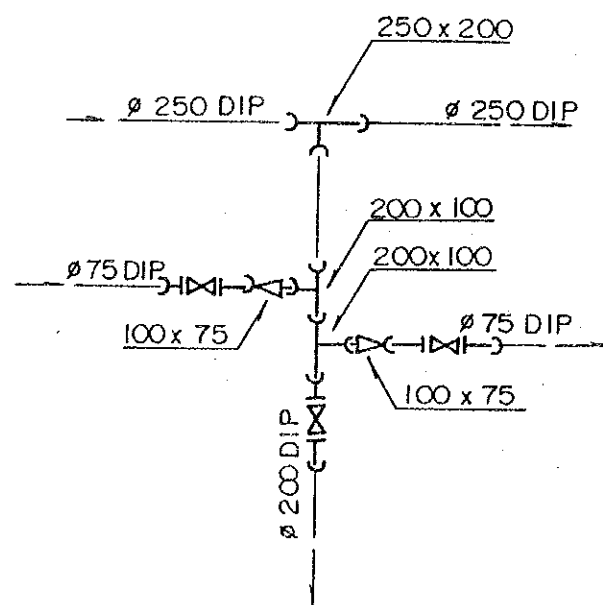
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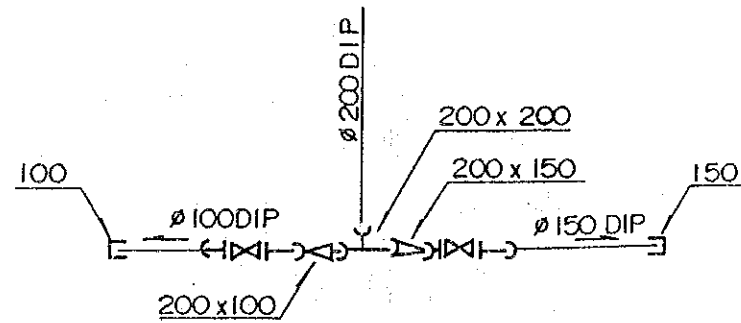
21



13

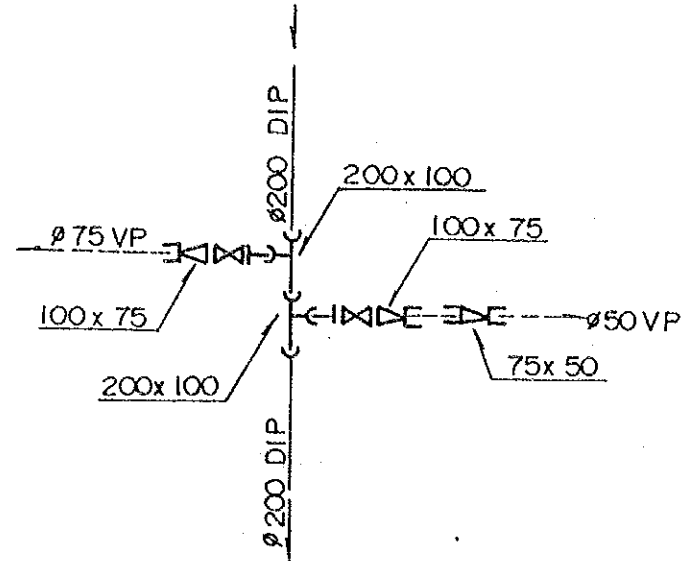


17

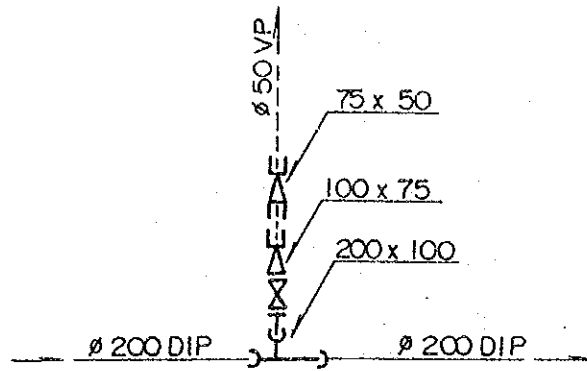


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name	Distribution Pipelines Fittings Detail (2)	
Sept., 1993	Scale 1:	Draw. No. 53
JAPAN INTERNATIONAL COOPERATION AGENCY		

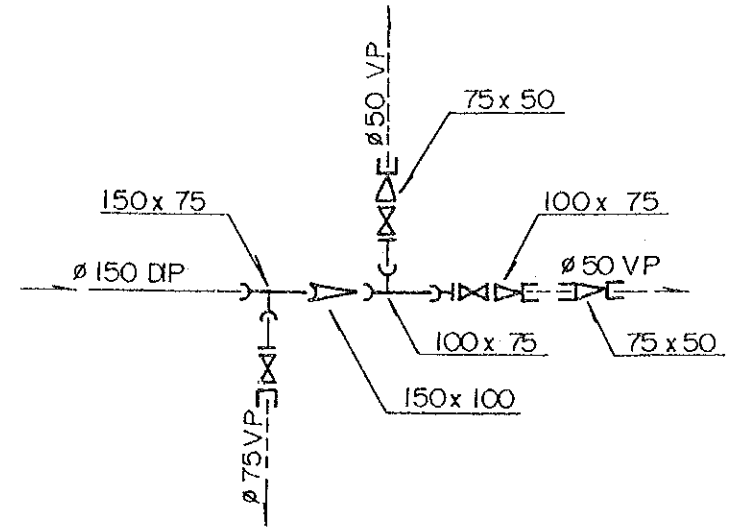
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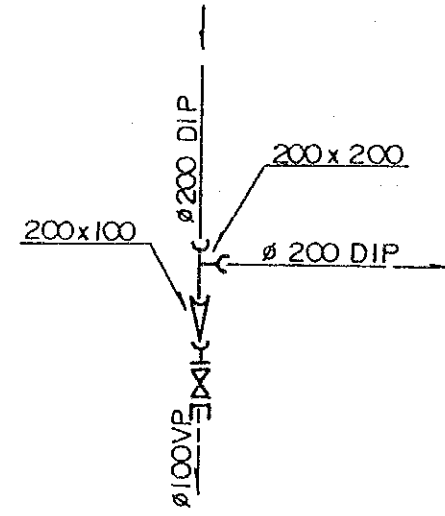
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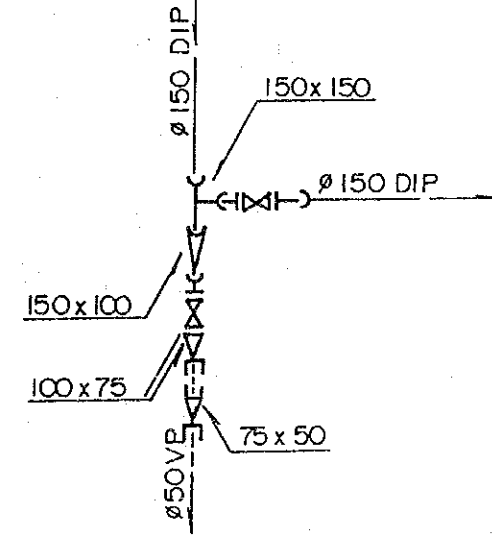
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23

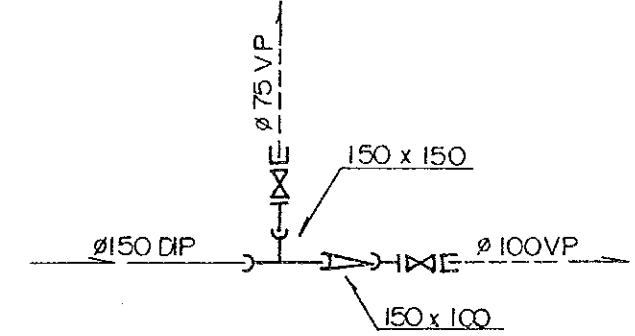


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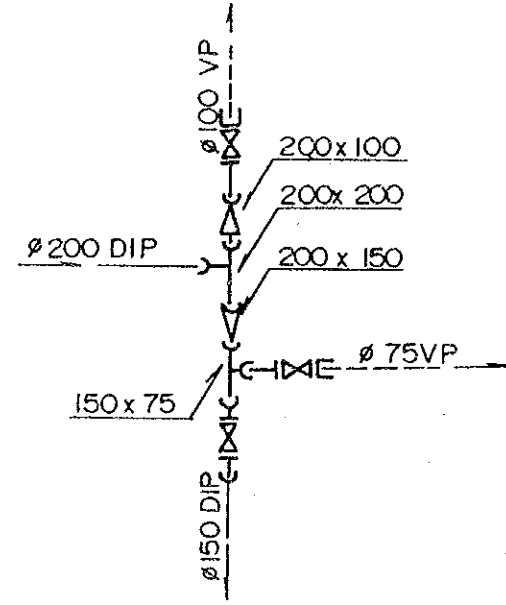


33

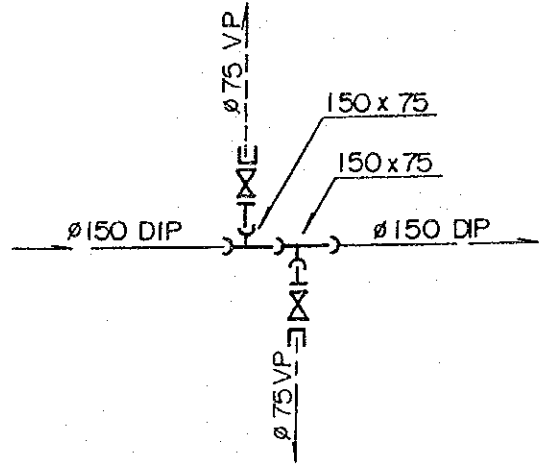
37



24

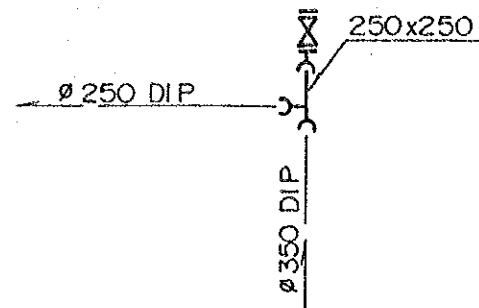


30

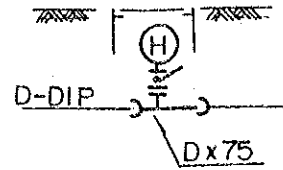


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name Distribution Pipelines Fittings Detail (3)		
Sept., 1993	Scale 1:	Draw. No. 54
JAPAN INTERNATIONAL COOPERATION AGENCY		

34

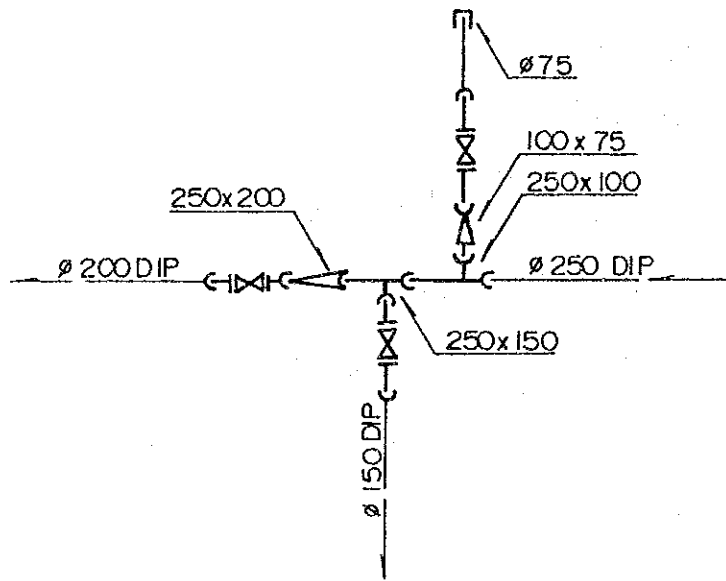


FIRE HYDRANT

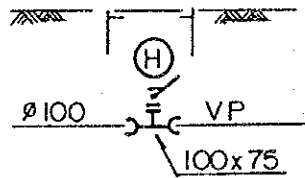


D x 75 ~ n	NO.
600 x 75 ~ 4	NO.1~4
450 x 75 ~ 2	NO.5~6
400 x 75 ~ 2	NO.7~8
250 x 75 ~ 7	NO.9~13 NO.29~30
200 x 75 ~ 4	NO.17~18 NO.31~32
150 x 75 ~ 10	NO.14~15 NO.20~23 NO.25~28
100 x 75 ~ 1	NO.33

35

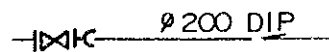


FIRE HYDRANT

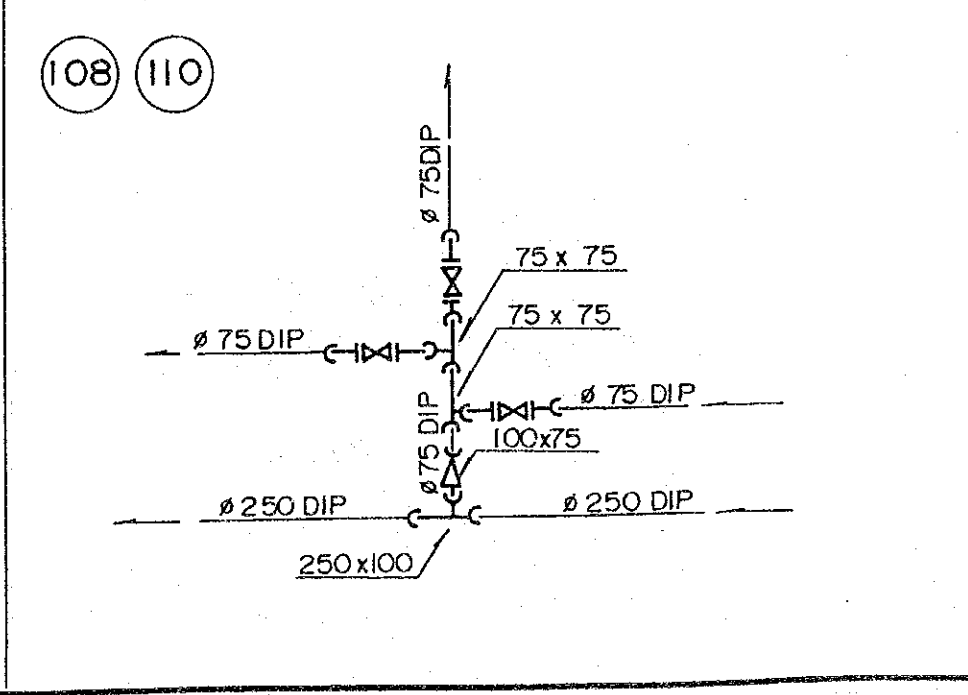
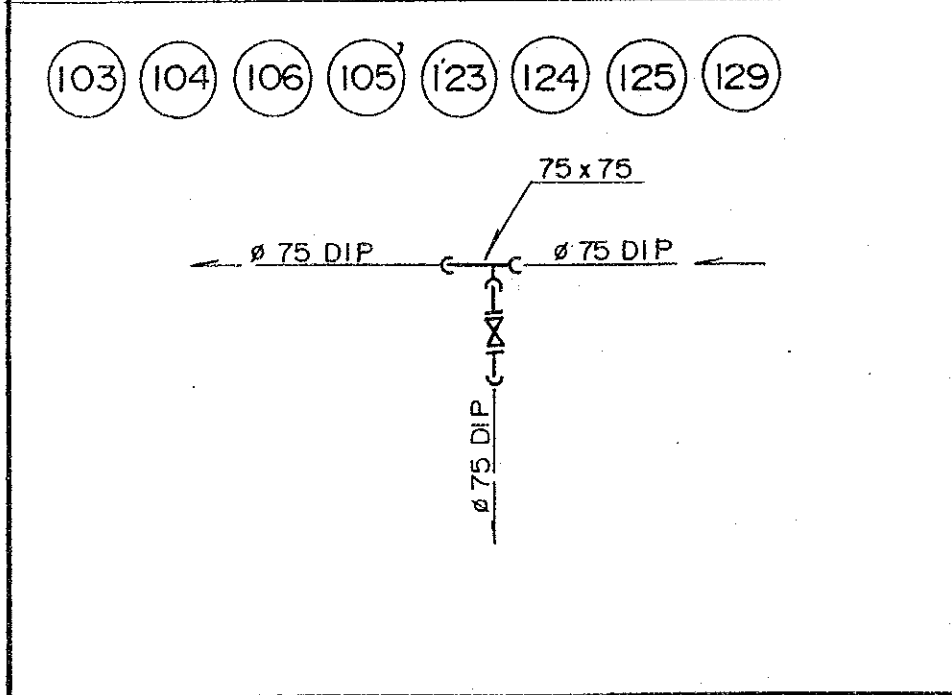
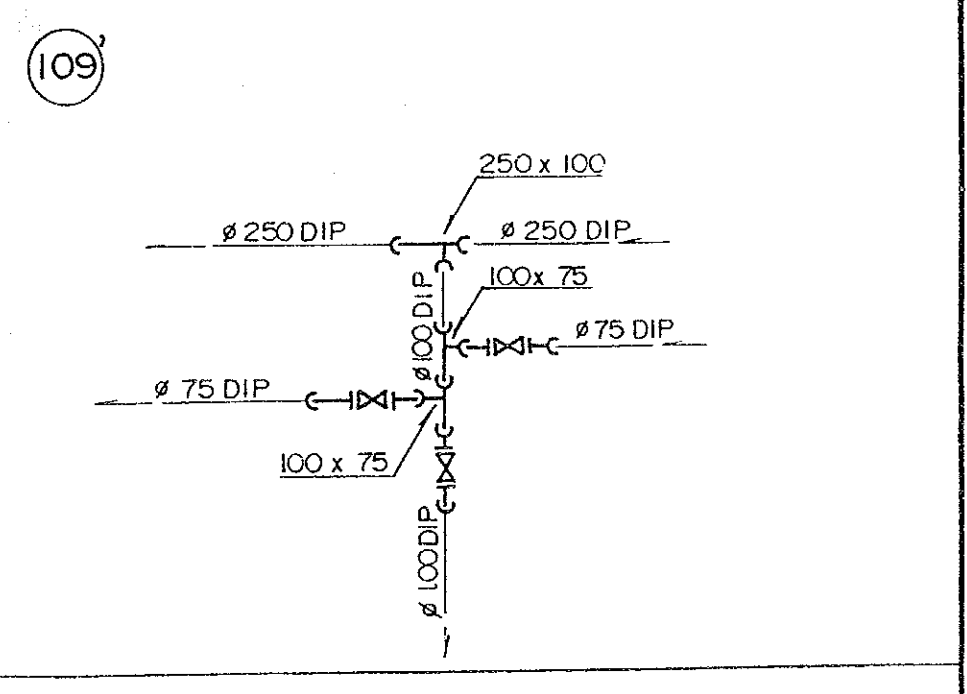
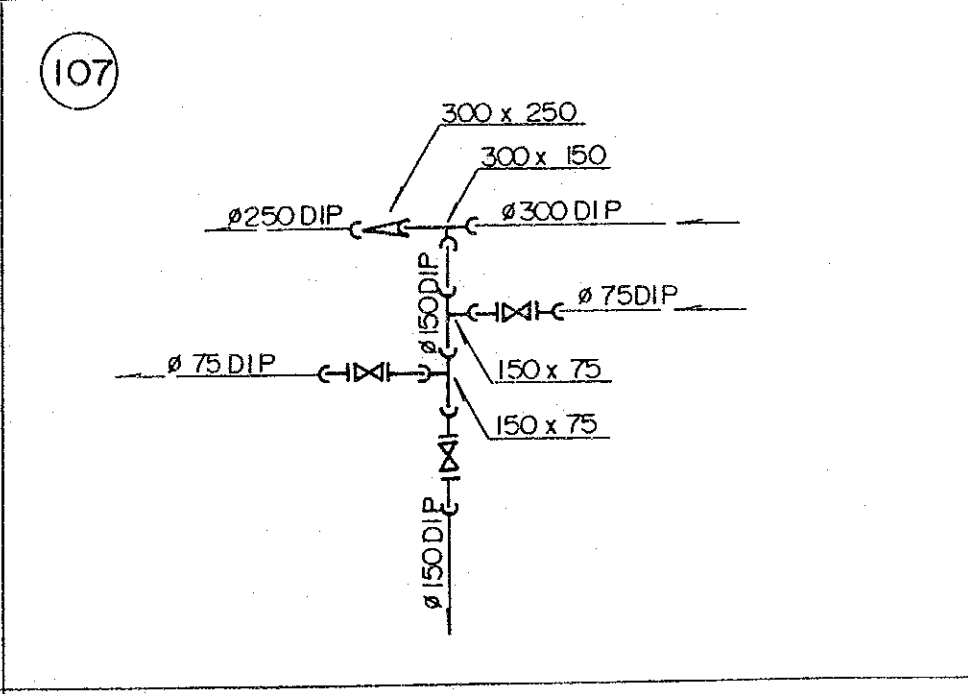
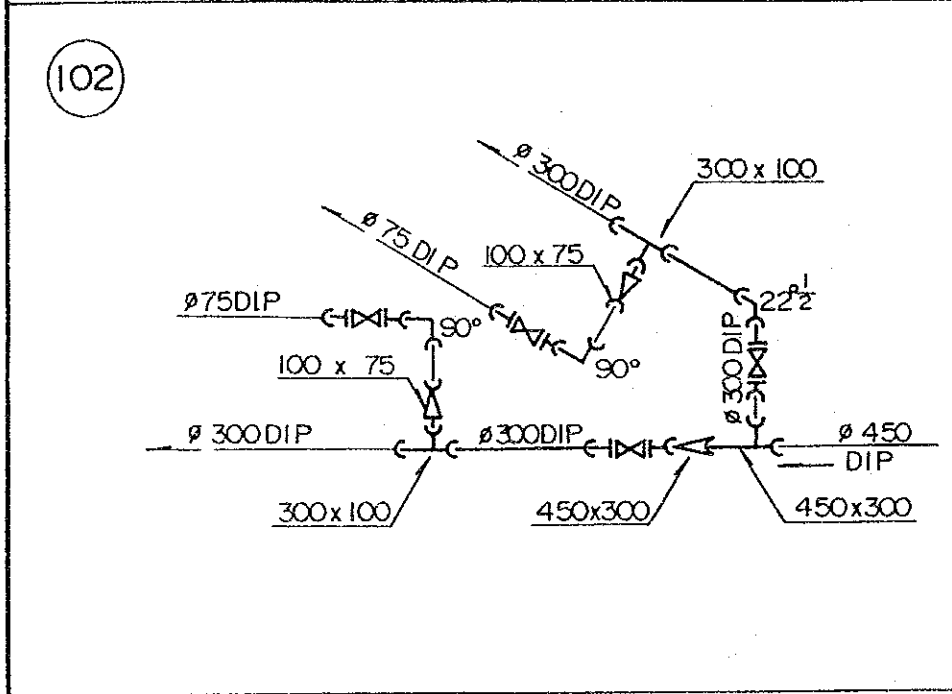
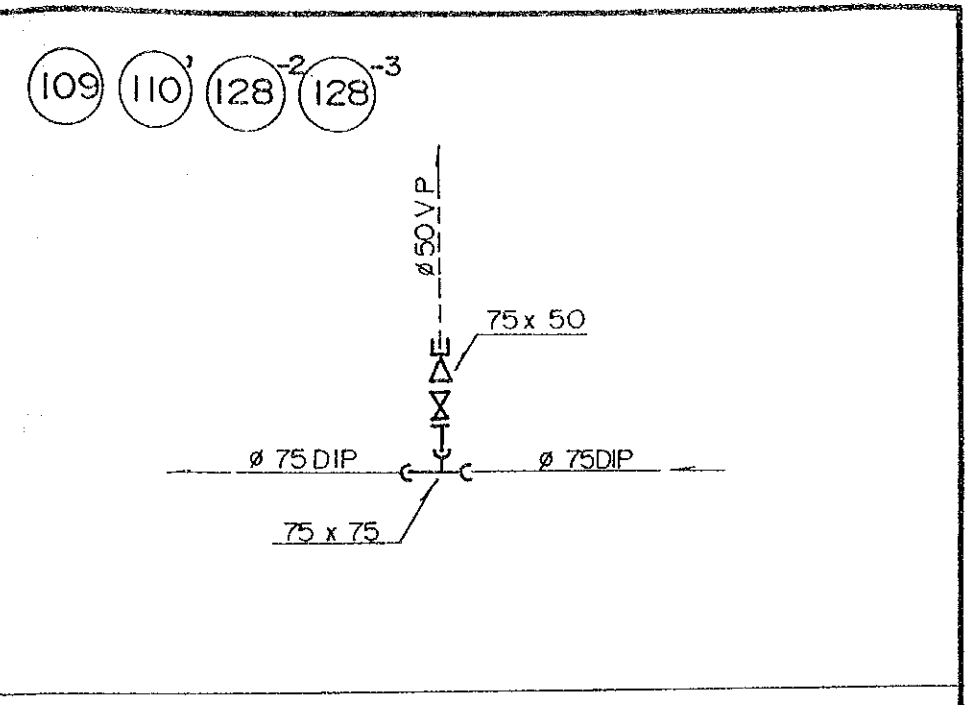
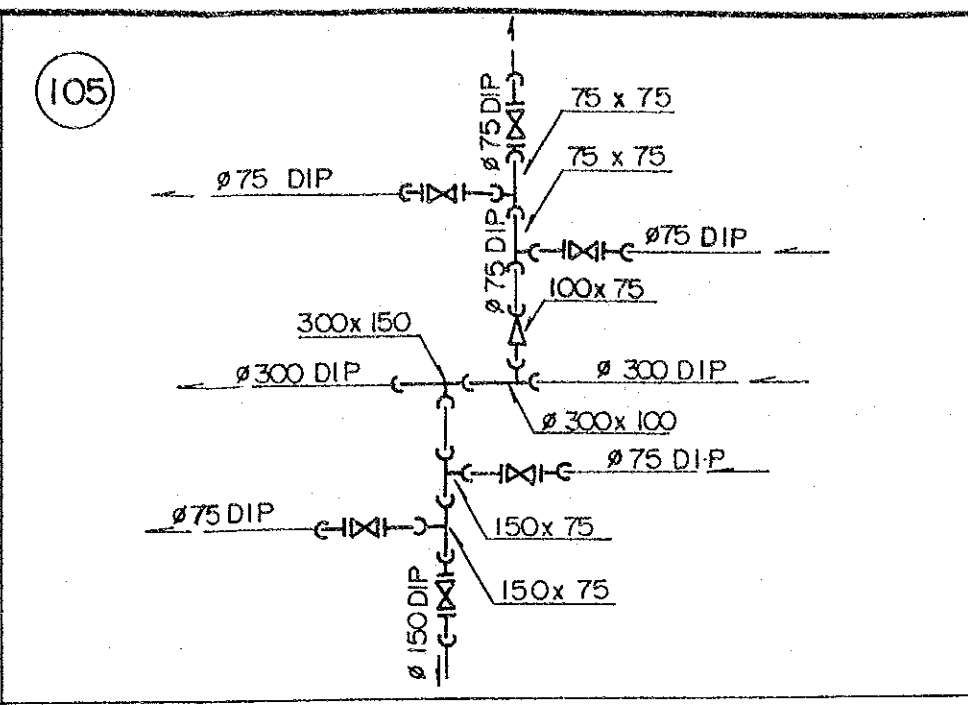
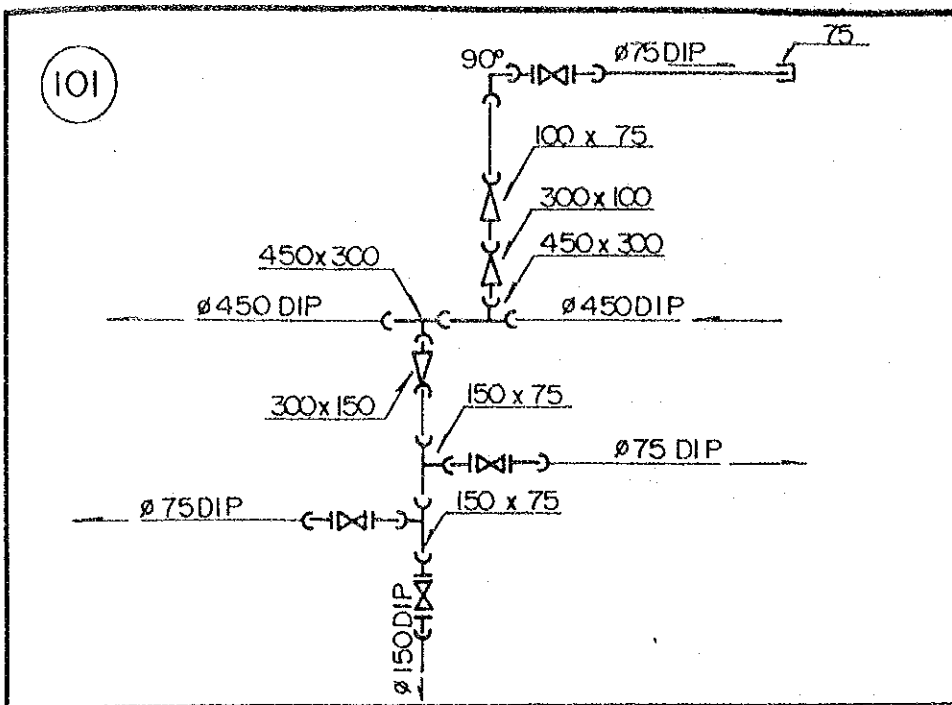


D x 75 ~ n	NO.
100 x 75 ~ 2	NO.16, 19

36

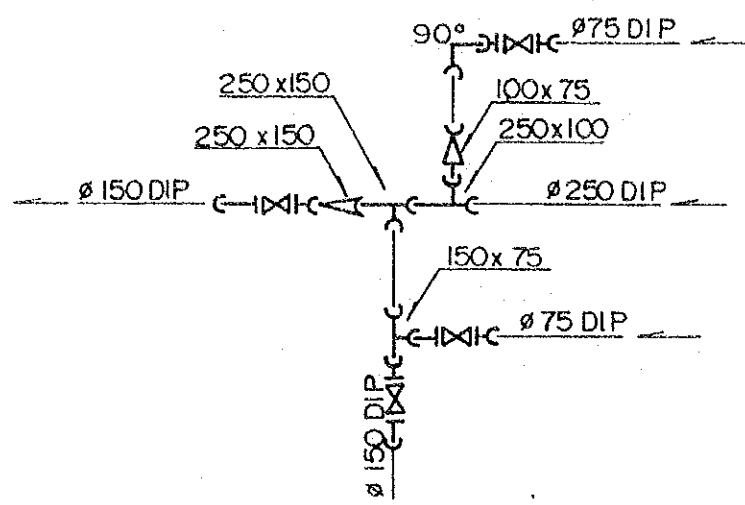


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name Distribution Pipelines Fittings Detail (4)		
Sept., 1993	Scale 1:	Draw. No. 55
JAPAN INTERNATIONAL COOPERATION AGENCY		

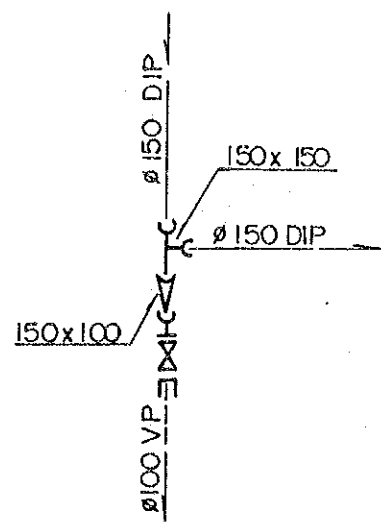


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name Distribution Pipelines Fittings Detail (5)		
Sept., 1993	Scale 1:	Draw. No. 56
JAPAN INTERNATIONAL COOPERATION AGENCY		

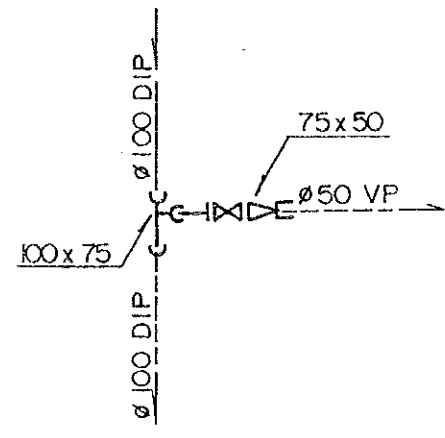
111



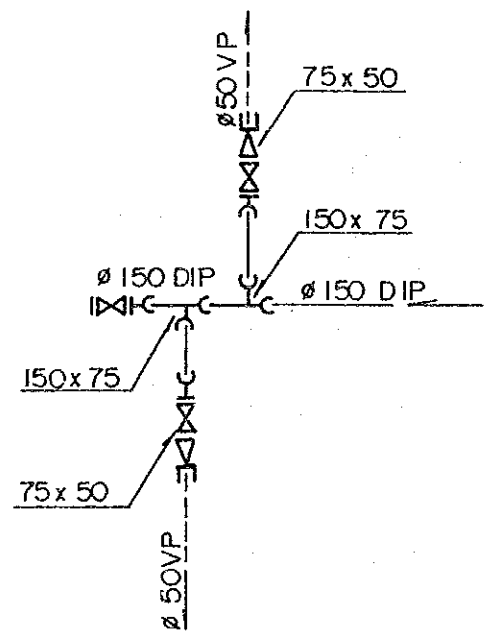
114



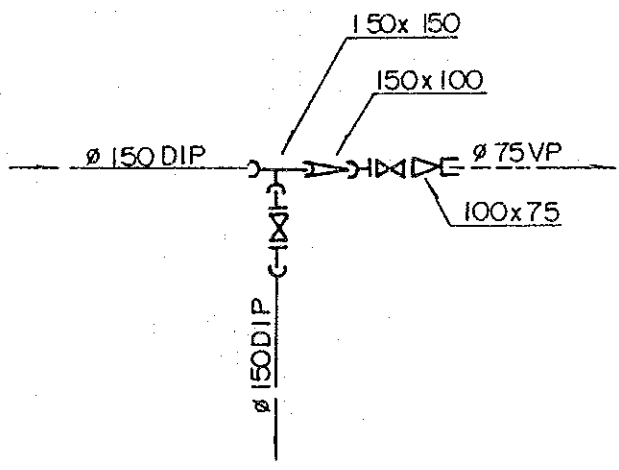
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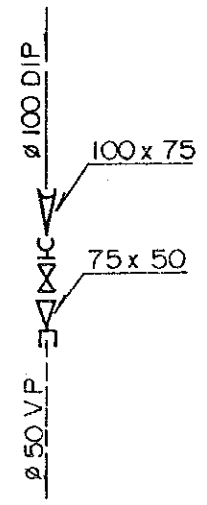
112



115

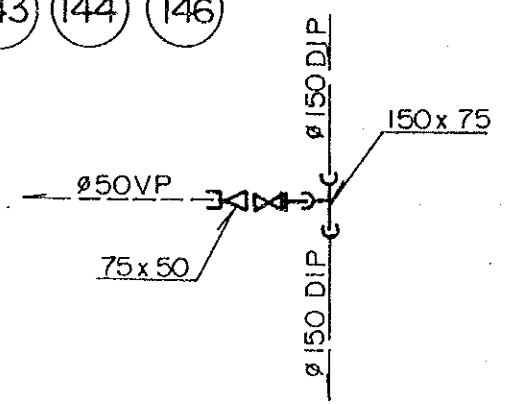


121

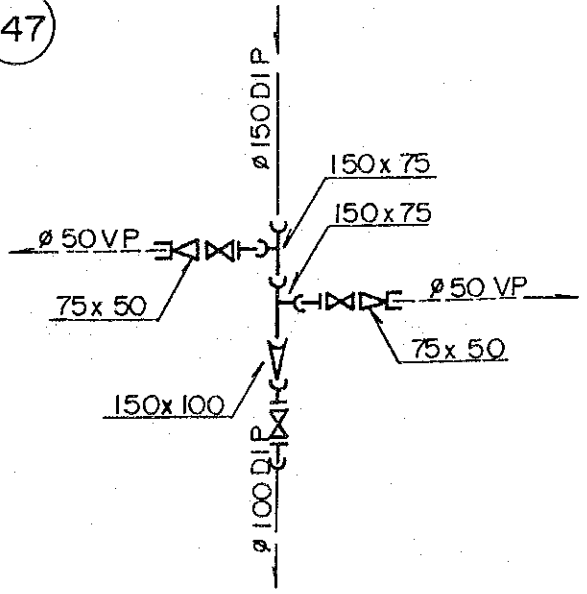


113 113 116 131 132 133 135 141

142 143 144 146

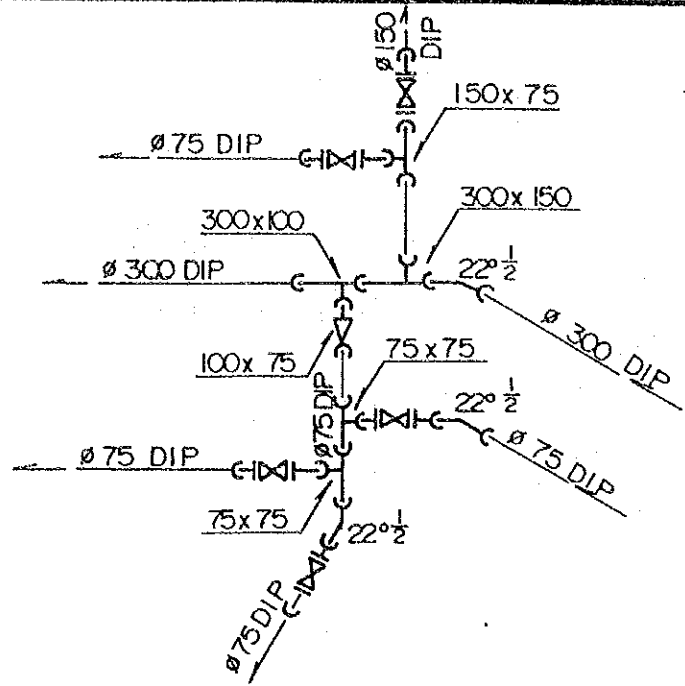


117 147

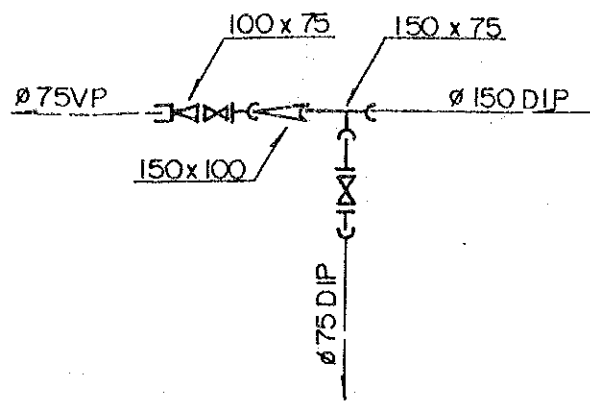


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name Distribution Pipelines Fittings Detail (6)		
Sept., 1993	Scale 1:	Draw. No. 57
JAPAN INTERNATIONAL COOPERATION AGENCY		

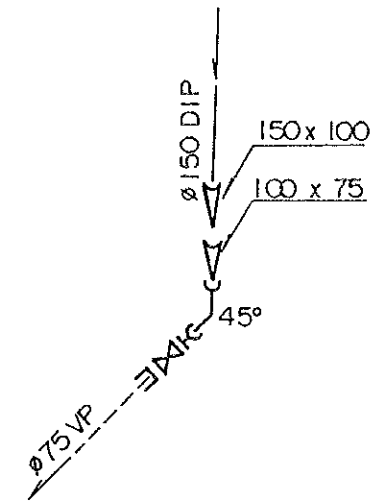
122



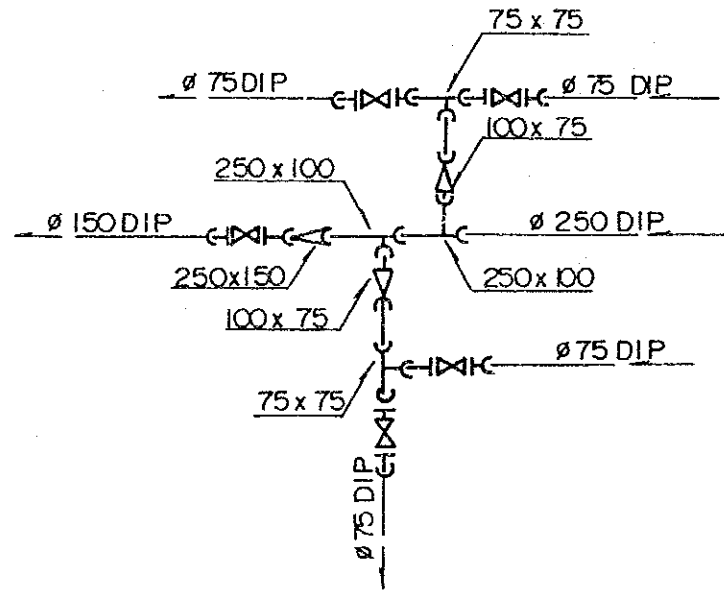
128⁻¹



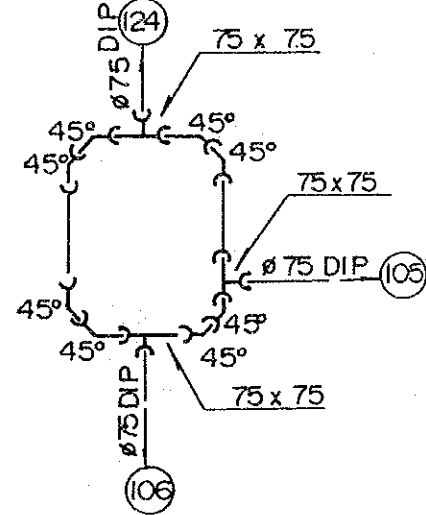
134



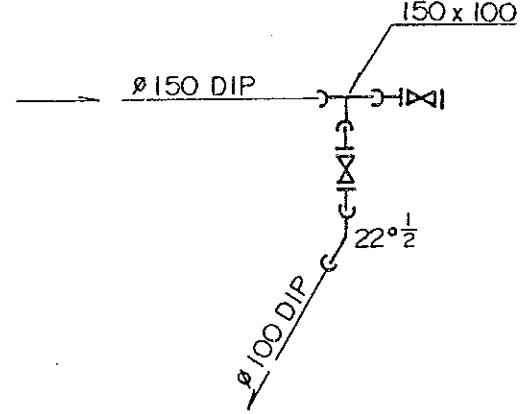
126



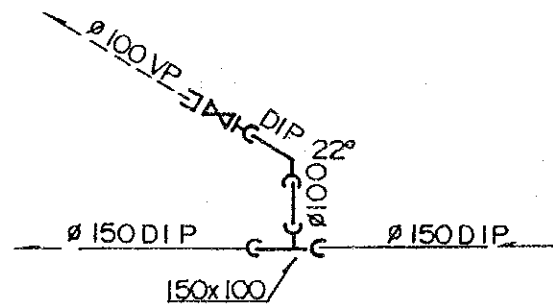
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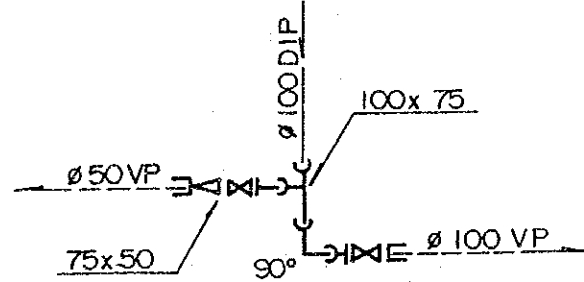
136



127

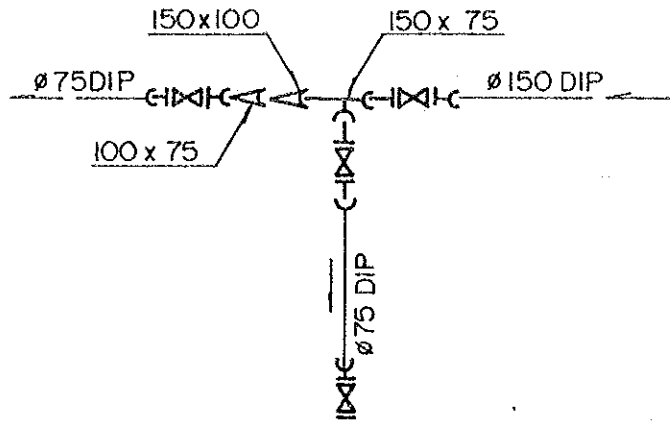


130

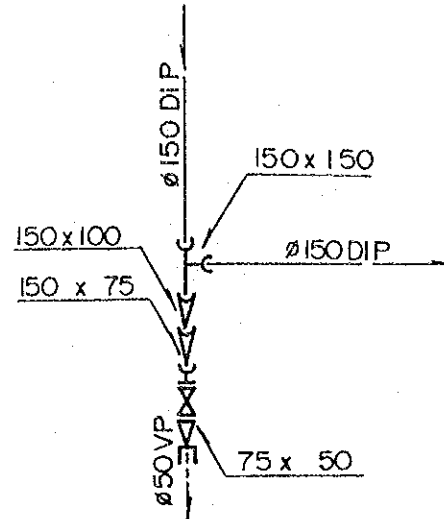


THE SOCIALIST REPUBLIC OF VIET NAM		
Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name	Distribution Pipelines Fittings Detail (7)	
Sept., 1993	Scale 1:	Draw. No. 58
JAPAN INTERNATIONAL COOPERATION AGENCY		

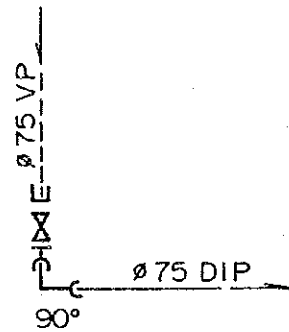
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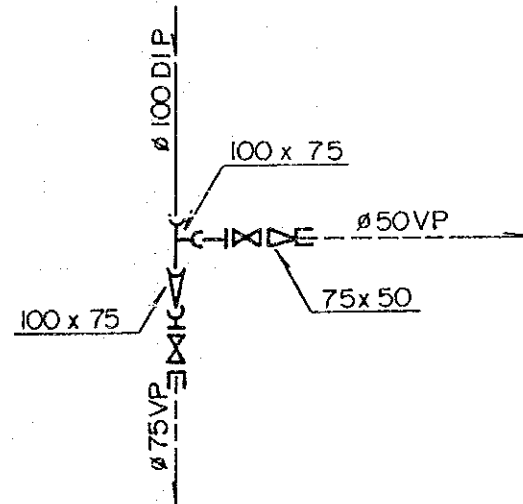
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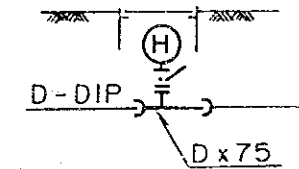
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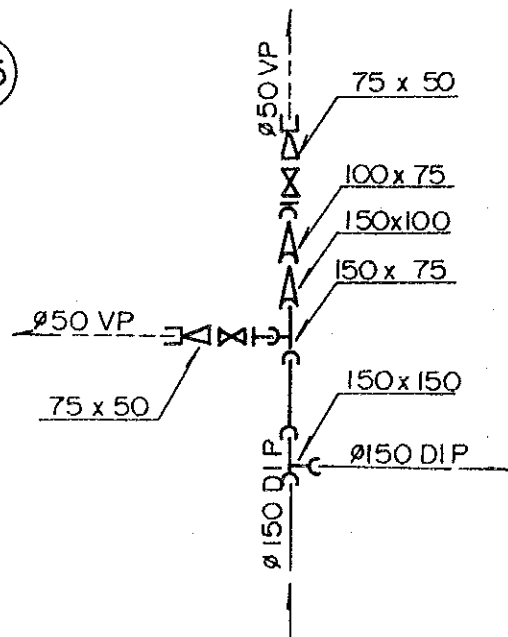
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150 x 75 ~ 10	NO. 56 ~ 58 NO. 63 ~ 64 NO. 66 ~ 68 NO. 70
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THE SOCIALIST REPUBLIC OF VIET NAM
 Transportation and Urban Public Works Service, HPC

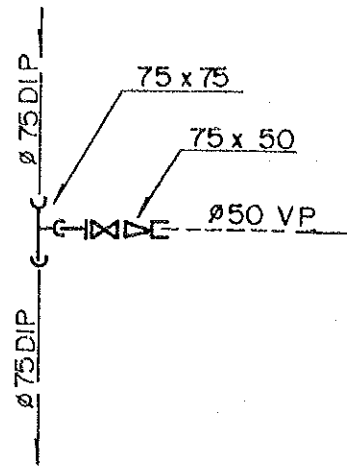
The Water Supply System in Gia Lam Area in Hanoi City

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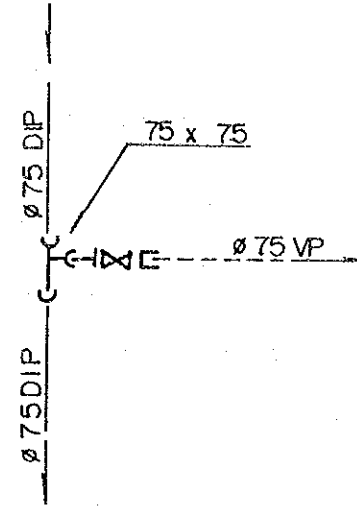
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JAPAN INTERNATIONAL COOPERATION AGENCY

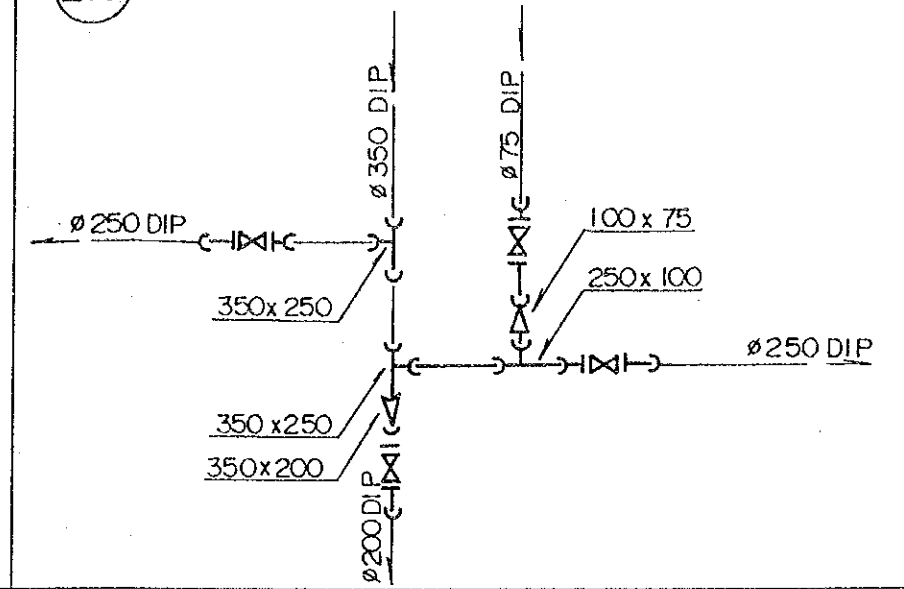
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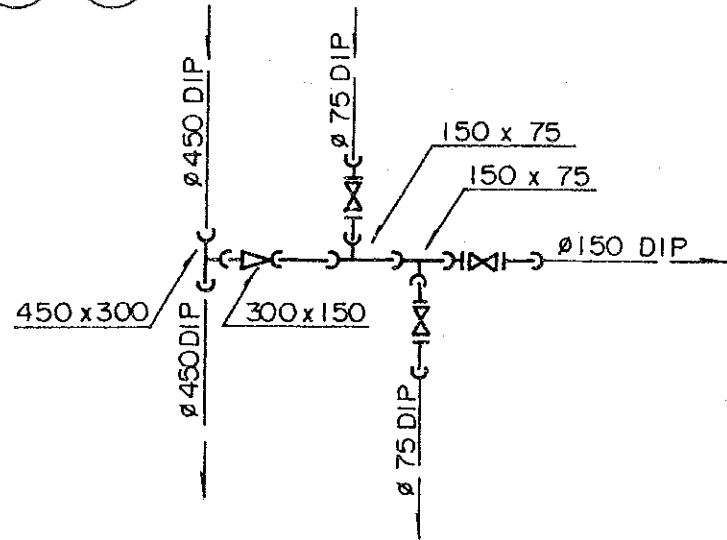
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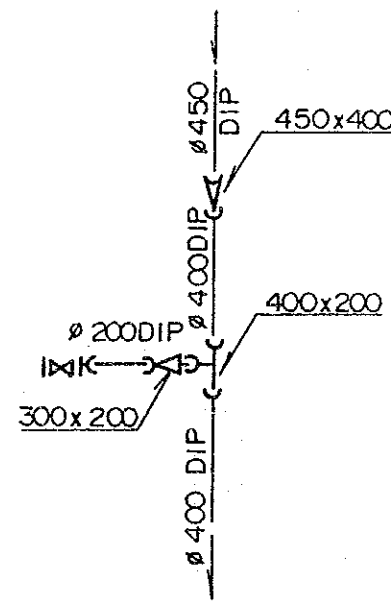
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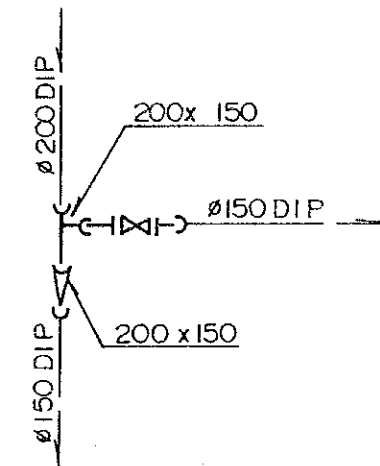
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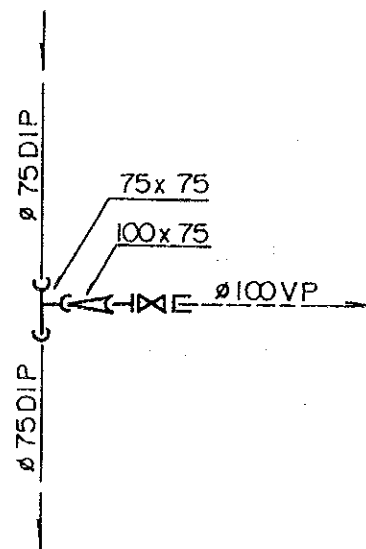
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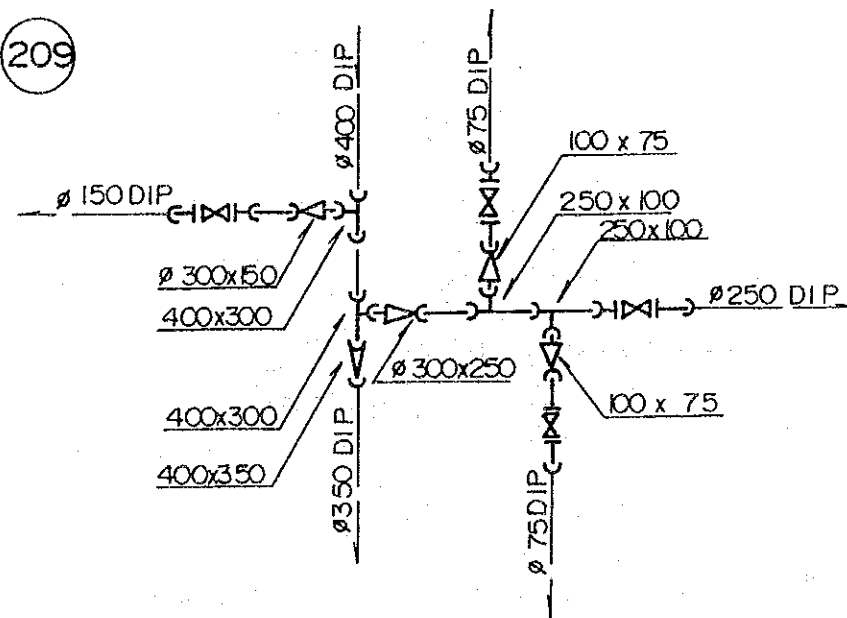
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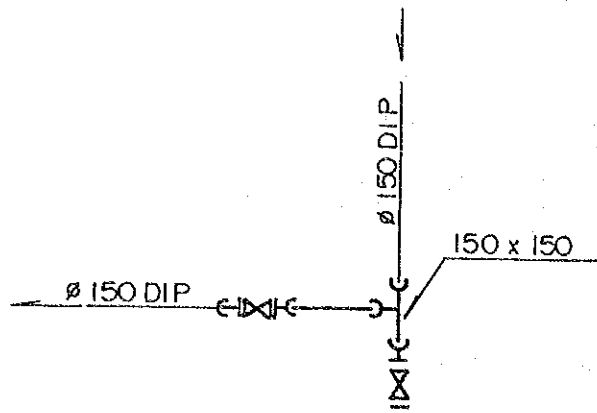


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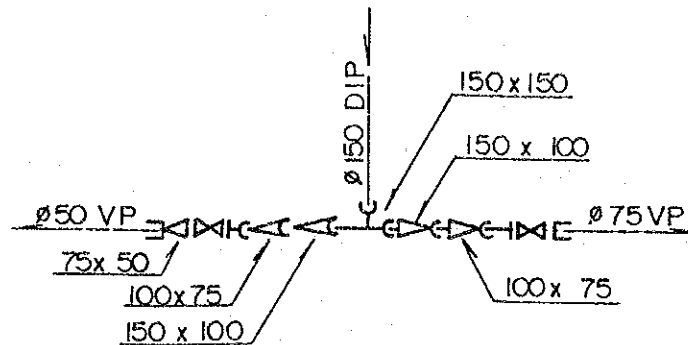


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
Draw. Name: Distribution Pipelines Fittings Detail (9)		
Sept., 1993	Scale 1:	Draw. No. 60
JAPAN INTERNATIONAL COOPERATION AGENCY		

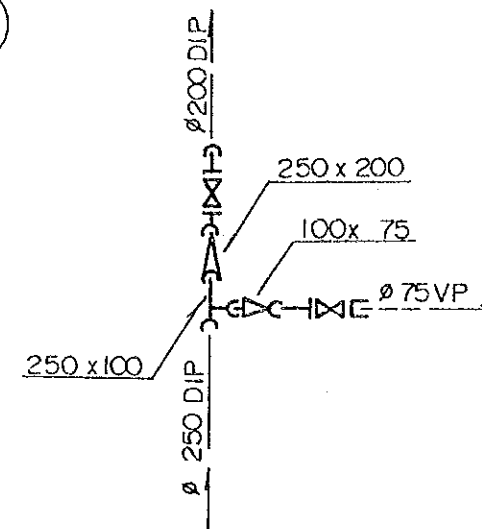
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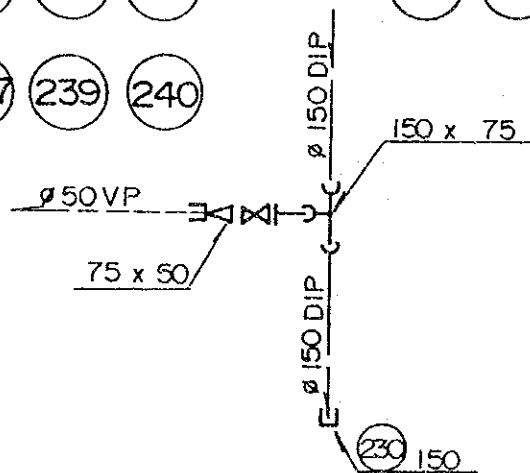
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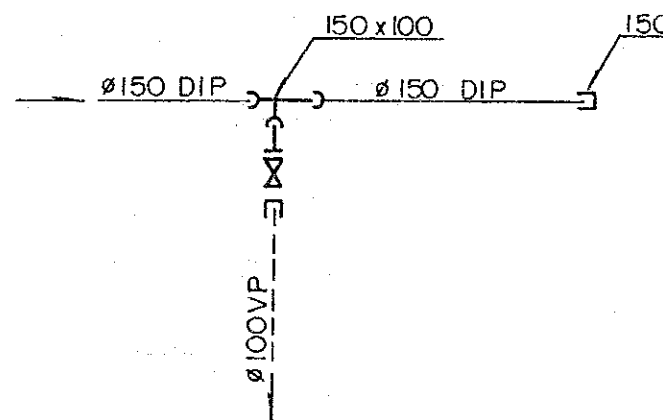
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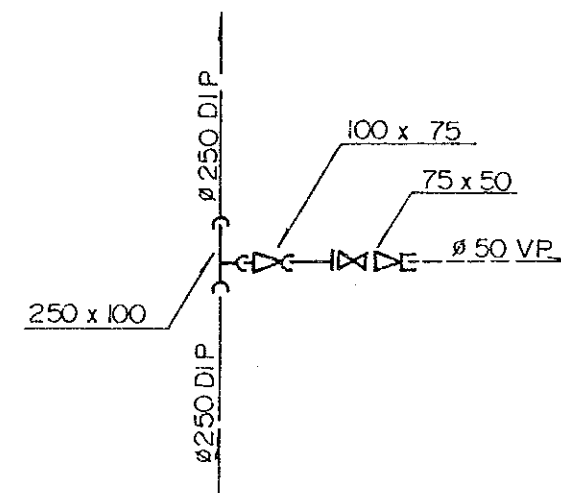
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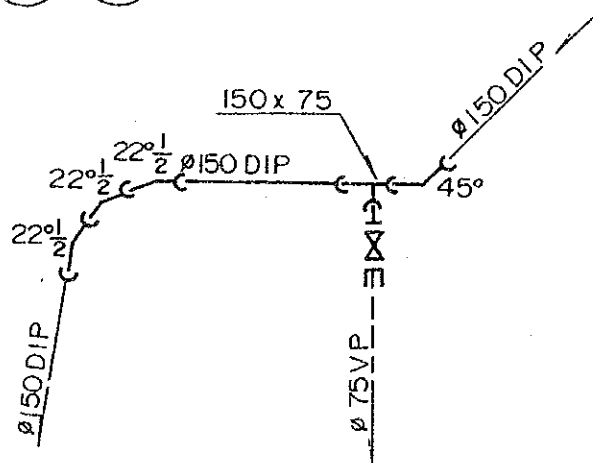
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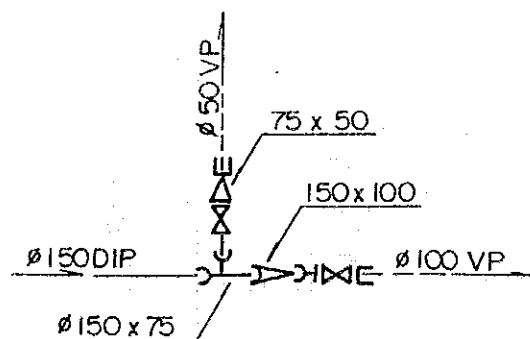
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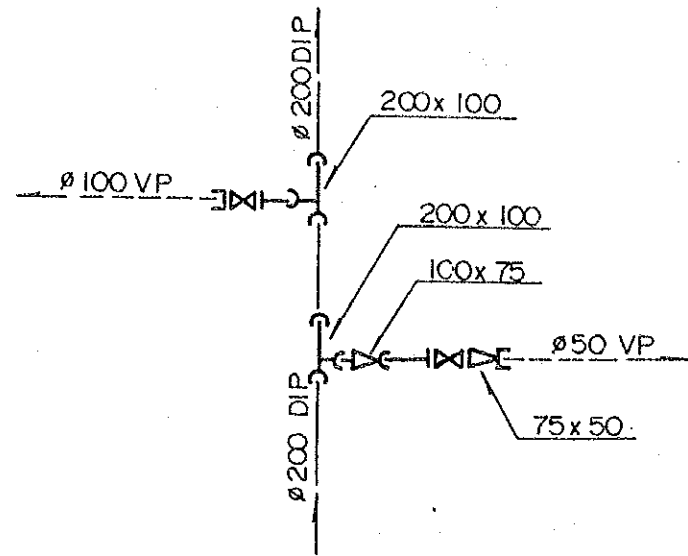


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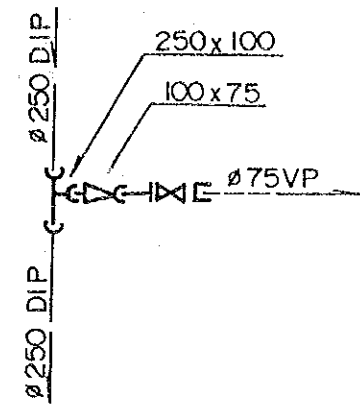


THE SOCIALIST REPUBLIC OF VIET NAM Transportation and Urban Public Works Service, HPC		
The Water Supply System in Gia Lam Area in Hanoi City		
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JAPAN INTERNATIONAL COOPERATION AGENCY		

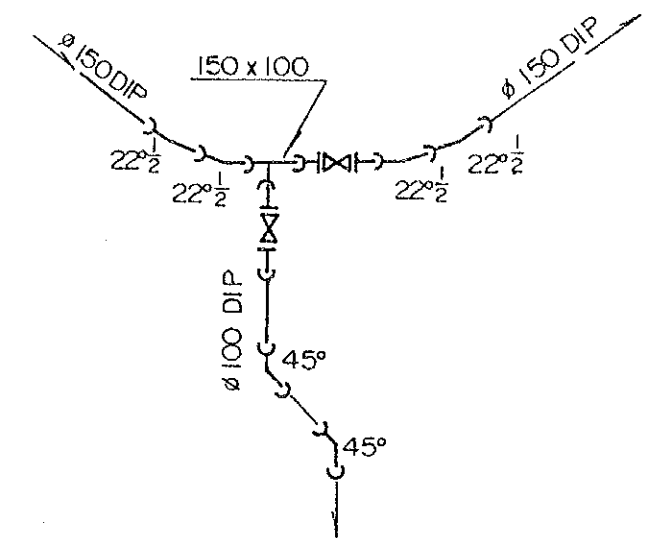
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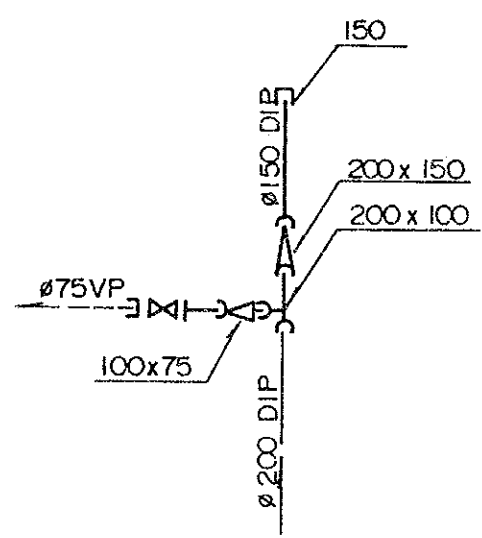
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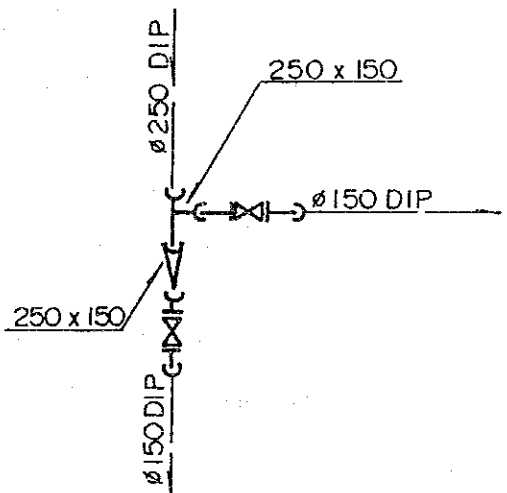
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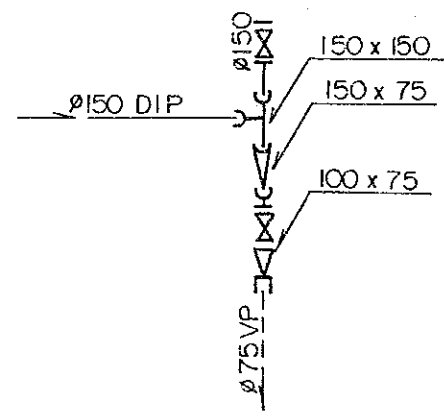
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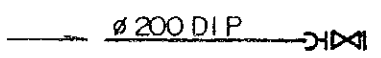
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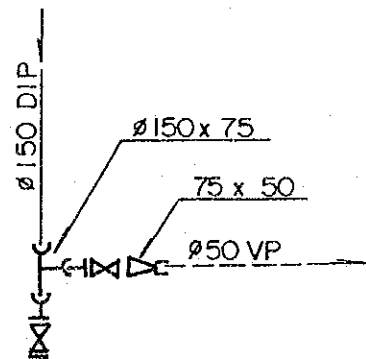
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THE SOCIALIST REPUBLIC OF VIET NAM
 Transportation and Urban Public Works Service, HPC

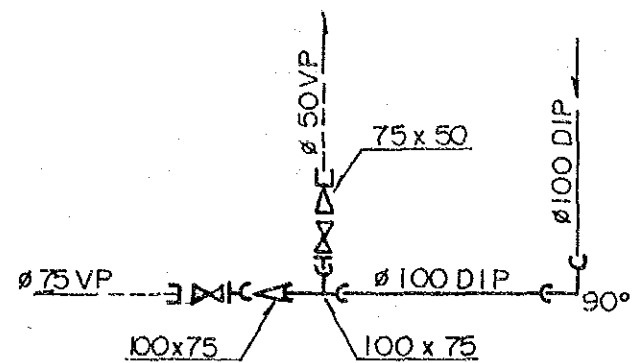
The Water Supply System in Gia Lam Area in Hanoi City

Draw. Name: Distribution Pipelines Fittings Detail (1 1)

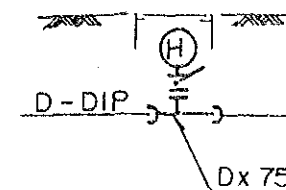
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JAPAN INTERNATIONAL COOPERATION AGENCY

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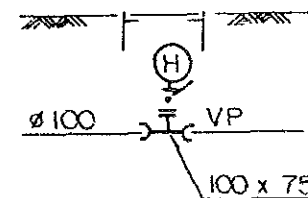


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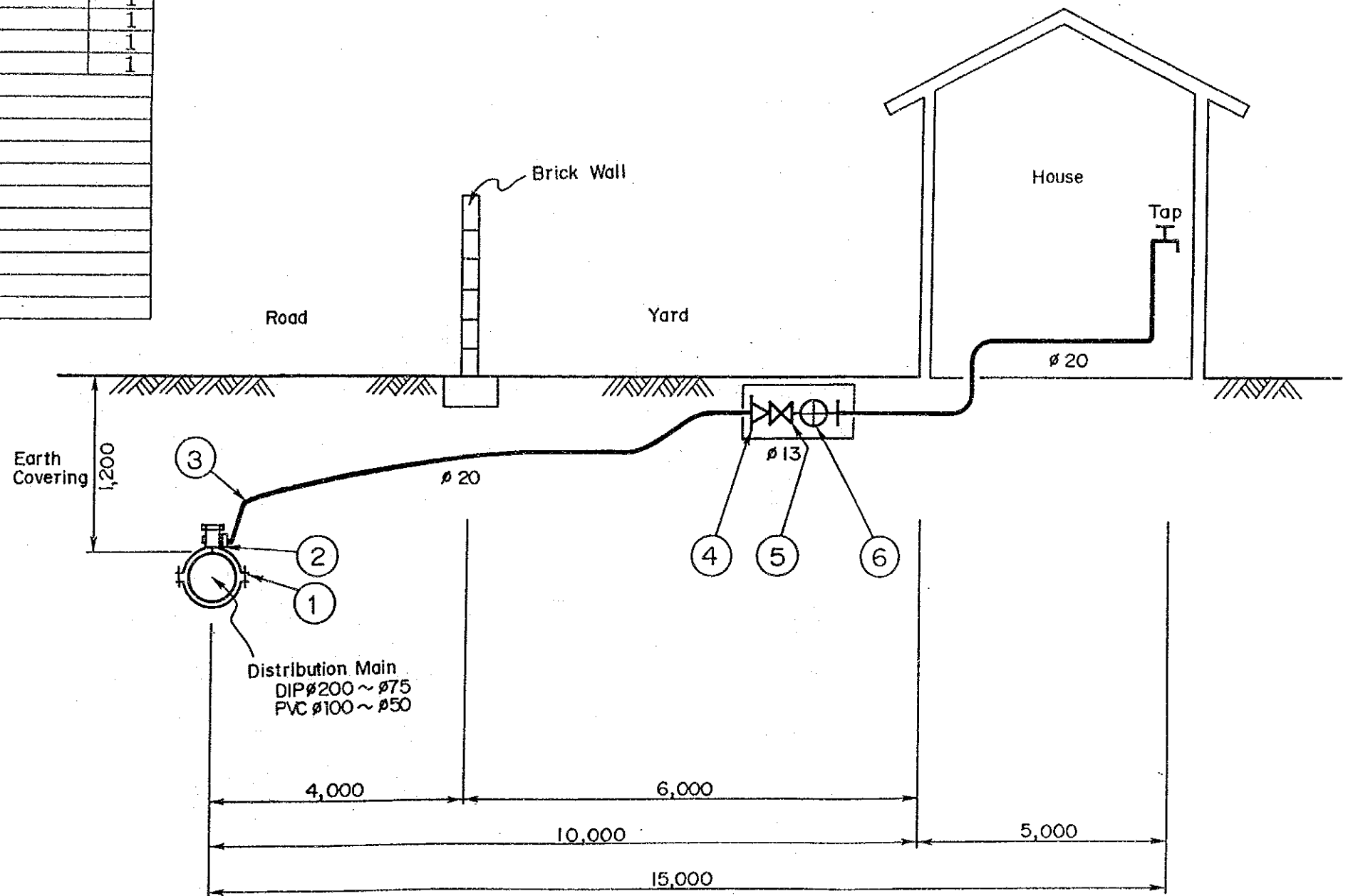


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THE SOCIALIST REPUBLIC OF VIET NAM
 Transportation and Urban Public Works Service, HPC
 The Water Supply System in Gia Lam Area in Hanoi City
 Draw. Name: Distribution Pipelines Fittings Detail (1 2)
 Sept., 1993 | Scale 1: | Draw. No. 63
 JAPAN INTERNATIONAL COOPERATION AGENCY

SUPPLY LIST OF MATERIALS FOR HOUSE CONNECTION TYPE-A

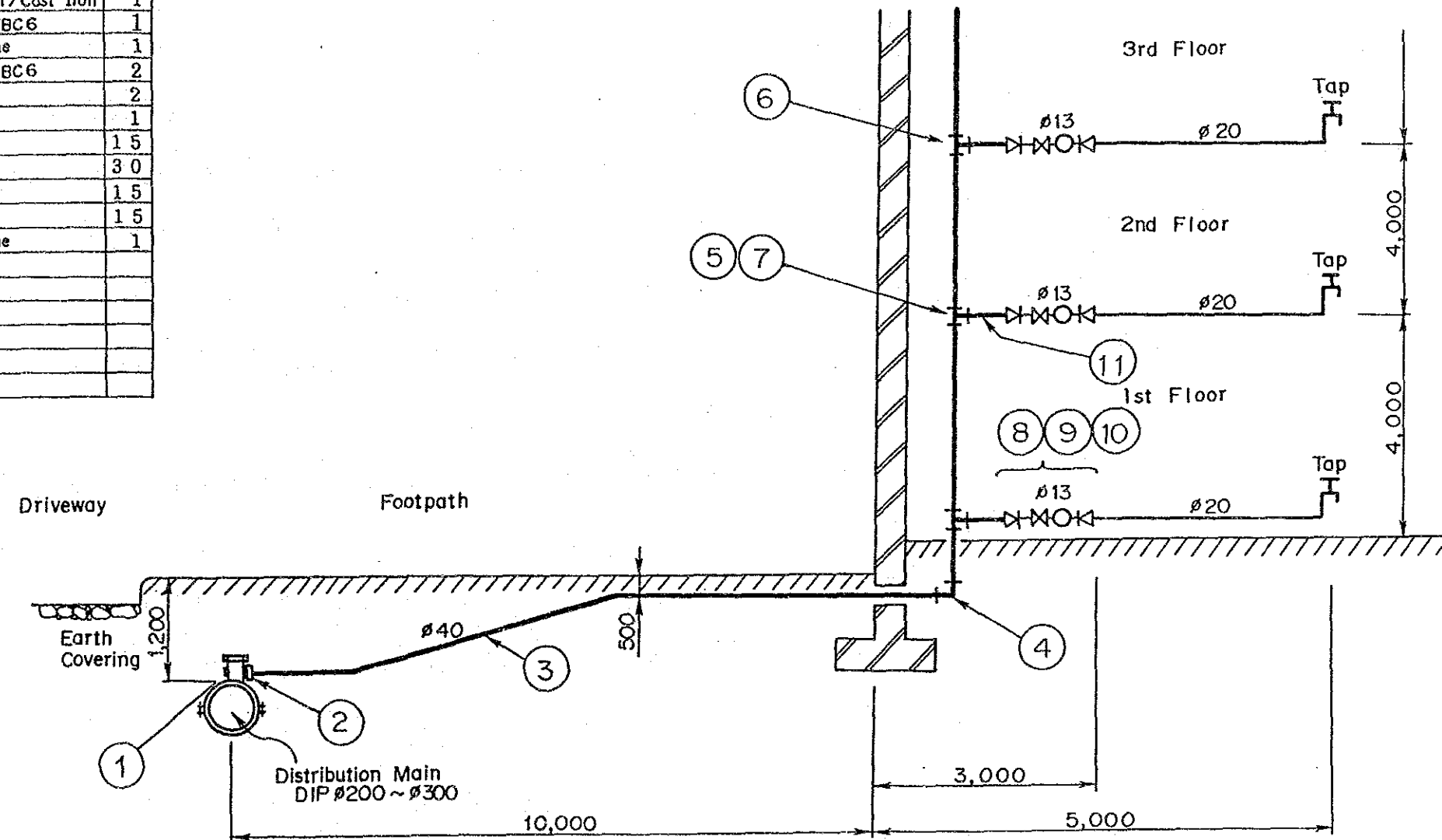
No.	DESCRIPTION	MATERIAL	Q'TY
①	Saddle with Ferrule		
*	Main Line : PVC $\phi 100 \times \phi 20$	Ductile Iron / Cast Iron	1
②	Screw Fitting for P.E. Pipe $\phi 20$	Gun Metal / BC 6	1
③	Polyethylene Service Pipe $\phi 20 \times 20m$	Polyethylene	1
④	Screw Fitting for P.E. Pipe (Taper) $\phi 20 \times \phi 13$	Gun Metal / BC 6	1
⑤	Stop Cock $\phi 13$	//	1
⑥	Water Meter $\phi 13$	//	1
Remarks	* ① Main Line PVC, D x d		
	$\phi 100 \times \phi 20$		
	$\phi 75 \times \phi 20$		
	$\phi 50 \times \phi 20$		
	Main Line : DIP, D x d		
	$\phi 200 \times \phi 20$		
	$\phi 150 \times \phi 20$		
	$\phi 100 \times \phi 20$		
	$\phi 75 \times \phi 20$		



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	House Connection Type - A	
Sept., 1993	Scale 1:	Draw. No. 64
JAPAN INTERNATIONAL COOPERATION AGENCY		

SUPPLY LIST OF MATERIALS FOR HOUSE CONNECTION TYPE-B

No.	DESCRIPTION	MATERIAL	Q'TY
①	Saddle with Ferrule		
*	Main Line : DIP $\phi 200 \times \phi 40$	Ductile Iron / Cast Iron	1
②	Screw Fitting for P.E. Pipe $\phi 40$	Gun Metal / BC 6	1
③	Polyethylene Service Pipe $\phi 40 \times 20m$	Polyethylene	1
④	Screw Fitting for P.E. Pipe (Bend) $\phi 40 \times 90^\circ$	Gun Metal / BC 6	2
⑤	ditto (Tee) $\phi 40 \times \phi 20$	"	2
⑥	ditto (Tee with One Blank Flange) $\phi 40 \times \phi 20$	"	1
⑦	ditto (Tee) $\phi 20 \times \phi 20$	"	1.5
⑧	ditto (Taper) $\phi 20 \times \phi 13$	"	3.0
⑨	Stop Cock $\phi 13$	"	1.5
⑩	Water Meter $\phi 13$	"	1.5
⑪	Polyethylene Service Pipe $\phi 20 \times 60m$	Polyethylene	1
Remarks	* ① Main Line : DIP, D x d		
	$\phi 200 \times \phi 40$		
	$\phi 150 \times \phi 40$		
	$\phi 100 \times \phi 40$		



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	House Connection Type - B	
Sept., 1993	Scale 1:	Draw. No. 65
JAPAN INTERNATIONAL COOPERATION AGENCY		

Appendix 1
List of Survey Team

Member List of Basic Design Study

- | | | |
|------------------------|-----------------------|---|
| 1) Team Leader | Mr. Haruo Iwahori | Japan International Cooperation Agency |
| 2) Planning Engineer | Mr. Toshiaki Fukunaga | Yamaguchi-Ogori Area Water Supply Authority |
| 3) Coordinator | Mr. Yodo Kakuzen | Japan International Cooperation Agency |
| 4) Planning Engineer | Mr. Akihiko Togo | Pacific Consultants International |
| 5) Treatment Engineer | Mr. Toshifumi Okaga | Pacific Consultants International |
| 6) Hydrogeologist | Mr. Makoto Yasuda | Hokkaido Engineering Consultants Co., Ltd. |
| 7) Mechanical Engineer | Mr. Kaichi Ishikawa | Pacific Consultants International |
| 8) Electric Engineer | Mr. Satoshi Kadowaki | Pacific Consultants International |
| 9) Piping Engineer | Mr. Hideki Yamazaki | Hokkaido Engineering Consultants Co., Ltd. |
| 10) Cost Estimator | Mr. Shunichi Nakatake | Pacific Consultants International |

Member List of Draft Repor Presentation

- | | | |
|-----------------------|---------------------|-----------------------------------|
| 1) Team Leader | Mr. Kiyoto Kurokawa | Japan International Cooperation |
| 2) Planning Engineer | Mr. Akihiko Togo | Pacific Consultants International |
| 3) Treatment Engineer | Mr. Toshifumi Okaga | Pacific Consultants International |
| 4) Piping Engineer | Mr. Hideki Yamazaki | Hokkaido Consultant |

Appendix 2
Itinerary of Study Team

Itinerary of Basic Design Study

Date	Work Item
April 24-25	Travel
April 26	Courtesy call to Embassy of Japan, Ha Noi People's Committee and other relating agency
April 27 - May 9	Site survey and discussions
May 10 - 20	Confirmation of water planning and design criteria
May 21 - 25	Study for treatment process and layout plan
May 26 - 27	Collecting of estimate information
May 28 - June 4	Discussions for Memorandum
June 5	Report to Embassy of Japan
June 6-8	Travel

Itinerary of Basic Design Study

Date	Work Item
August 16 - 17	Travel
August 18	Courtesy call to central Planning Committee, Ha Noi People's Committee and Embassy of Japan
August 19	Site Visit
August 20 - 24	Explanation of Draft Final Report and discussions
August 25	Signing of the minutes of discussions
August 26 - 28	Travel

Appendix 3
Officers concerned in Ha Noi City

LIST OF OFFICERS CONCERNED

ORGANIZATION	NAME	DESIGNATION	
EMBASSY OF JAPAN	MR. AKIHIKO FURUYA	MINISTER	
	MR. YOSHINORI KOINUMA	COUNCILOR	
	MR. HIROSHI OKUDAIRA	SECRETARY	
PEOPLE'S COMMITTEE HANOI CITY	NGUYEN THANH BINH	DIRECTOR	
	PHAM QUOC TRUONG	DEPUTY DIRECTOR	
	VUNAM	CHIEF DIVISION	
	TRUONG TUNG	VICE CHAIRMAN	
	HOANG LONG	ASSISTANT GENERAL DIRECTOR	
	PHAN MANH CHINH	HEAD OF OFFICE	
	MINISTRY OF CONSTRUCTION	KIUC VAN THANH	VICE MINISTER.
DESIGN COMPANY FOR WATER SUPPLY AND SANITATION SYSTEM	LE DOAN PHACH	DIRECTOR	
	DINH VET DUONG	CHIEF OF LABORATORY	
	NGUYEN NGOC THUYET	DEPUTY DIRECTOR	
	PHAN THIET	HEAD OF ELECTRICAL DEPARTMENT	
	LE NGOC PHUONG	HEAD OF GEOLPGY INVESTIGATION DEPARTMENT	
	DINH VIET DUONG	CHEMIST	
	MIN DUC	WATER TREATMENT ENGINEER	
	HOANG DINH TOAN	PIPELINE ENGINEER	
	WATER SUPPLY AND SEWERAGE CONSTRUCTION CO., MINISTRY OF CONSTRUCTION	NGUYEN QUY DON	GENERAL MANAGER
	GEOLOGICAL SURVEY OF VIETNAM	LE VAN HIEN	HEAD OF ENGINEERING SECTION
TONG BA LAN		DIRECTOR GENERAL	
TRAN MINH		GEOLOGIST	

HANOI POWER SUPPLY DEPARTMENT	NGUEN VAN DAN	GEOLOGIST
INVESCO	HUNG	DIRECTOR
HANOI WATER DRAINAGE CO.,	WOAN	ELECTRICAL ENGINEER
HANOI PUBLIC WORKS COMMUNICATION	LE MINH CHAU	DIRECTOR
DESIGN COMPANY	HOANG CHAU	DIRECTOR
HANOI SEWERAGE AND DRAINAGE CO.,	LE MINH CHAU	DIRECTOR
GIA LAM WATER SUPPLY CO.,	ZIANG	DEPUTY DIRECTOR
GIA LAM PEOPL'S COMMITTEE	LUONG MINH SUOT	CHAIRMAN
THE VIETNAM RAIL WAY UNION	DAO CONG TU	CHIEF
GIA LAM TRAIN FACTORY	BUI BA NHUAN	DIRECTOR

Appendix 4
Minutes of Discussion

Minutes of Discussions
for
Basic Design Study

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT
FOR
THE WATER SUPPLY SYSTEM IN GIALAM AREA IN
HANOI CITY IN THE SOCIALIST REPUBLIC OF VIET NAM

Based on the results of the Preliminary Study, the Japan International Cooperation Agency (JICA) decided to conduct a Basic Design Study on Project for the Water Supply System in Gialam Area in Hanoi City in the Socialist Republic of Viet Nam (hereinafter referred to as "the Project").

JICA sent a study team, which is headed by Mr. Haruo Iwahori, Development Specialist, JICA to the Socialist Republic of Viet Nam and the team is scheduled to stay in the country from April 25, to June 6, 1993.

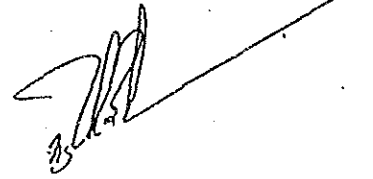
The team held discussions with the officials concerned of the Government of the Socialist Republic of Viet Nam and conducted a field survey at the study area.

In the course of the discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further work and prepare the Basic Design Study Report.

Hanoi, May 18, 1993

岩堀春雄

Mr. Haruo Iwahori
Leader
Basic Design Study Team
JICA



Mr. Nguyen Thanh Bin
Director
Transportation
and
Urban Public Works Serv

ATTACHMENT

1. Objective

The objective of the Project is to extend the water supply system for the improvement of the water supply situation in Gia Lam Area in Hanoi City.

2. Project Site

The site of the Project is located at Gialam Area which is on the left side of the Red River in Hanoi City. The tentative location map of the site shown in Annex I of the minutes of discussions of the Preliminary Study is finalized as shown in Annex I of this attachment according to the Gia Lam Water Master Plan during the Basic Design Study.

3. Executing Agency

The executing agency of the Project is the Transportation and Urban Public Works Service (TUPWS) supervised by the Hanoi People's Committee, bears over all responsibilities for the administration and execution of the Project.

4. Items Requested by the Viet Nam Side

After discussion with the Basic Design Study Team, the following items were judged necessary for the realization of the Project.

- 1) Supply of two units of drilling equipment.
- 2) Supply of materials and equipment for twelve well construction.
- 3) Installation of pumps and electrical works for twelve wells.
- 4) Detail design and construction of raw water transmission lines for 7 km.
- 5) Detail design and construction of treatment plant in design capacity of 30,000m³/d.
- 6) Supply of materials for distribution pipelines in a range of diameter from 50mm to 600mm, including necessary installation equipment.
- 7) Supply of materials and auxiliary equipment for house connections.

However, the final components of the Project may differ from the above items, if it is judged necessary to revise after further studies.

5. Japan's Grant Aid System

1) Viet Nam side had understood the system of Japan's Grant Aid explained by the team.

2) Viet Nam side will take the necessary measures described in Annex II for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. Schedule of the Study

1) The consultants will proceed the field survey in the Socialist Republic of Viet Nam until June 6, 1993.

2) JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around August, 1993.

3) In case that the contents of the report is accepted in principle by the Government of the Socialist Republic of Viet Nam, JICA will complete the final report and send it to the Government of the Socialist Republic of Viet Nam by the end of October, 1993.

7. Scope of Cooperation

The scope of cooperation to be covered by the scheme of Japan's Grant Aid will be studied and clarified by the Basic Design Study which is carried out by JICA, after the feasibility of the Project is confirmed by the Government of Japan.

8. Scope of Work of Basic Design Study

The scope of work of the basic design study will include;

- 1) Technical survey
- 2) Management and financial survey
- 3) Basic design of facilities and equipment for the Project
- 4) Implementation plan of the Project
- 5) Evaluation of the Project

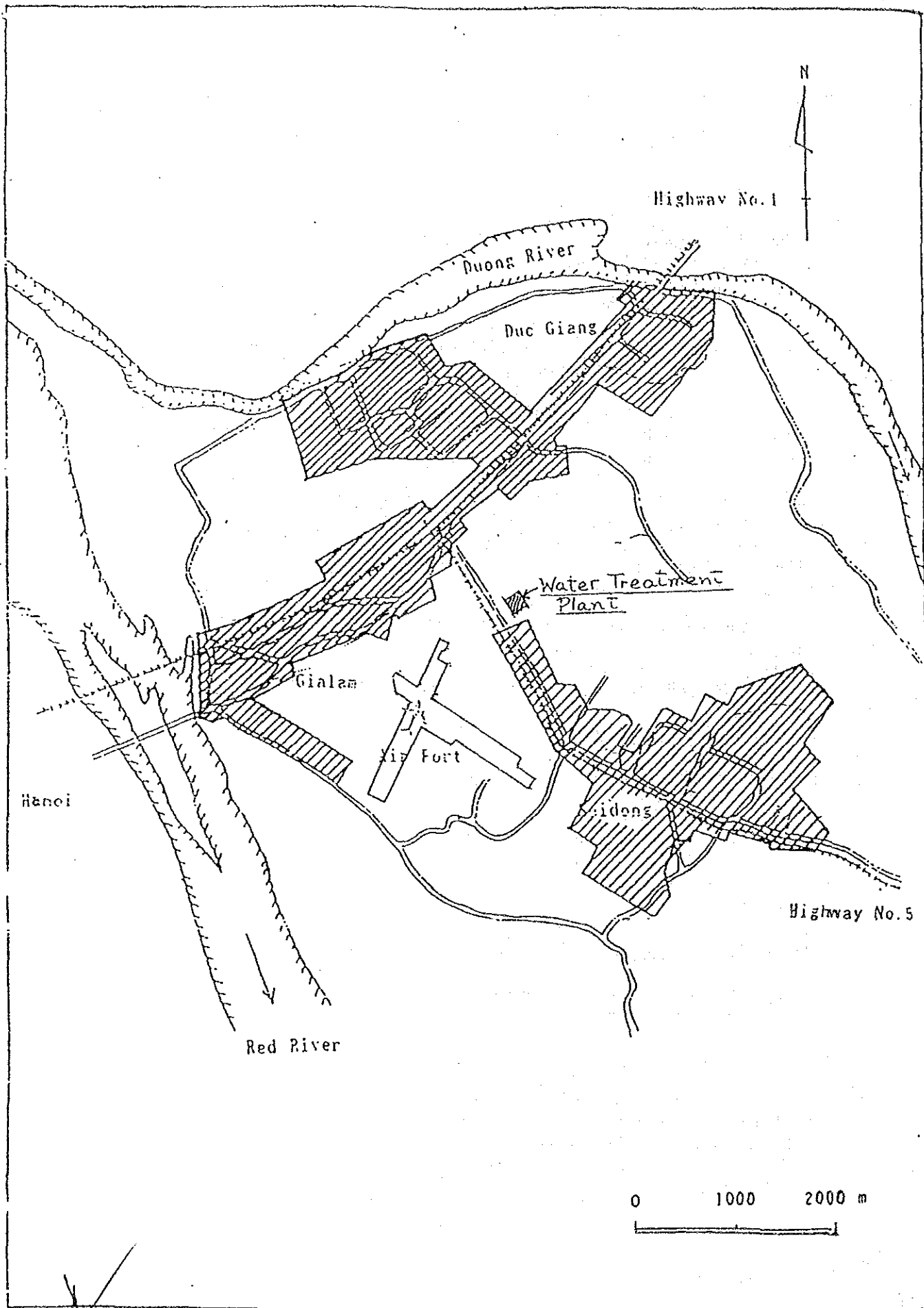
9. Items Discussed by Both Sides

Both sides confirmed items written in Annex III and IV for purpose of smooth and effective implementation of the Project.

10. Title of the Project

The official title of the Project is changed to "Basic Design Study on the Project for the Water Supply System in Gia Lam Area, Hanoi City in the Socialist Republic of Viet Nam".

ANNEX 1.



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ANNEX II

Necessary Measures to be Taken by the Government of the Socialist Republic of Viet Nam on condition that Japan's Grant Aid Assistance is extended.

1. To provide data and information necessary for the Project,
2. To bear the commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement,
3. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation in Viet Nam,
4. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into Viet Nam and stay therein for such performance of their work,
5. To assign the necessary staff for operation and maintenance of the facilities constructed and equipment purchased under the Grant Aid,
6. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant Aid and
7. To bear all the expenses other than those to be born by the Grant Aid necessary for construction of the facilities as well as for the transportation and installation of the equipment.

ANNEX III

As a result of discussions and field survey, both sides confirmed the following items:

1. The Project corresponds to the contents of the "Water Master Plan of Hanoi City" and the "Gia Lam Water Master Plan", and also the Project contributes to realize the objectives of the above mentioned Master Plans.
2. Working share of the implementation is shown in ANNEX IV.
3. Although the industrial water demand is excluded in the design, the water use for domestic purpose in the industrial area is included in the design capacity of the Project.
4. In order to execute the Project effectively, Viet Nam side strongly requested to the team to provide training for technology and management in the field of water supply in Japan.
5. Viet Nam side shall take necessary measures to prevent any public nuisance to be caused by the increased water consumption due to the Project.
6. Viet Nam side shall obtain all necessary permission and approval of the land use for the treatment plant. The authorized land use will be reported in a written form to the Embassy of Japan by 30 of June, 1993.

The team strongly requested to the Viet Nam side efficiency and sustainability of the project on condition that Japan's Grant Aid Assistance is extended, and Viet Nam side agreed the following items:

7. To secure the necessary budget for Viet Nam's working share shown in the ANNEX IV.
8. To execute Viet Nam's working share in accordance with the implementation schedule of Japan's working share.

The tentative implementation schedule of Japan's working share will be from December, 1993 to March, 1996.

9. To secure necessary institution and manpower for the purpose of proper implementation of the Project, operation and maintenance for its after completion of the water supply system.
10. To secure financial sustainability for the Project by collecting reasonable water tariff after completion of the water supply system.
11. To secure necessary budget for proper operation and maintenance after completion of the water supply system.

ANNEX IV

Both side confirmed that working share of the implementation is shown in the Table.

Table: Working Share

Item of Works	Viet Nam	Japan
1. Intake Facilities		
1) To acquire the land for the construction sites.	Yes	
2) To heap up, level and reclaim the sites.	Yes	
3) To construct gate, fence and exterior lights in and around the sites.	Yes	
4) To construct access roads.	Yes	
5) To supply electric power to the sites	Yes	
6) Drilling equipment.		Yes
7) Materials and equipment of well construction.		Yes
8) Construction and supervision of wells.	Yes	
9) Installation and supervision of pumps and electrical works including pump houses.		Yes
10) Detail design of raw water transmission lines.		Yes
11) Construction and supervision of raw water transmission lines.		Yes

Item of Works	Viet Nam	Japan
2. Treatment Facilities		
12) To acquisite the land for construction.	Yes	
13) To heap up, level and reclaim the site.	Yes	
14) To construct gate, fence and exterior lights in and around the site.	Yes	
15) To construct access roads.	Yes	
16) To supply electric power to the site	Yes	
17) Construction of drainage facilities from the treatment plant site.	Yes	
18) Detail design of treatment plant.		Yes
19) Construction and supervision of treatment plant including reservoirs and distribution pumps.		Yes
20) Detail design, construction and supervision of administrative buildings including ware house.	Yes	
3. Distribution Pipeline Network Facilities		
21) To acquisite the land for pipeline networks.	Yes	
22) Stockyard for supplied materials.	Yes	
23) Detail design of pipeline networks including elevated tanks.	Yes	
24) Materials for distribution pipeline networks.		Yes
25) Construction and supervision of pipeline networks including elevated tanks.	Yes	
26) Materials and auxiliary equipment for house connections.		Yes
27) Installation and supervision of house connections.	Yes	

Minutes of Discussions
for
Draft Final Report Presentation

Minutes of Discussion
Basic Design Study on The Project for
The Water Supply System in Gia Lam Area
Ha Noi City in The Socialist Republic of Viet Nam

In April 1993, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for the Water Supply System in Gia Lam Area, Ha Noi City in The Socialist Republic of Viet Nam (hereinafter referred to as the Project), and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft report of the study.

In order to explain and to consult the Viet Nam side on the components of the draft report, JICA has sent to the Socialist Republic of Viet Nam study team which is headed by Mr. Kiyoto KUROKAWA, First Basic Design Study Division, Grant Aid Study and Design Department, JICA and is scheduled to stay in the country from August 17, 1993 to August 27, 1993.

As a result of discussions, both parties have confirmed the main items described on the attached sheets.

Ha Noi, August 26, 1993



Mr. Kiyoto KUROKAWA
Leader
Basic Design Study Team



Mr. Nguyen THANH BINH
Director
Transportation
and
Urban Public Works Service

ATTACHMENT

1. Components of Draft Report

The Government of Viet Nam has agreed and accepted in principle the components of the Draft Report proposed by the Team.

2. Japan's Grant Aid System

- (1) Viet Nam side has understood the system of Japan's Grant Aid explained by the team.
- (2) Viet Nam side will take the necessary measures described in Annex-1 for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

3. The Team will make the Final Report in accordance with the confirmed items, and send it to the Government of Viet Nam by the end of October 1993.

4. Items Discussed by Both Sides

Items discussed by the both sides are shown in Annex-2.

5. Recommendations

Importance of the recommendations given in the Draft Final Report, was confirmed as shown in Annex-3.

6. Viet Nam side will execute Viet Nam's working share in accordance with the implementation schedule of Japan's working schedule. A provisional schedule of Japan's working share will be from December, 1993 to March, 1996.

7. Discussions have been made on the draft final report and comments raised were clarified through discussions. Further comments, if any, shall be transferred to the study team through Embassy of Japan before 10 September, 1993.

ANNEX-I

Necessary measures to be taken by the Government of the Socialist Republic of Viet Nam on condition that Japan's grant Aid Assistance is extended;

1. To provide data and information necessary for the Project,
2. To ensure land for the sites of the project,
3. To clear, level and reclaim the sites prior to commencement of the construction,
4. To construct access roads to the sites prior to commencement of the construction,
5. To provide facilities for distribution of electricity and other incidental facilities such as gate, fence and exterior lighting in and around the sites,
6. To bear the commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement,
7. To exempt taxes and to take necessary measures for custom clearance of the materials and equipment brought for the Project at the port of disembarkment in Viet Nam,
8. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into Viet Nam and stay therein for such performance of their work,
9. To assign the necessary staff for operation and maintenance of the facilities and equipment purchased under the Grant Aid,
10. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant Aid and
11. To bear all the expenses other than to be born by the Grant Aid necessary for construction of facilities as well as for the transportation and installation of the ,
12. To announce the objective of the project to the people of the project area to obtain their full cooperation with the project.

ANNEX II

Both sides confirmed that working share of the implementation is shown in the Table.

Table: Working Share

Item of Works	Viet Nam	Japan
1. Intake Facilities		
1) Land acquisition of construction sites.	Yes	
2) Land preparation of the drilling sites.	Yes	
3) To construct gate, fence and exterior lights in and around the sites.	Yes	
4) To construct access roads.	Yes	
5) To supply electric power to the sites	Yes	
6) Drilling equipment:		Yes
7) Materials and equipment of well construction.		Yes
8) Construction and supervision of wells.	Yes	
9) Installation and supervision of pumps and electrical works including pump houses.		Yes
10) Materials for raw water transmission line.		Yes
11) Detail design of raw water transmission lines.	Yes	
12) Construction and supervision of raw water transmission lines.	Yes	

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Item of Works	Viet Nam	Japan
2. Treatment Facilities		
12) Land acquisition of the treatment plant site.	Yes	
13) To heap up, level and reclaim the site.	Yes	
14) To construct gate, fence and exterior lights in and around the site.	Yes	
15) To construct access roads.	Yes	
16) To supply electric power to the site	Yes	
17) Construction of drainage facilities from the treatment plant site.	Yes	
18) Detail design of treatment plant.		Yes
19) Construction and supervision of treatment plant including distribution pumps.		Yes
20) Construction and supervision of reservoirs and drying bed of sludge treatment facility.	Yes	
21) Detail design, construction and supervision of administrative buildings including ware house.	Yes	
3. Distribution Pipeline Network Facilities.		
21) Land acquisition for pipeline networks.	Yes	
22) Stockyard for supplied materials.	Yes	
23) Detail design of pipeline networks	Yes	
24) Materials for distribution pipeline networks.		Yes
25) Construction and supervision of pipeline networks.	Yes	
26) Materials and auxiliary equipment for house connections.		Yes
27) Installation and supervision of house connections.	Yes	

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ANNEX III

Through discussions, importance of the recommendations for the project implementation given in the draft final report, is confirmed as listed below and with understanding of these recommendations, the project can be regarded as a model of the medium scale urban water supply schemes in Viet Nam:

1. Although it is definitely required to increase the water tariff in near future in accordance with increase in production costs of water and income level of beneficiaries, the water tariff is set to maintain financial self sustenance of the water company.
2. For this purpose, it is strongly recommended to establish a new financially and institutionally independent water supply company under supervision of TUPWS.
3. In order secure water charge collection, house connections shall be completed in an early stage of the project implementation.

For this purpose, construction of the distribution pipeline shall be completed within the construction period of the project.
4. As special attention shall be paid at construction of distribution pipelines to prevent leakage through joints, a special inspection team shall be organized.
5. In 2006 an extension of the project facilities will be required to meet the future water demand. Prior to the extension of facilities, a new water supply plan shall be formulated incorporating the urban conditions at that time.
6. In order to prevent environmental deterioration caused by the water pollution, it is strongly recommended to take necessary measures for drainage and sewerage system in the project area.

