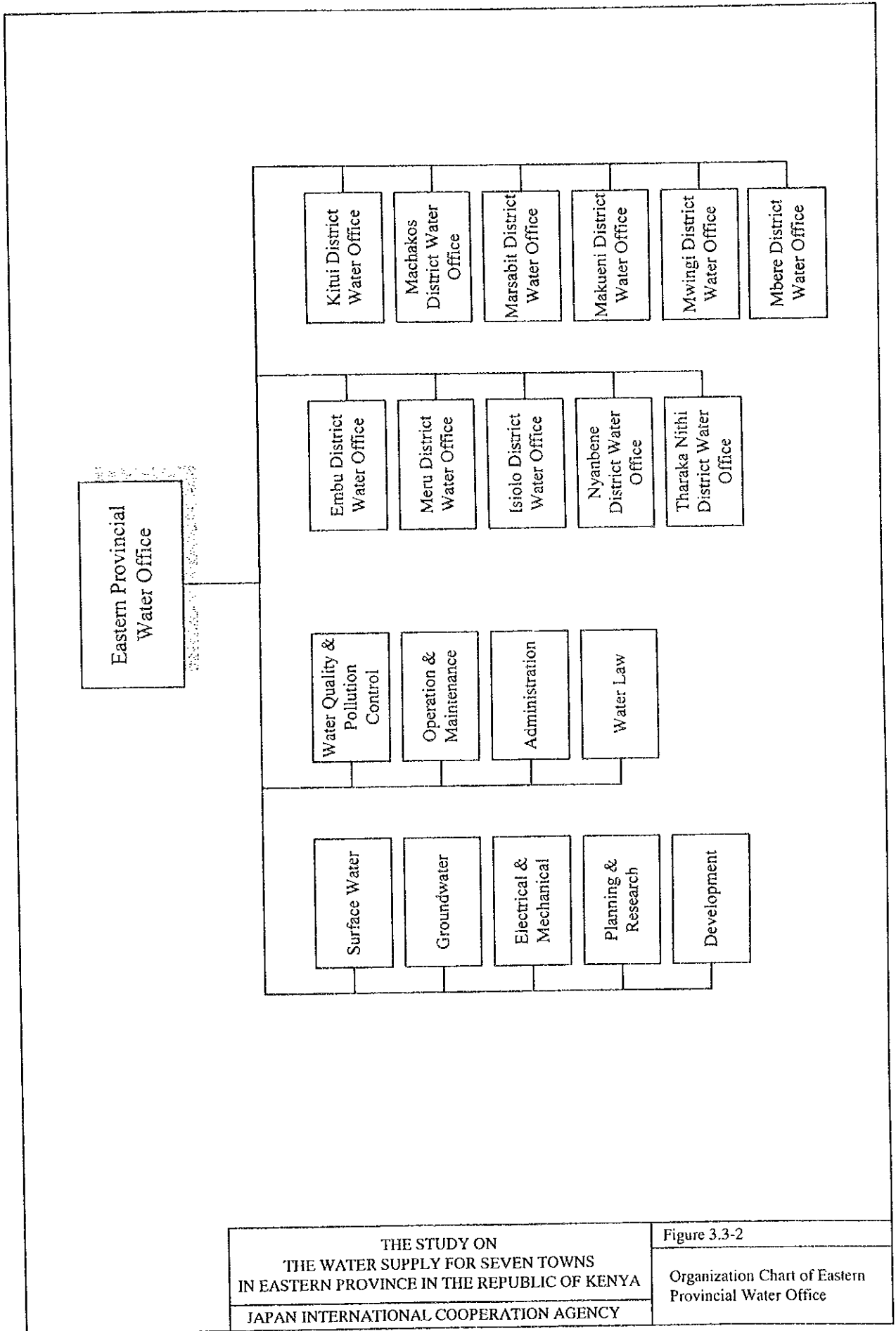


Source : MLRRWD, as of October, 1996

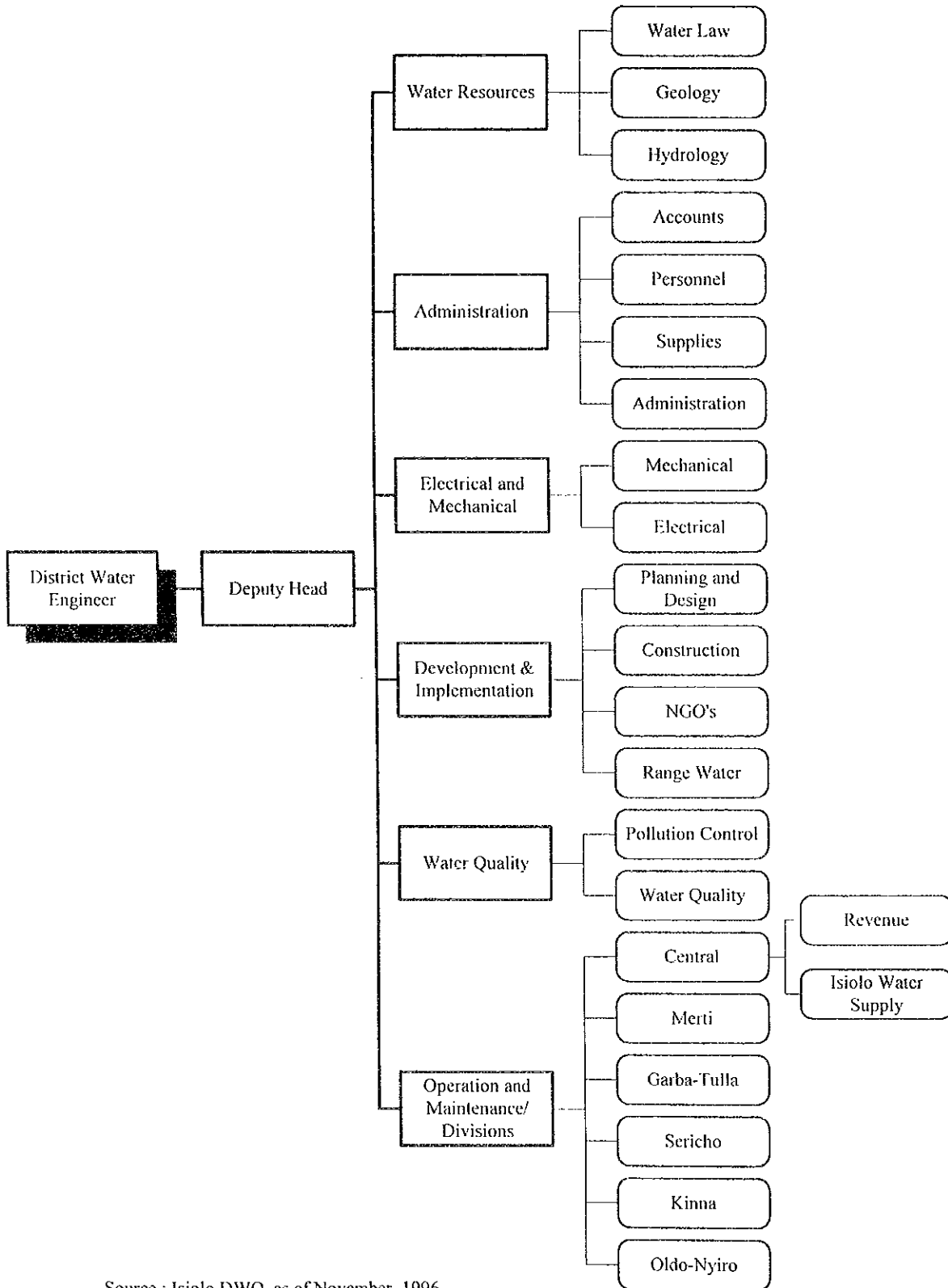
THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 3.3-1
Organization Chart of MLRRWD



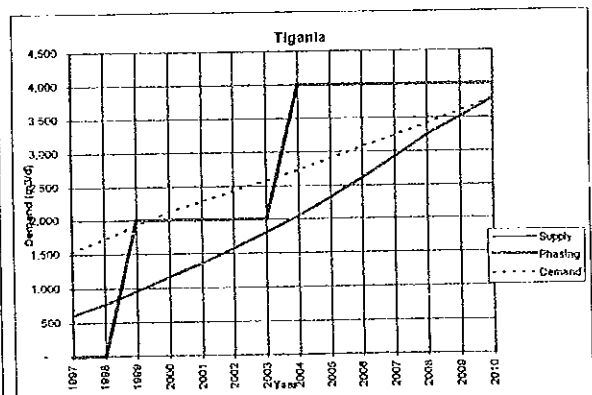
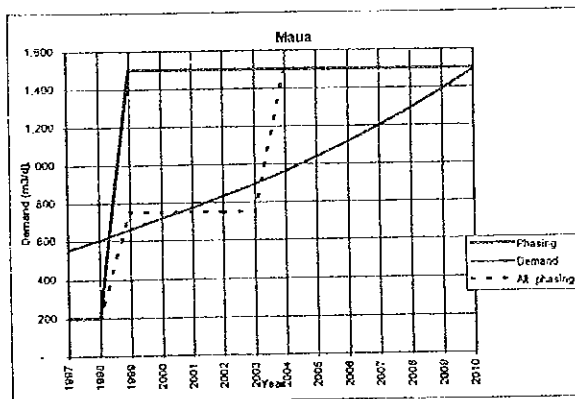
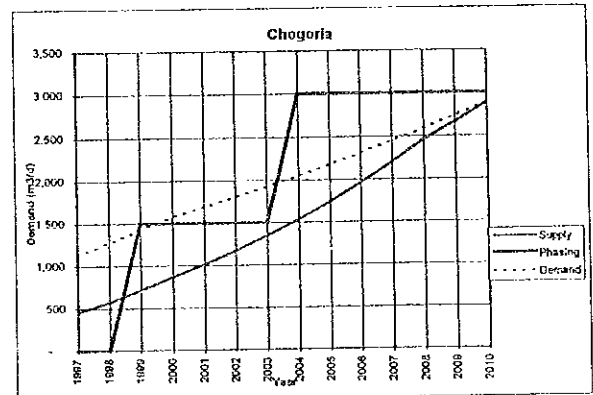
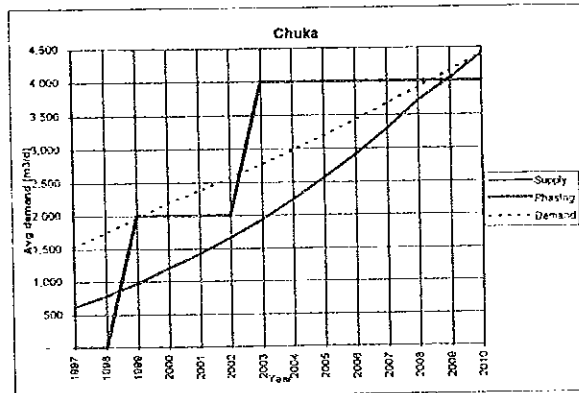
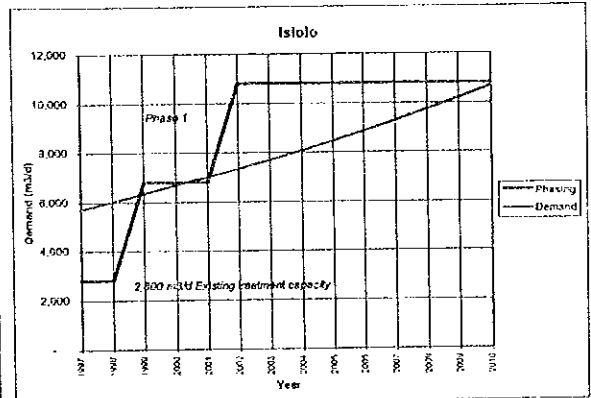
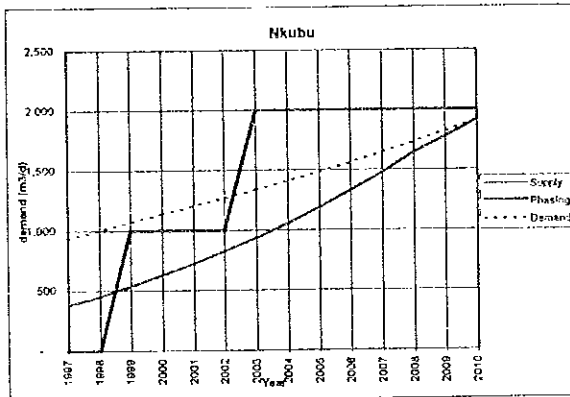
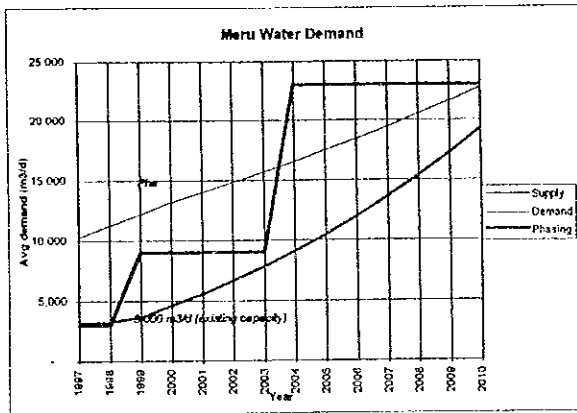
THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 3.3-2
 Organization Chart of Eastern
 Provincial Water Office



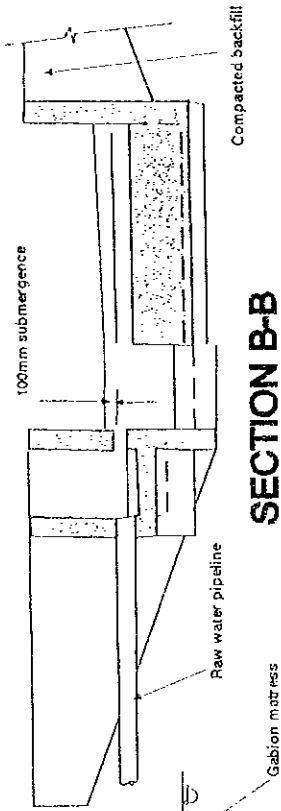
Source : Isiolo DWO, as of November, 1996

THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY	Figure 3.3-3 Organization Chart of District Water Office in Isiolo
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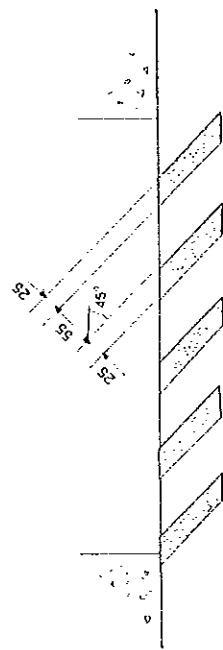


THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
JAPAN INTERNATIONAL COOPERATION AGENCY

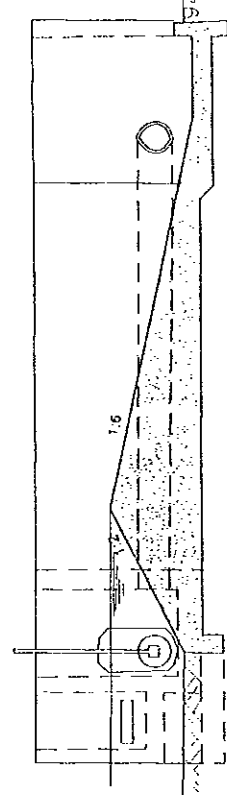
Figure 5.1-1
Average Water Demand and
Supply Projection and Phasing



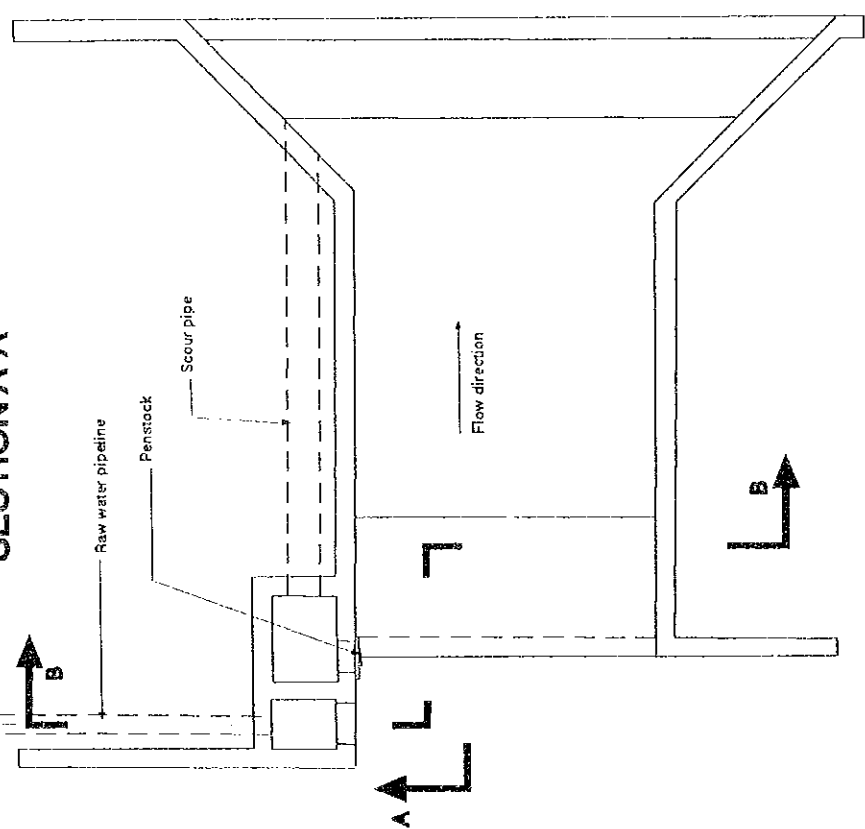
SECTION B-B



Coarse screen detail - plan



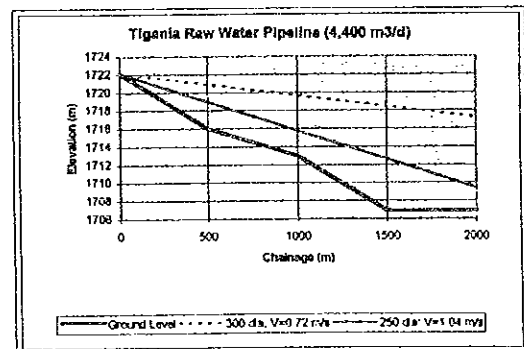
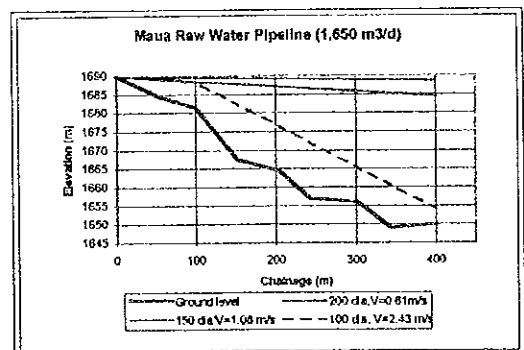
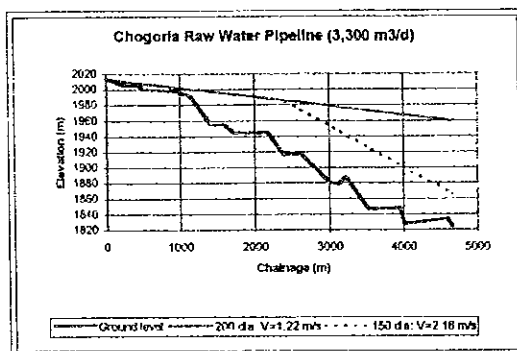
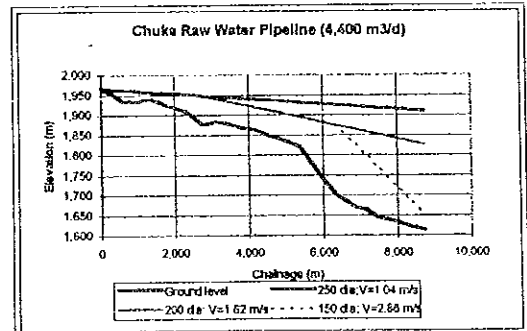
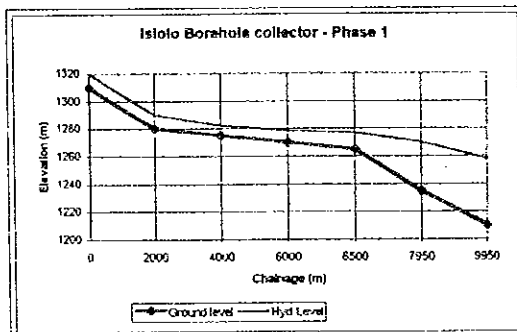
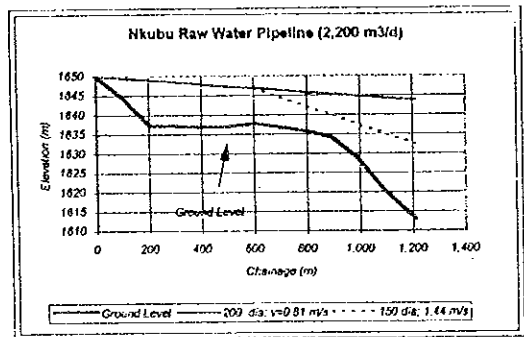
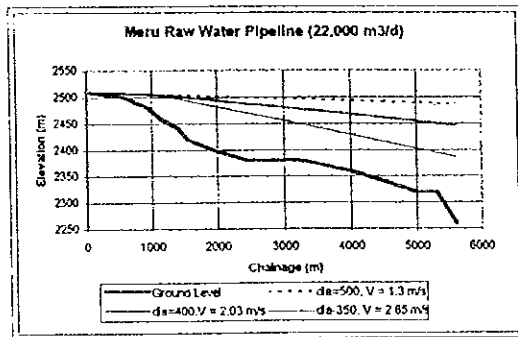
SECTION A-A



PLAN

THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

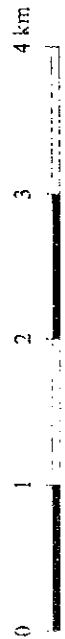
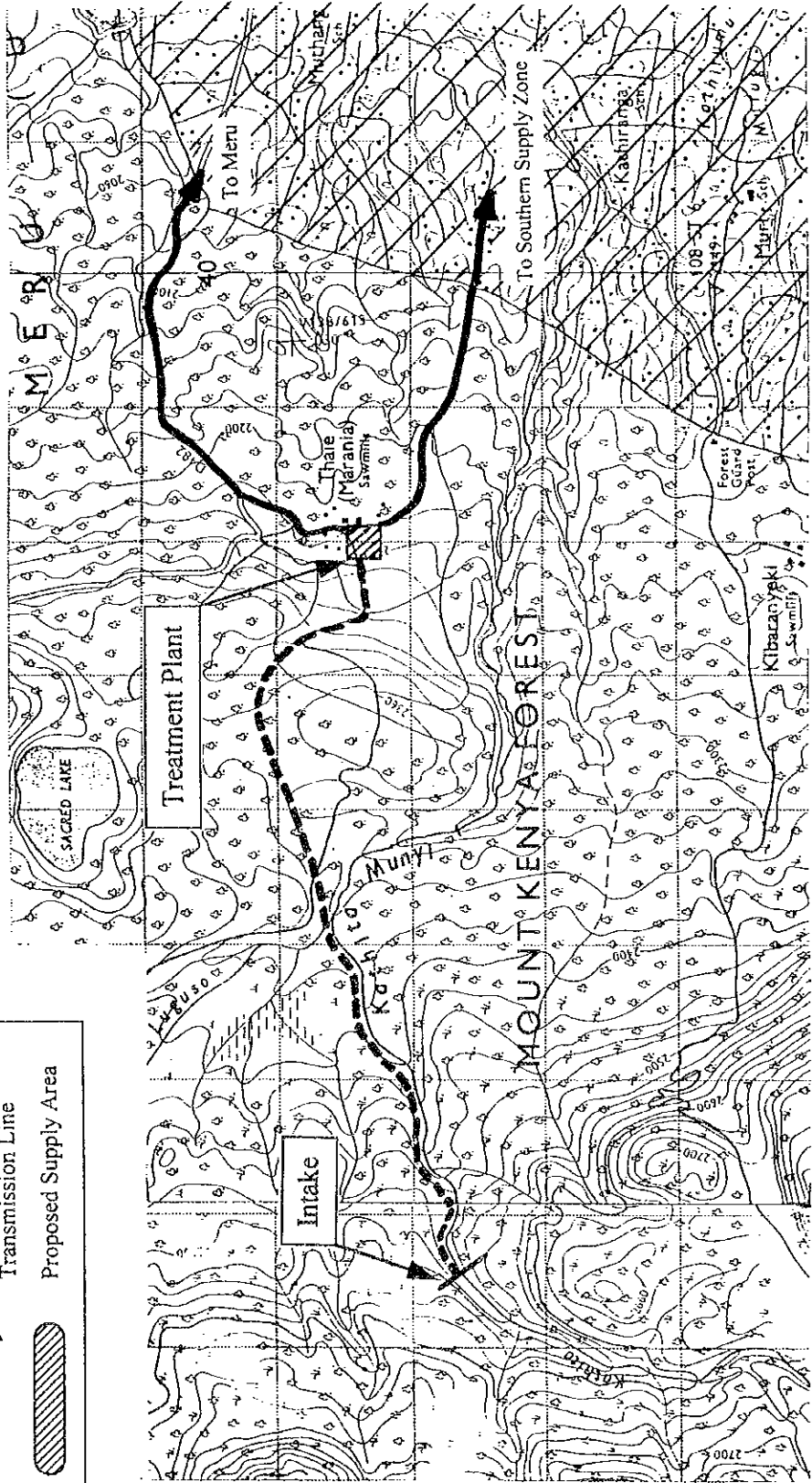
Figure 5.2-1
 Typical Intake Structure (Weir)



THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2-2

Raw Water Pipeline Profiles



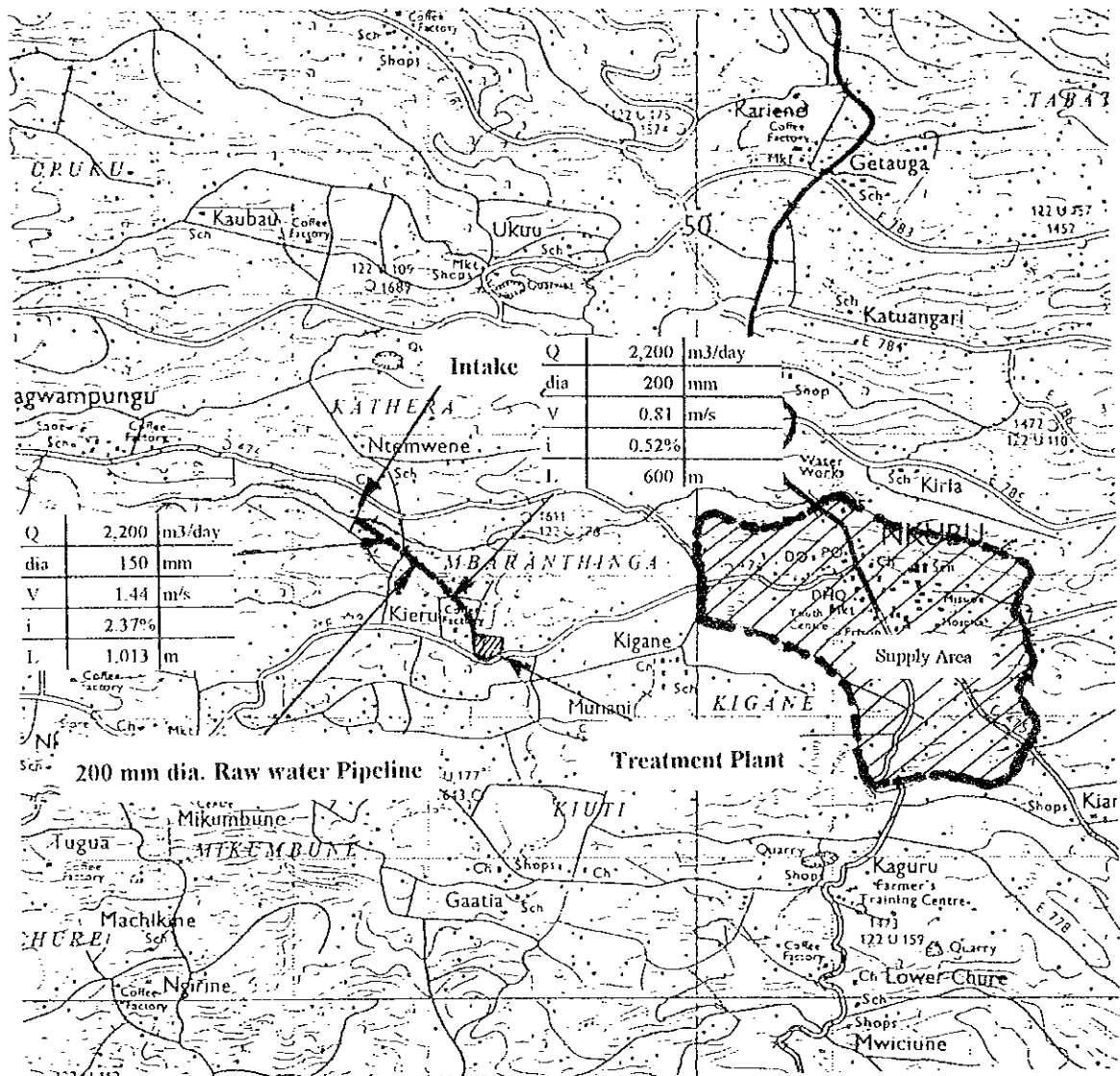
Scale 1:50,000

Legend

- Proposed Raw Water Transmission Line
- Proposed Treated Water Transmission Line
- Proposed Supply Area

THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2-3
 Meru Intake and Treatment
 Plant Location Plan






Q	2,200	m ³ /day
dia	200	mm
V	0.81	m/s
i	0.52%	
L	600	m

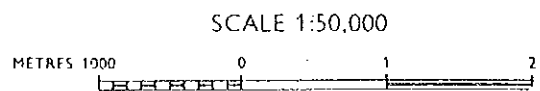
Q	2,200	m ³ /day
dia	150	mm
V	1.44	m/s
i	2.37%	
L	1,013	m

200 mm dia. Raw water Pipeline

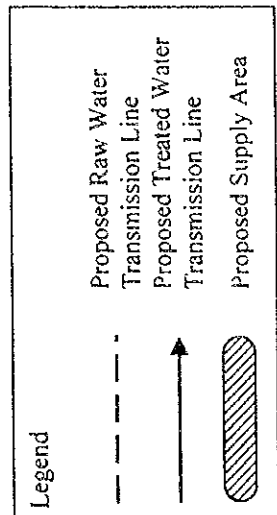
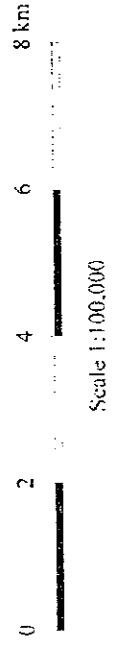
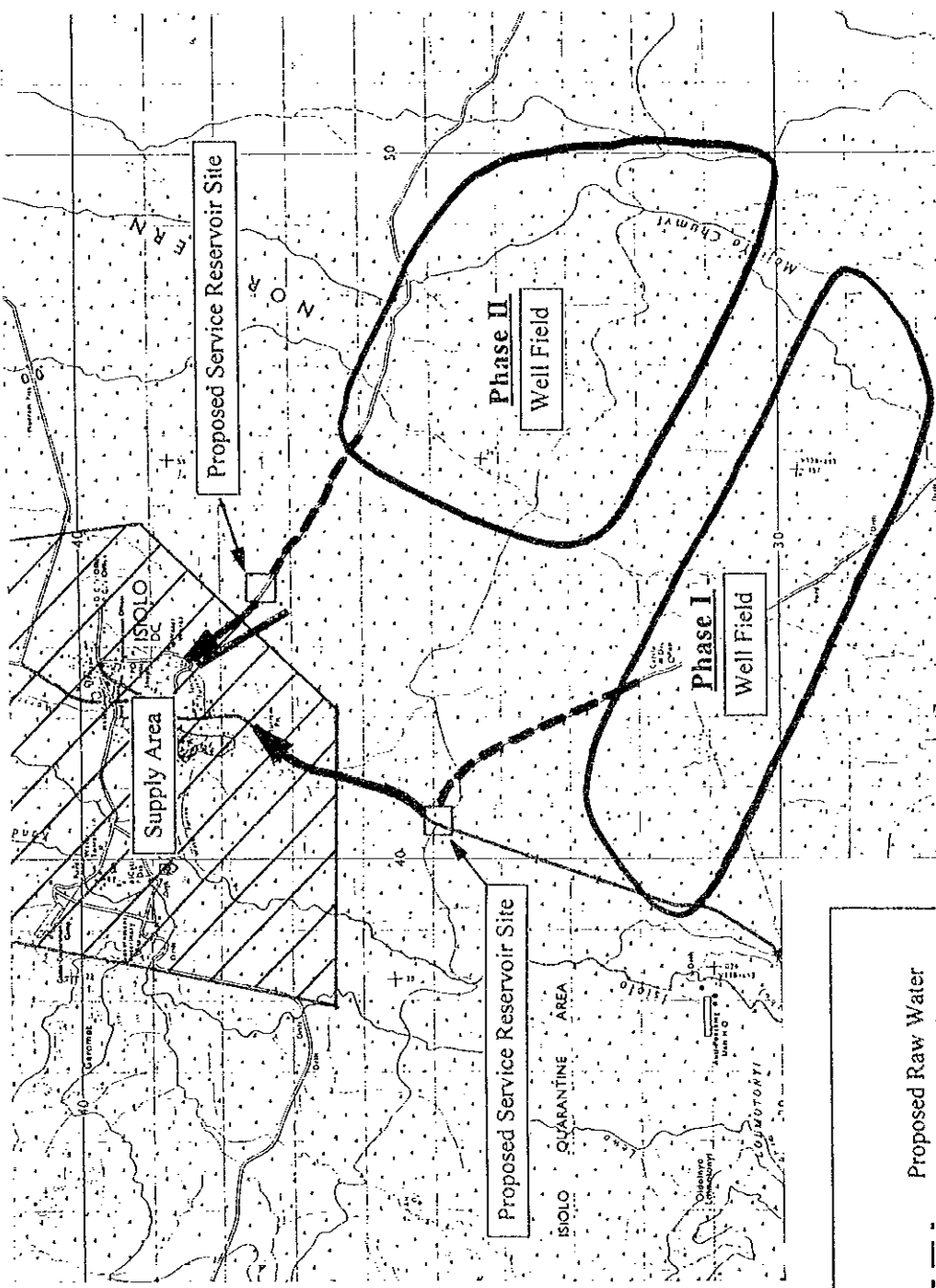
Treatment Plant

Legend

-  Proposed Raw Water Transmission Line
-  Proposed Treated Water Transmission Line
-  Proposed Supply Area

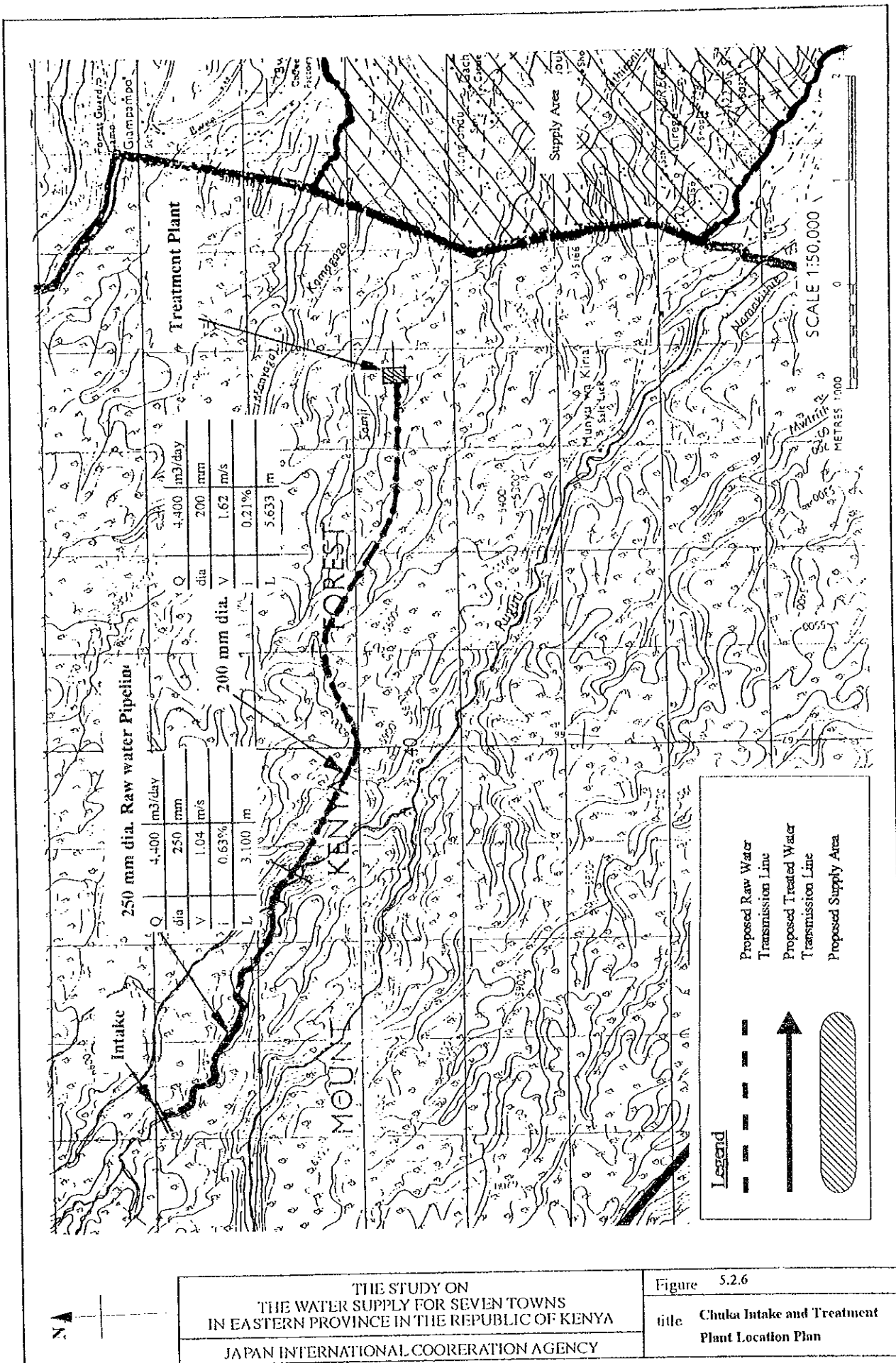


<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>Figure 5.2.4</p> <p>title Nkulu Intake and Treatment Plant Location Plan</p>
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THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2-5
 Isilolo Intake and Treatment
 Plant Location Plan



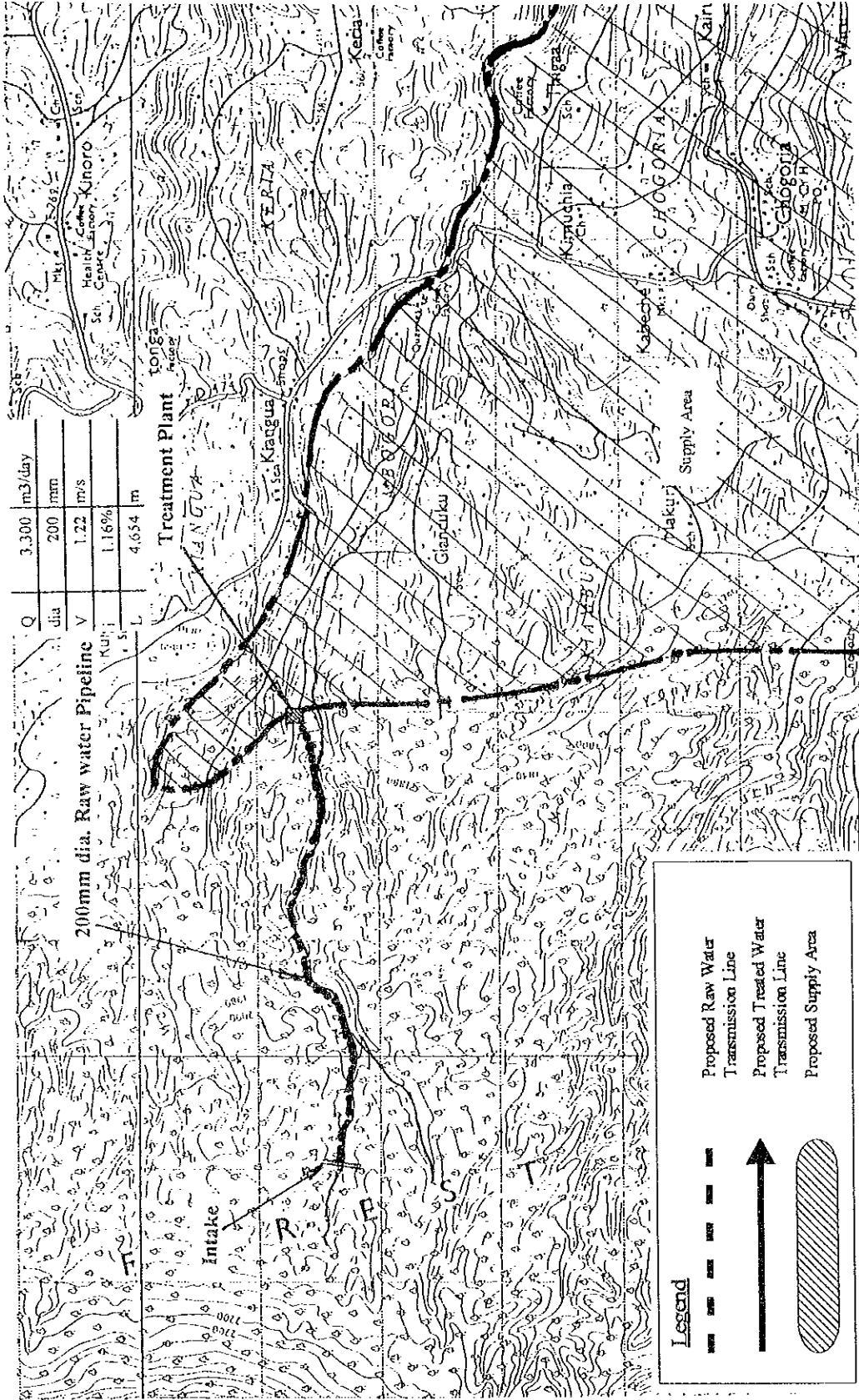
250 mm dia. Raw water Pipeline

Q	4,400 m ³ /day
dia	250 mm
V	1.04 m/s
L	0.63%
L	3,100 m

Q	4,400 m ³ /day
dia	200 mm
V	1.62 m/s
L	0.21%
L	5,633 m

THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
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Figure 5.2.6
title Chuka Intake and Treatment
Plant Location Plan



Q	3.300	m ³ /day
dia	200	mm
V	1.22	m/s
Kup	1.16%	
L	4,634	m

200mm dia. Raw water Pipeline

Treatment Plant

Legend

- Proposed Raw Water Transmission Line
- Proposed Treated Water Transmission Line
- Proposed Supply Area

SCALE 1:50,000



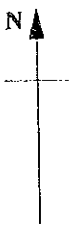
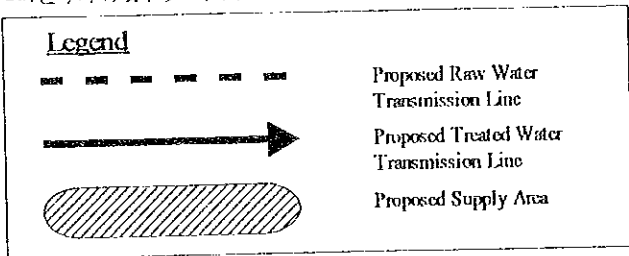
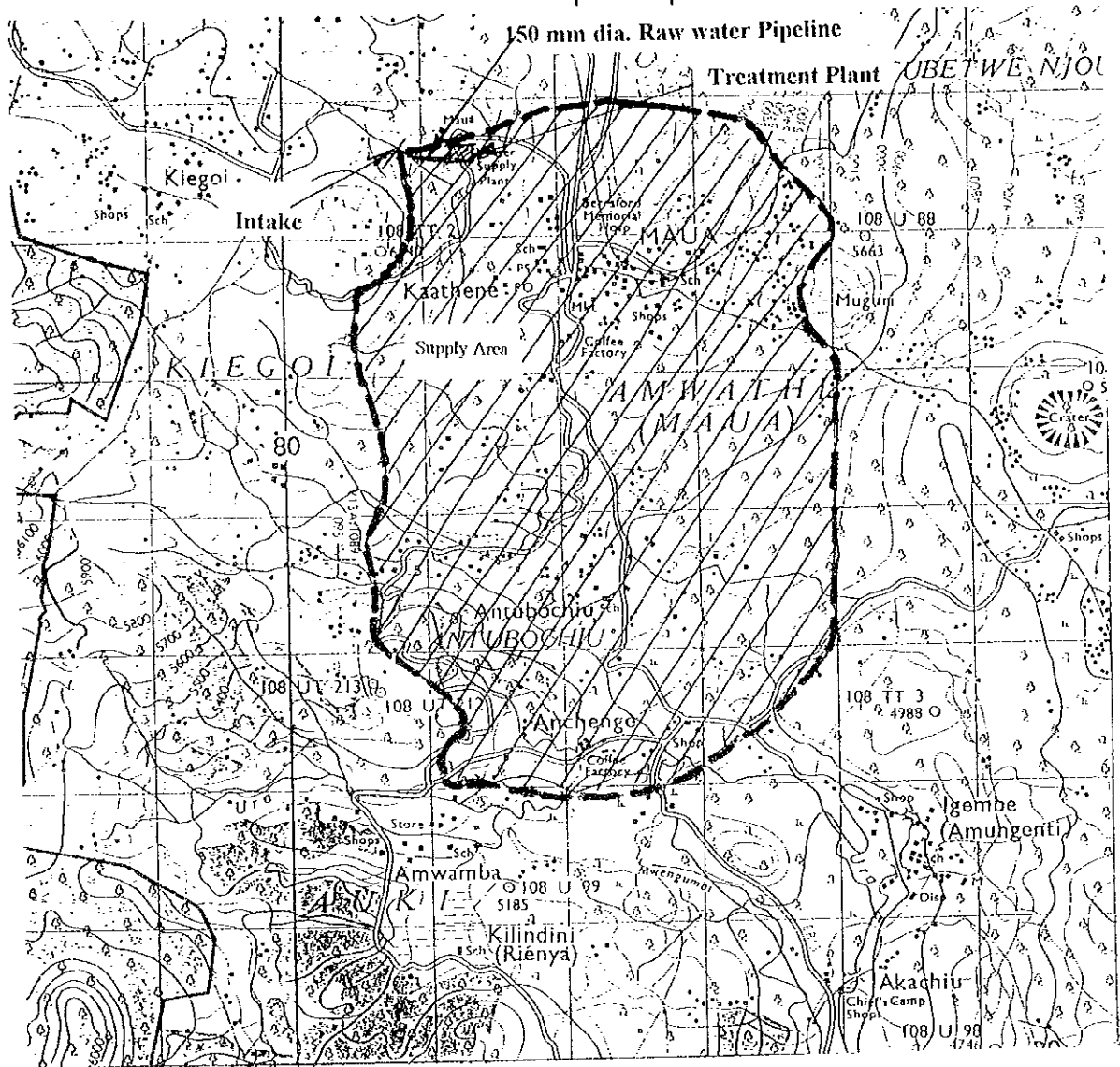
THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA

Figure 5.2.7

title Chogoria Intake and Treatment Plant Location Plan

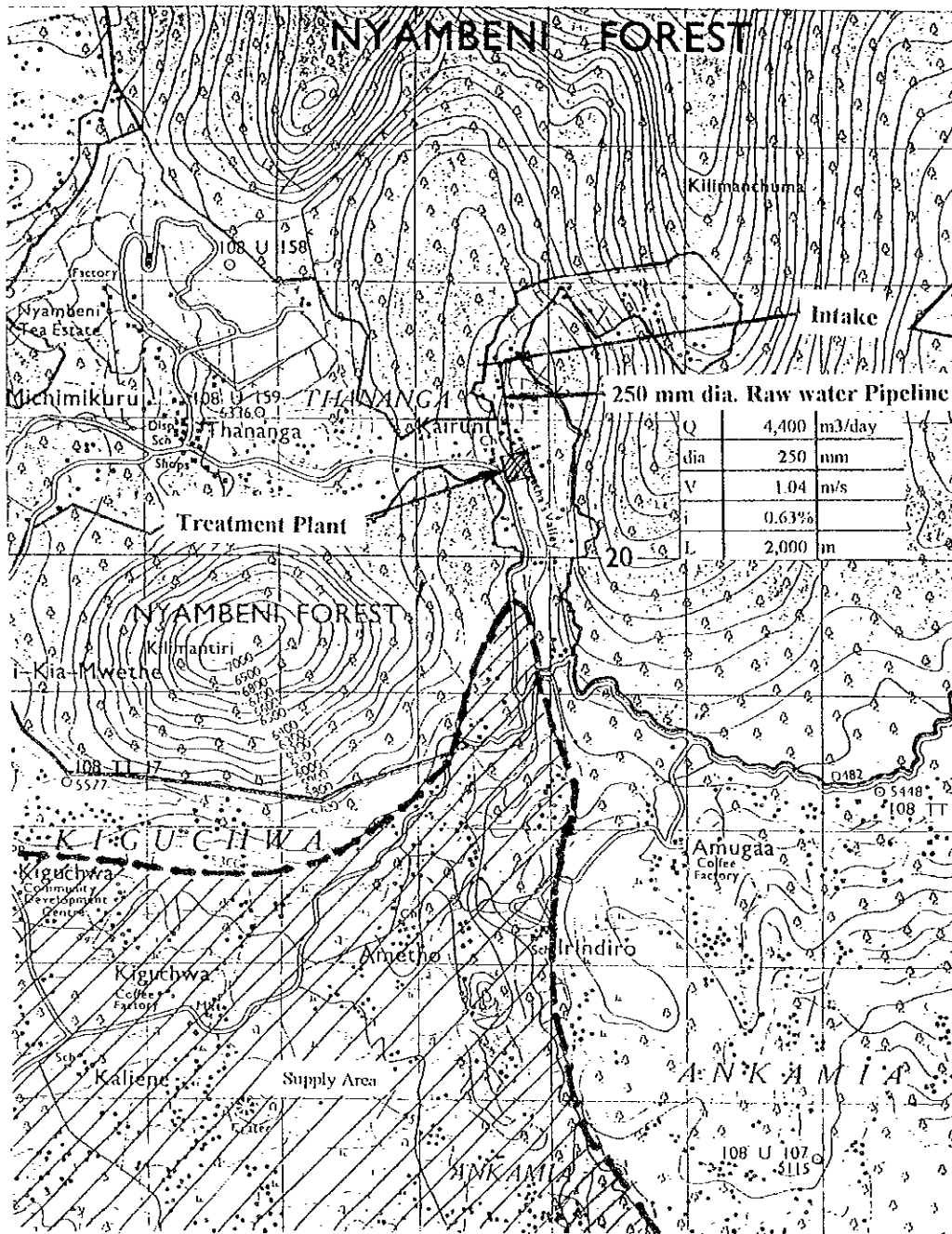
JAPAN INTERNATIONAL COOPERATION AGENCY

Q	1,650	m ³ /day
dia	150	mm
V	1.08	m/s
i	1.34%	
L	400	m






SCALE 1:50,000

<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA</p>	<p>Figure 5.2.8</p>
<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>title Maua Intake and Treatment Plant Location Plan</p>



Q	4,400	m ³ /day
dia	250	mm
V	1.04	m/s
i	0.63%	
L	2,000	m

Legend

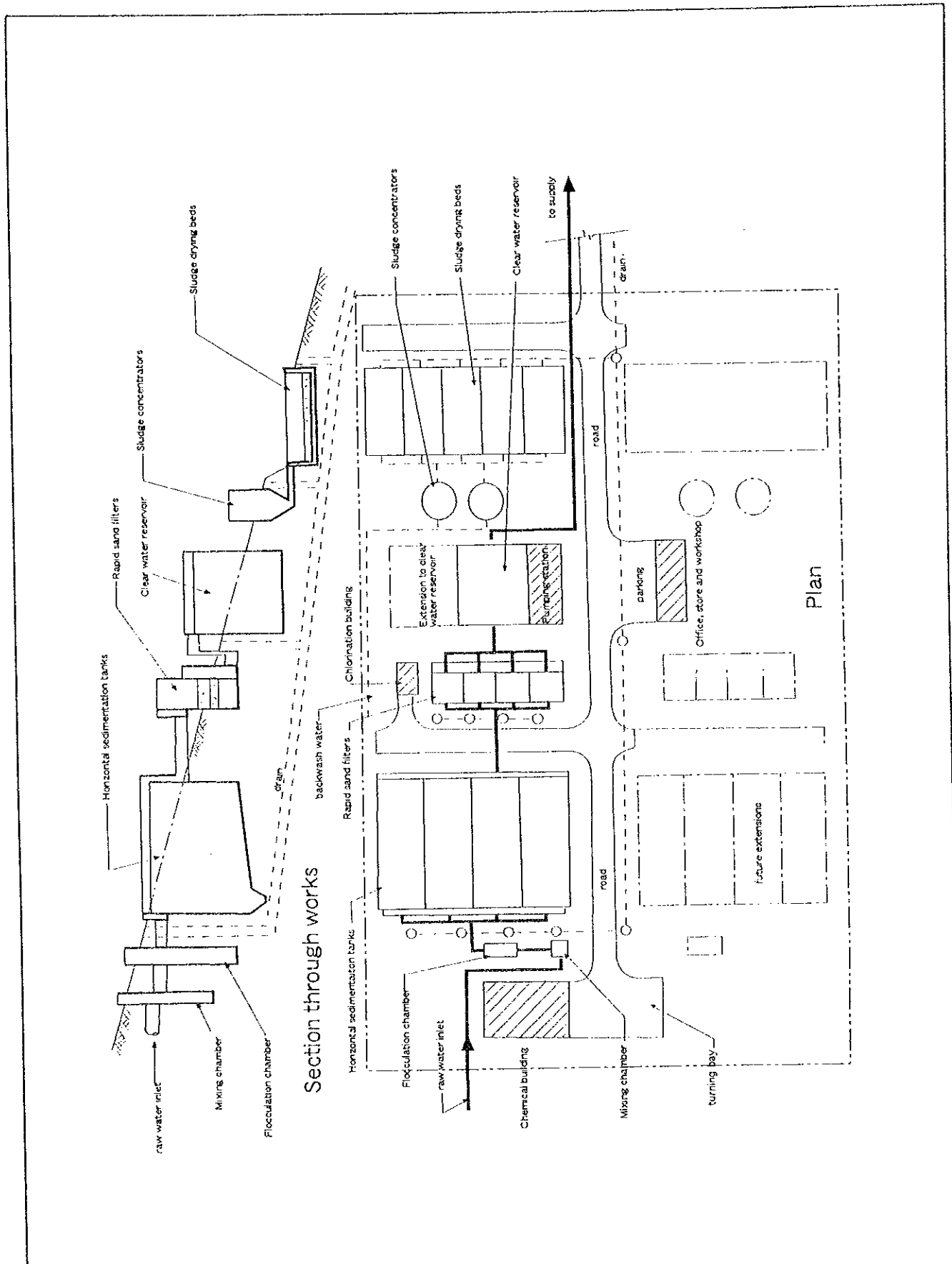
-  Proposed Raw Water Transmission Line
-  Proposed Treated Water Transmission Line
-  Proposed Supply Area



SCALE 1:50,000

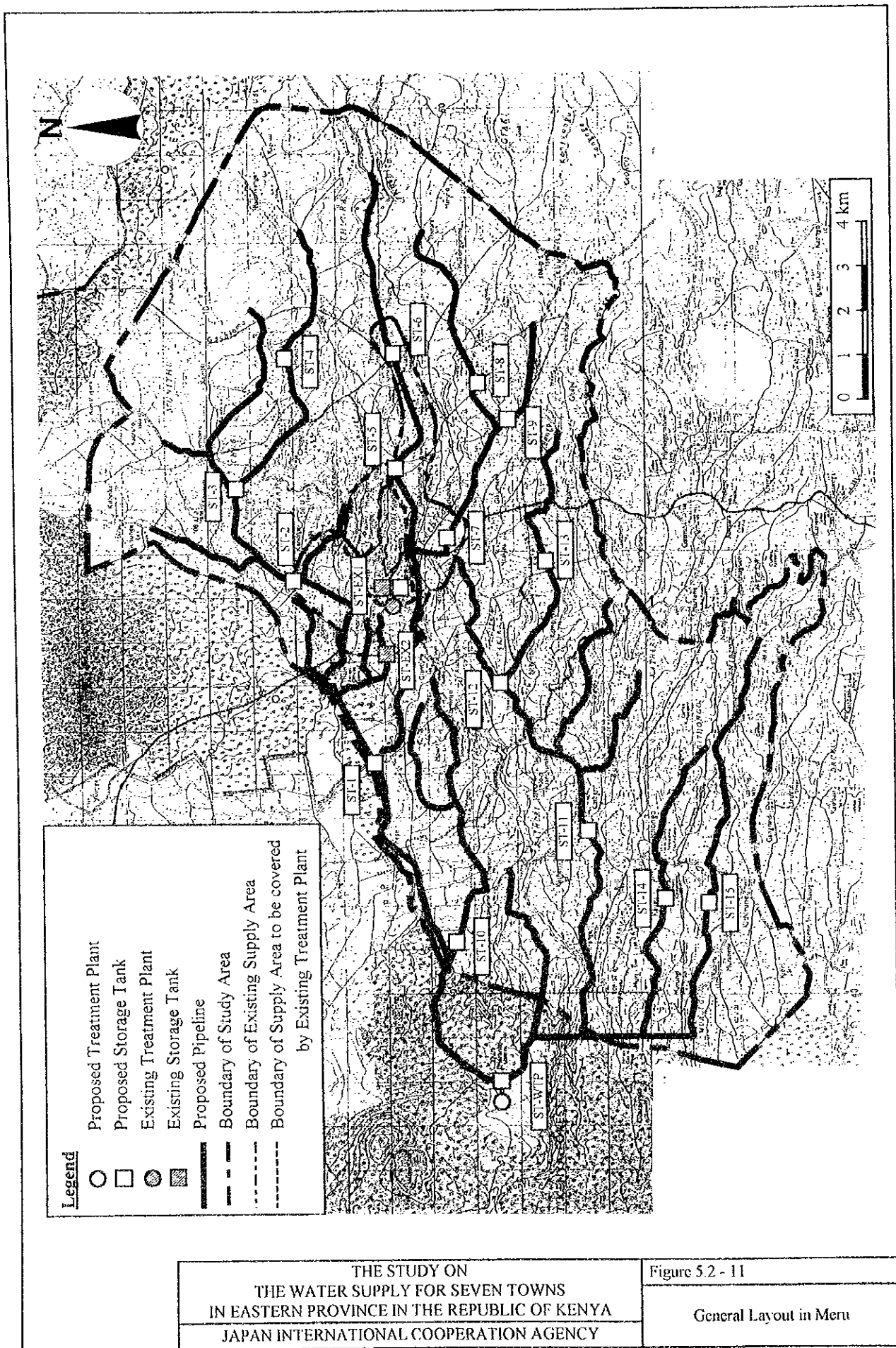
THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2.9
title Tigania Intake and 1 treatment
Plant Location Plan



THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

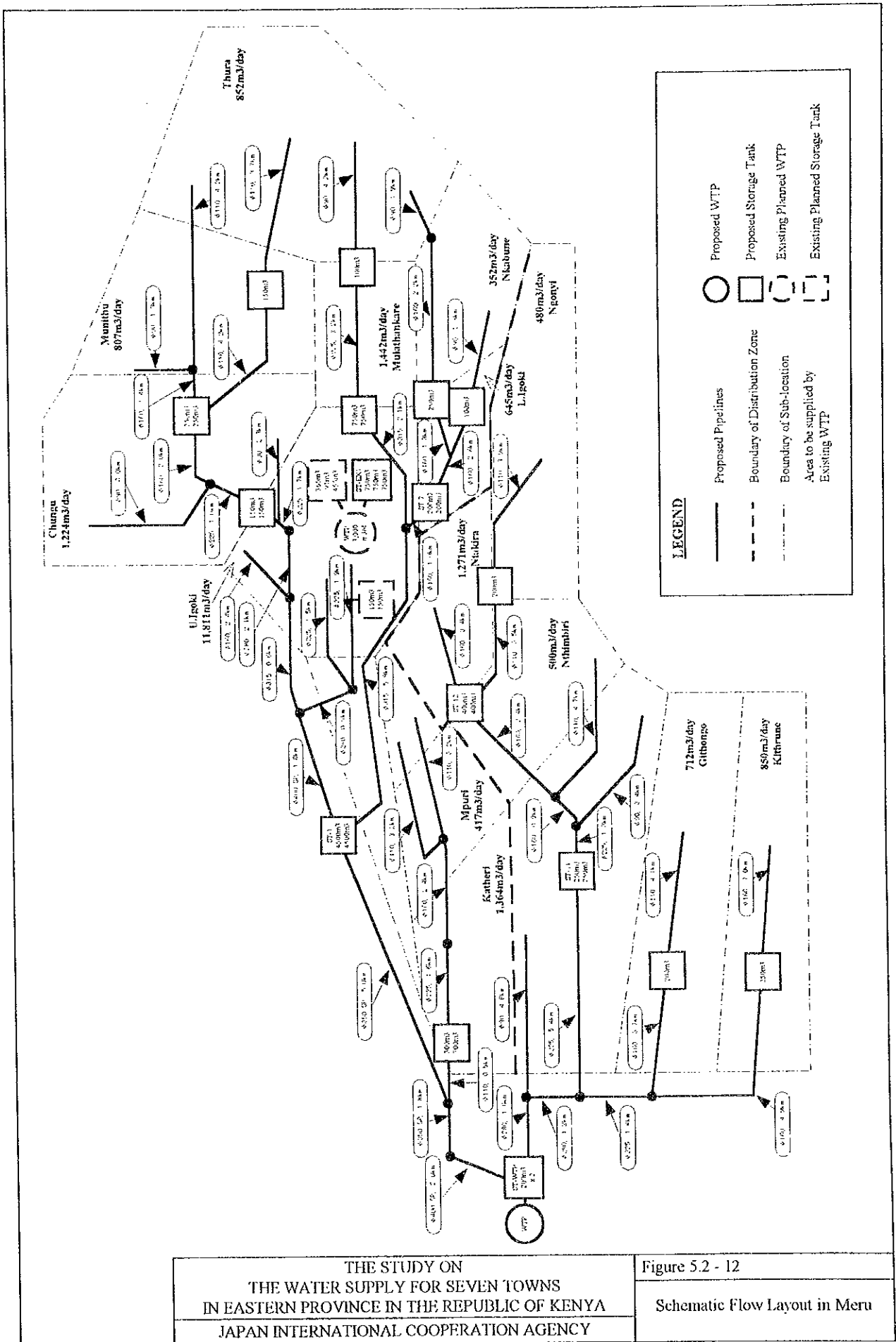
Figure 5.2-10
 Sample Treatment
 Plant Layout

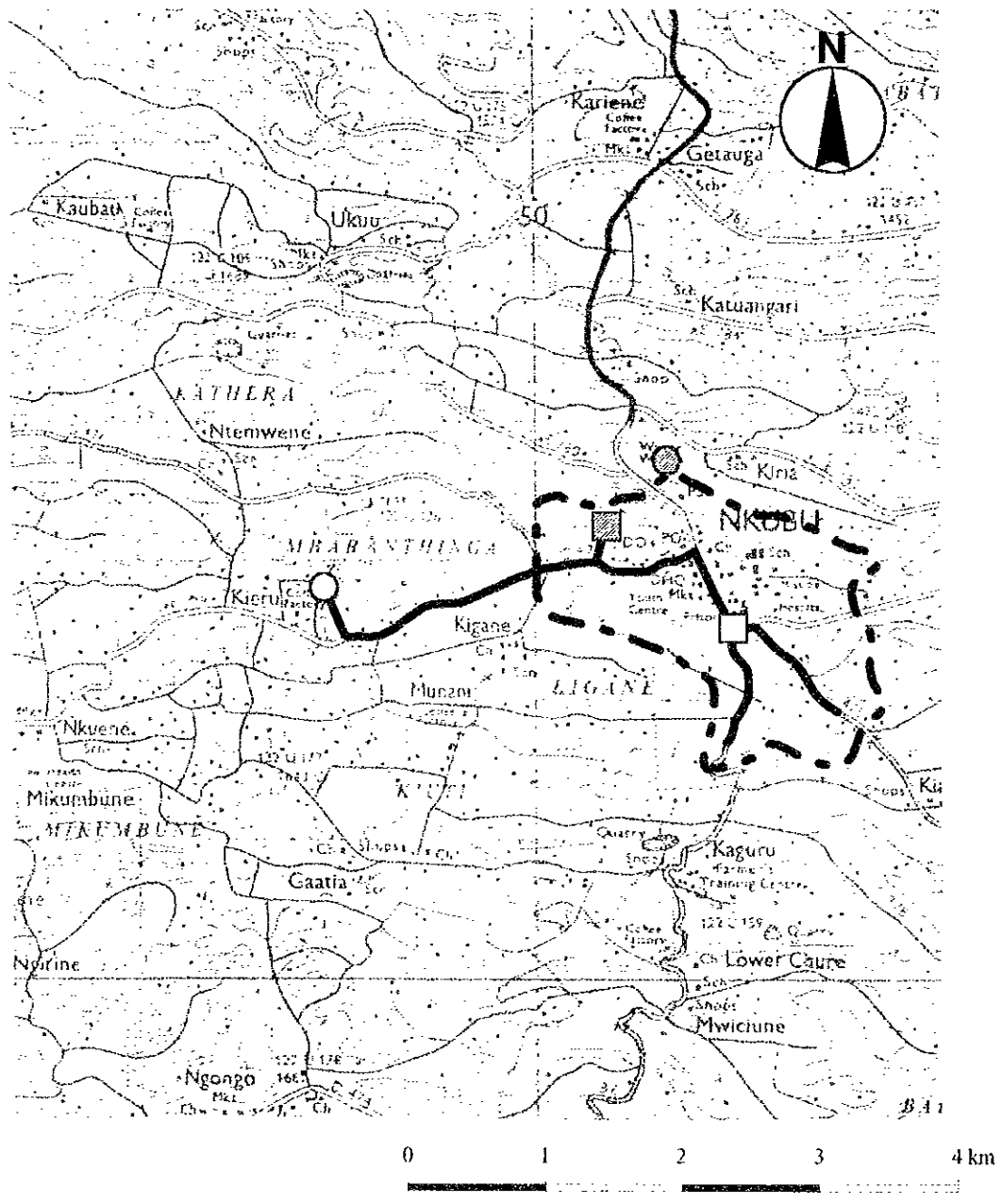


THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2 - 11

General Layout in Meru

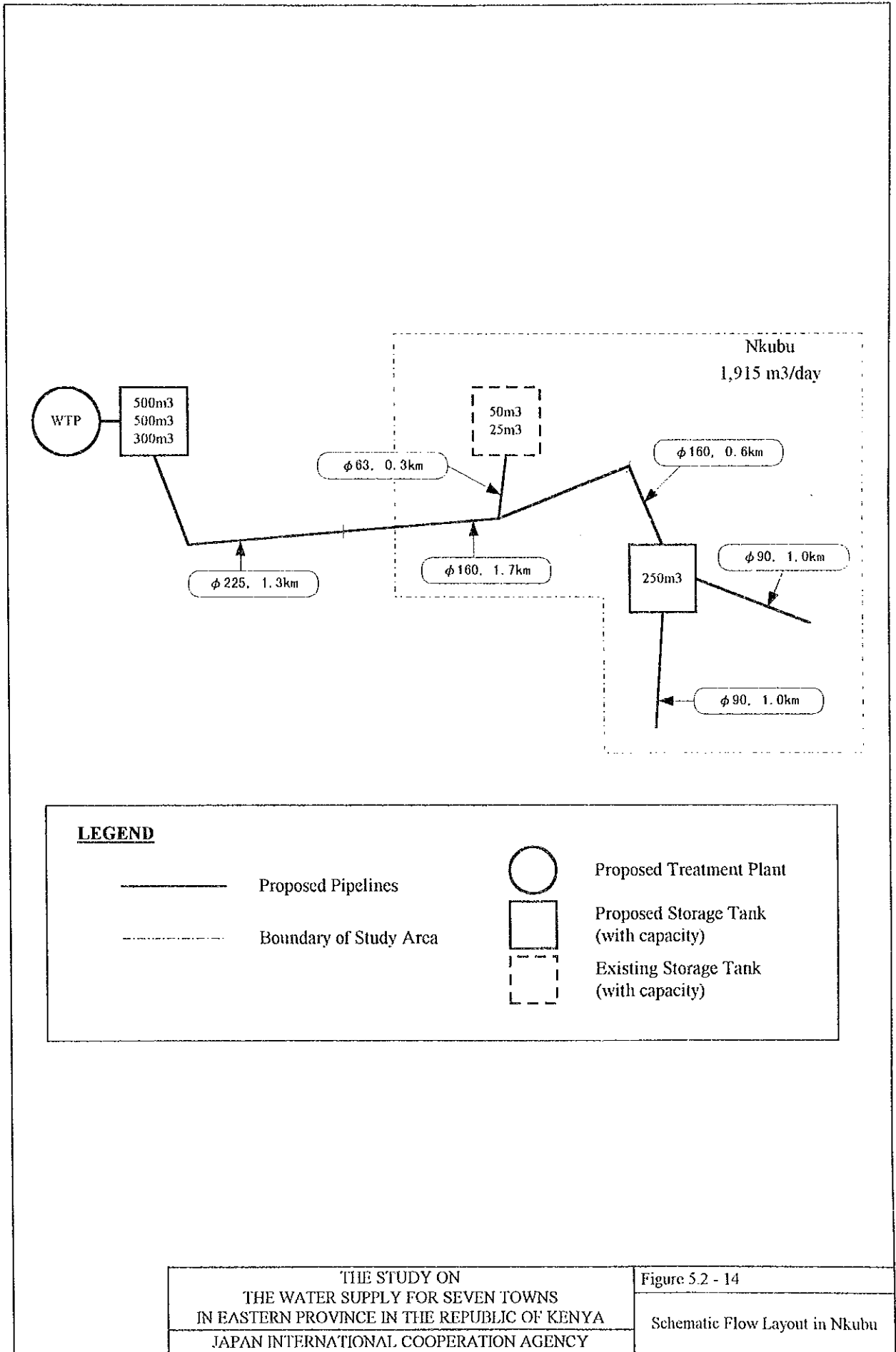


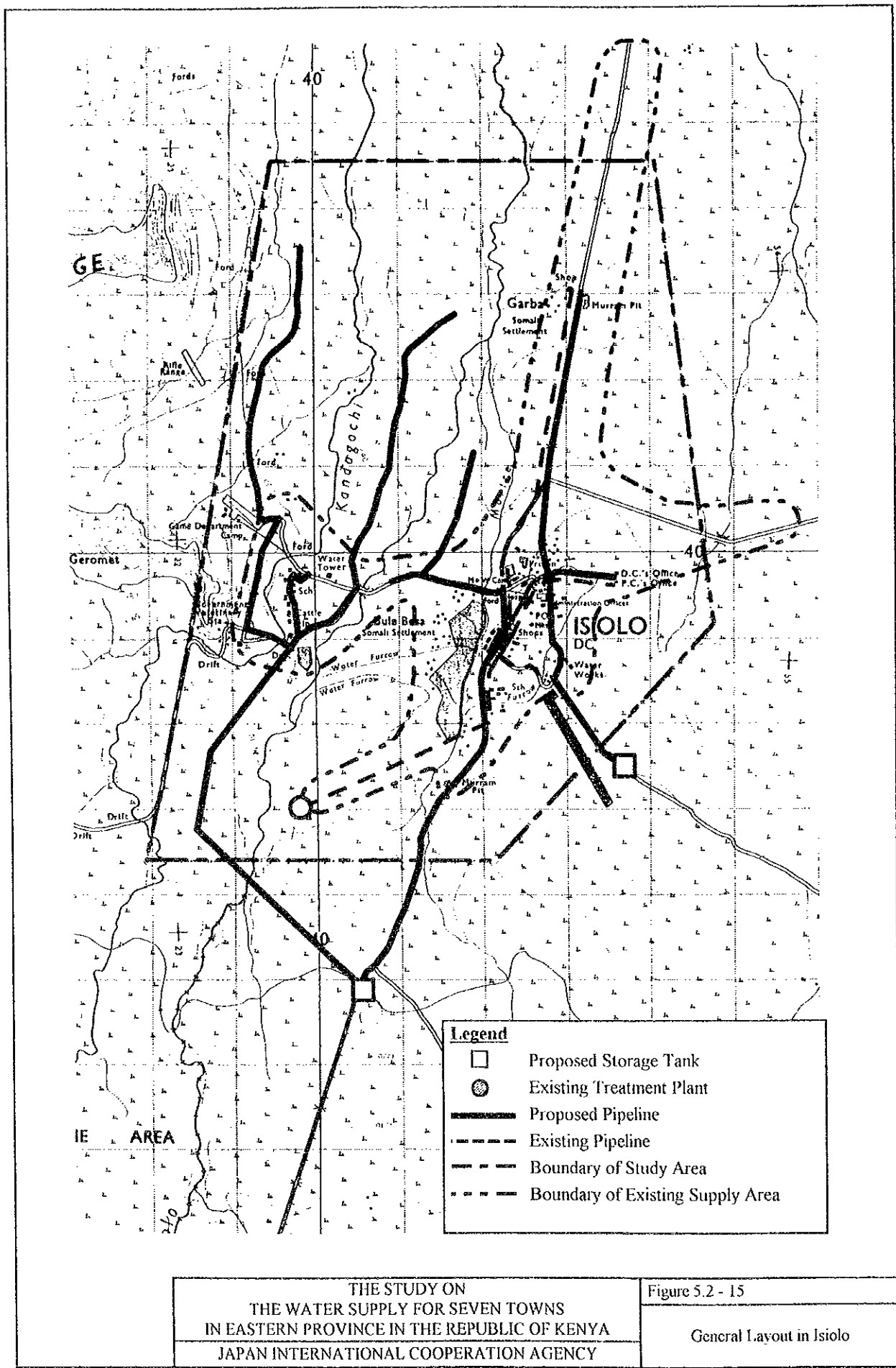


Legend	
	Proposed Treatment Plant
	Proposed Storage Tank
	Existing Treatment Plant
	Existing Storage Tank
	Proposed Pipeline
	Boundary of Study Area

Scale 1:50,000

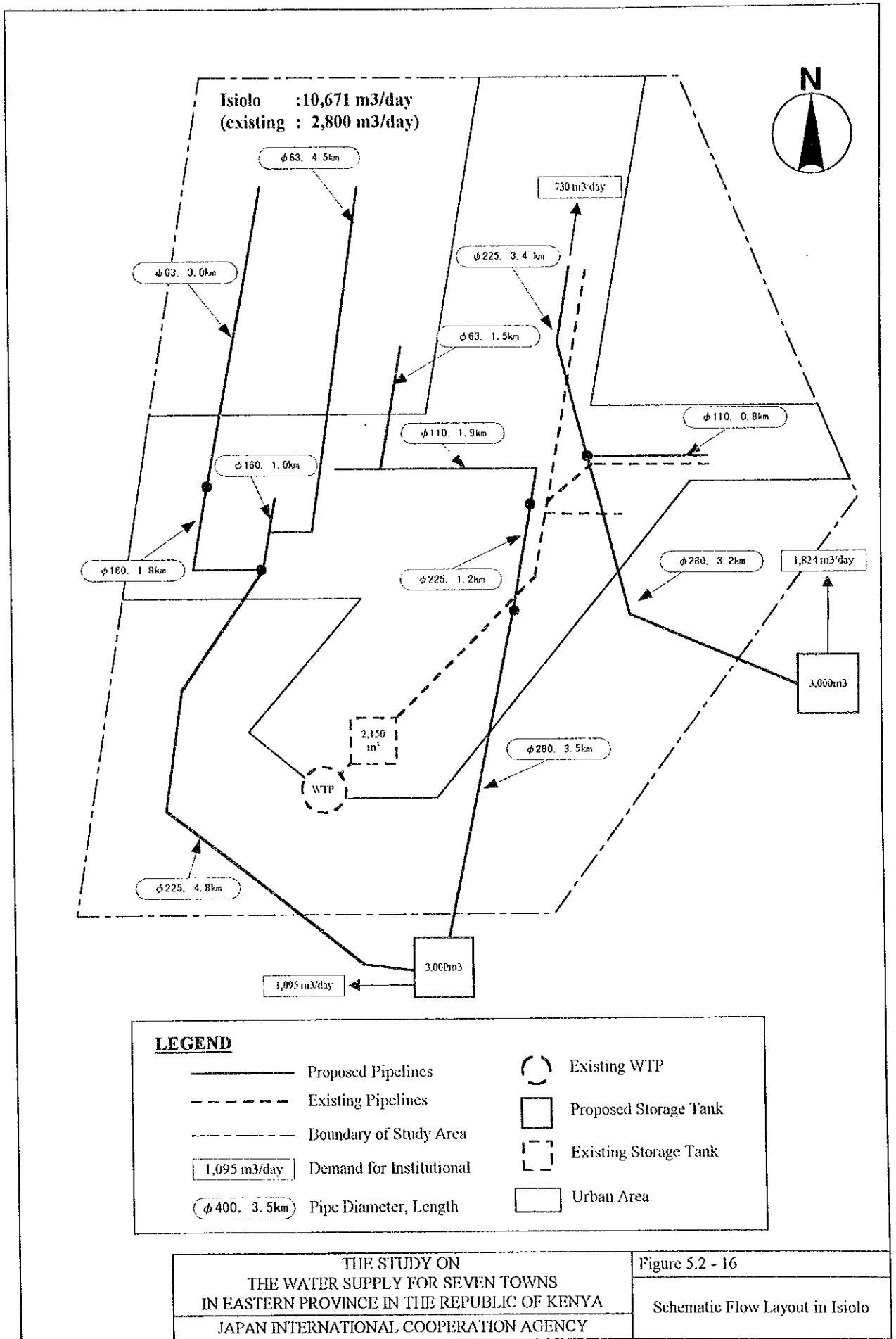
<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>Figure 5.2 - 13 General Layout in Nkubu</p>
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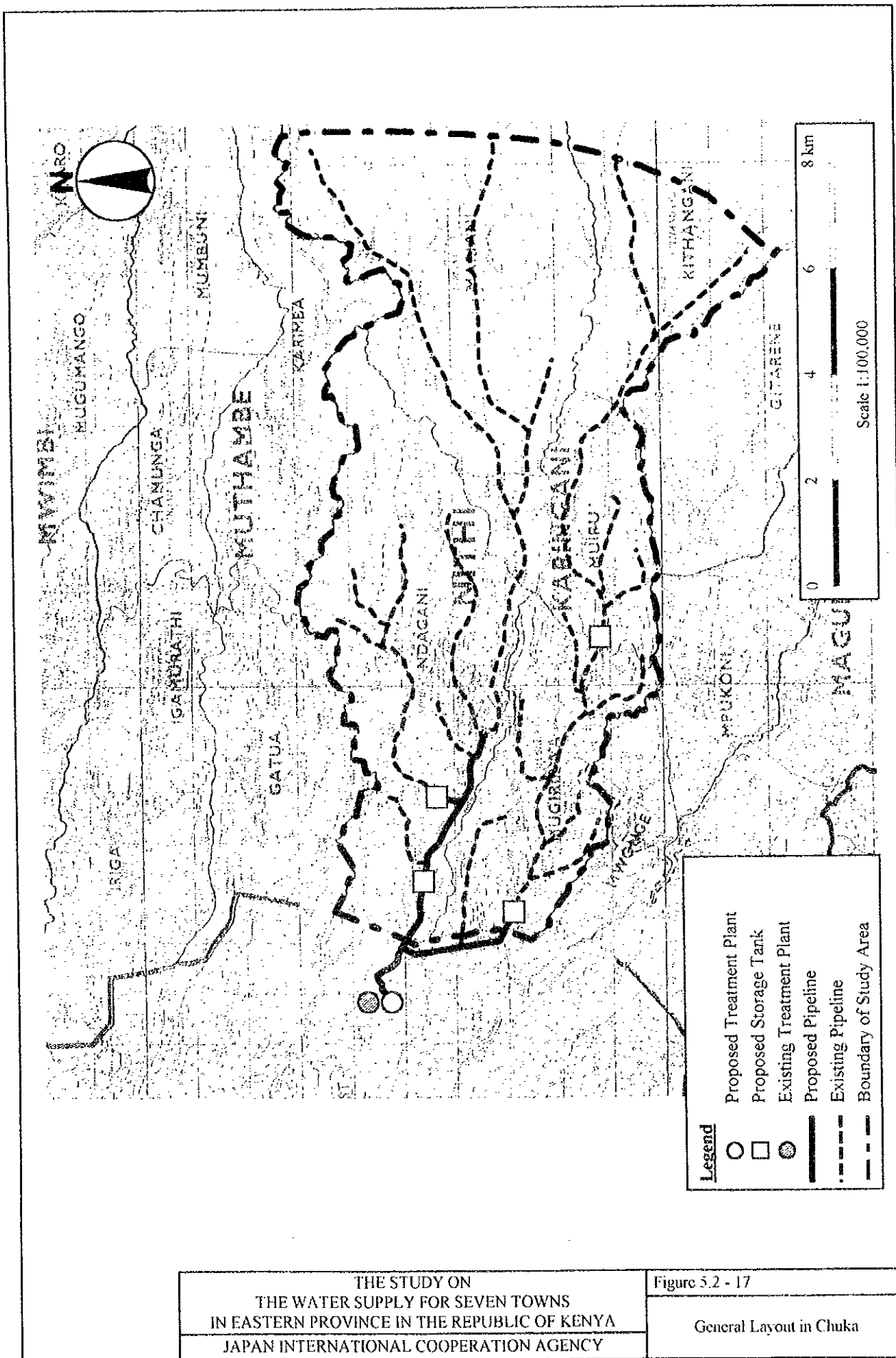




THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

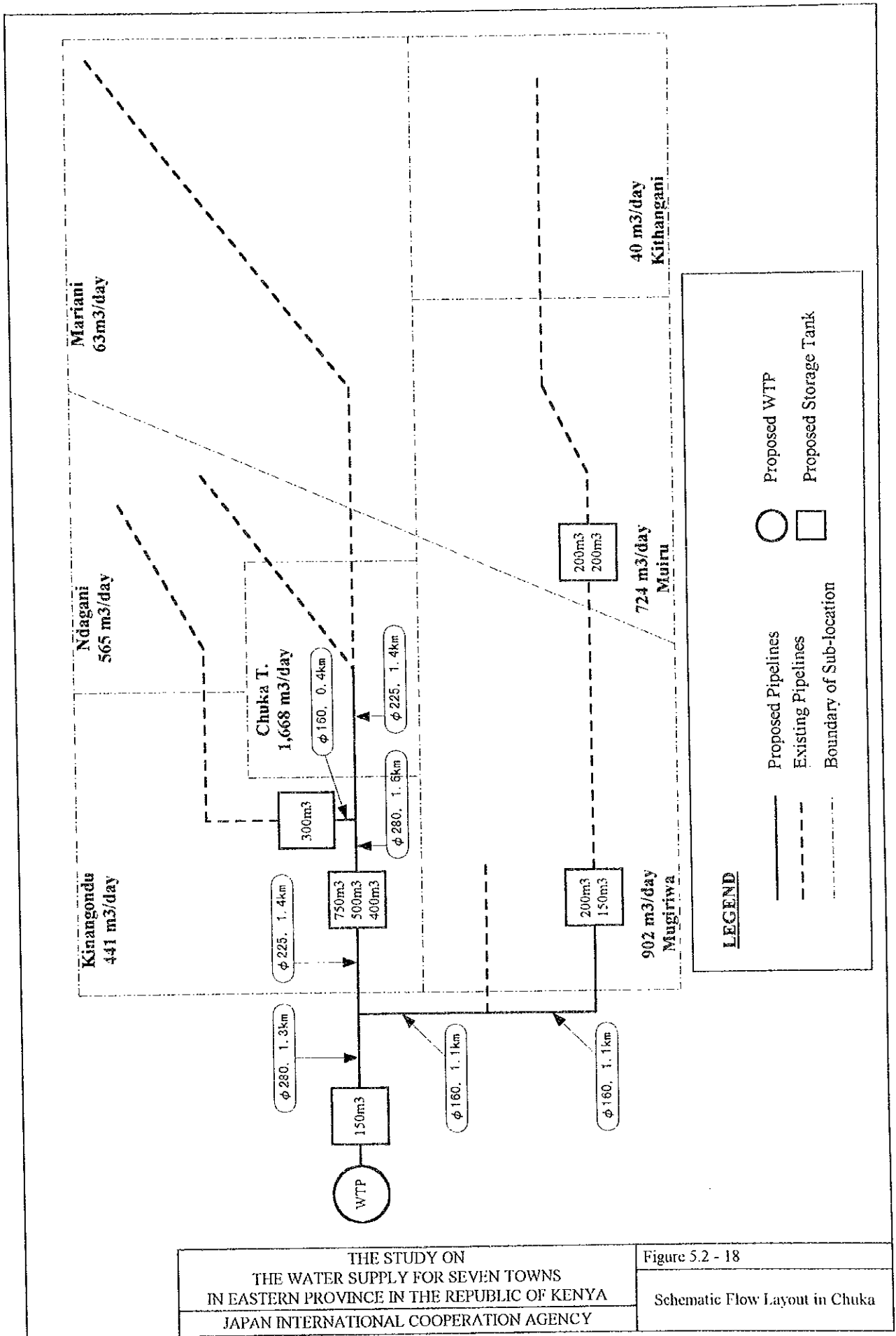
Figure 5.2 - 15
 General Layout in Isiolo

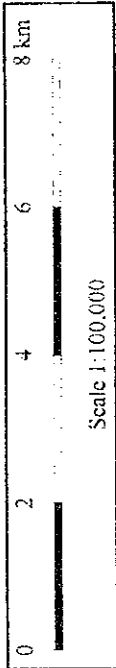
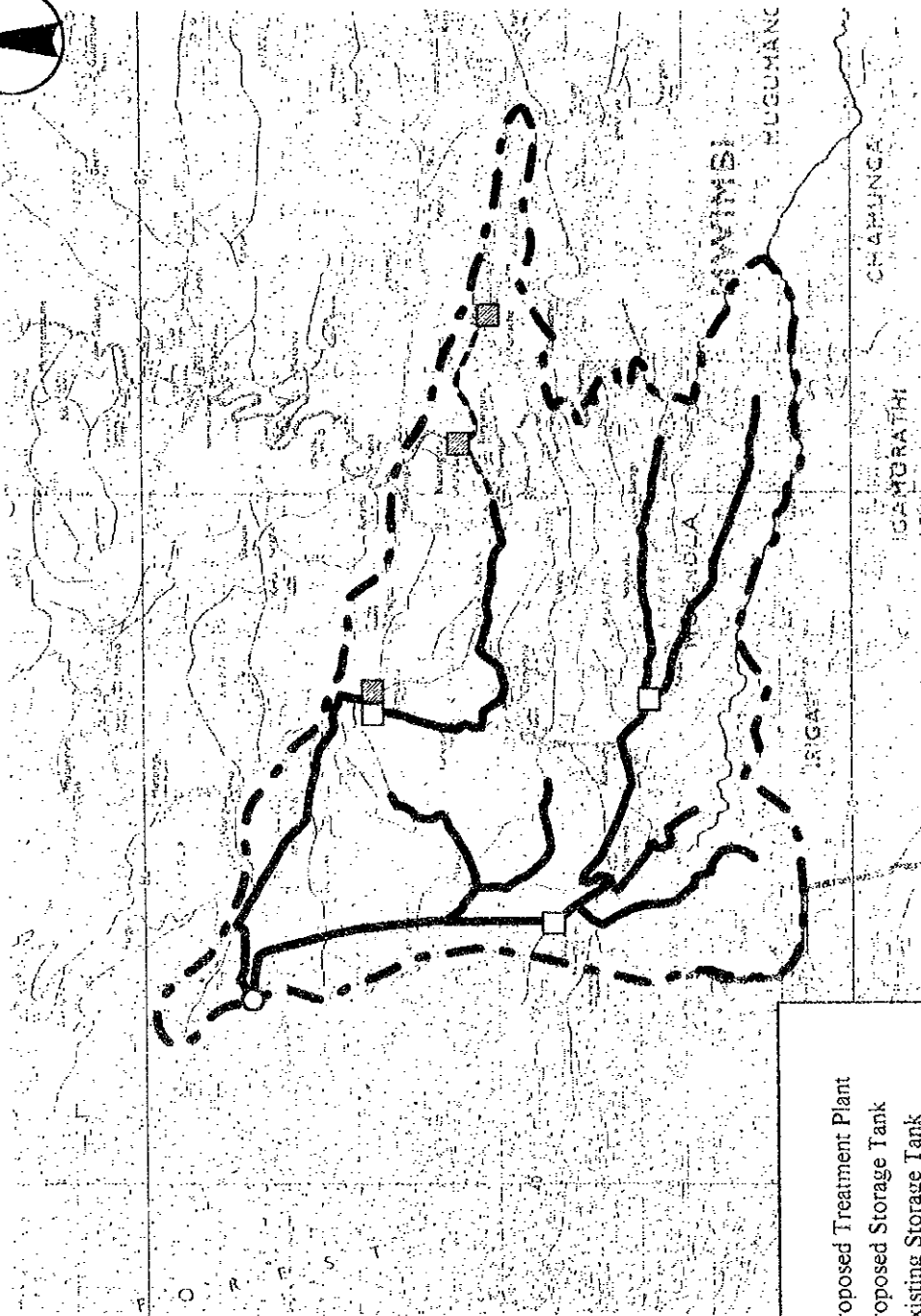




THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2 - 17
General Layout in Chuka



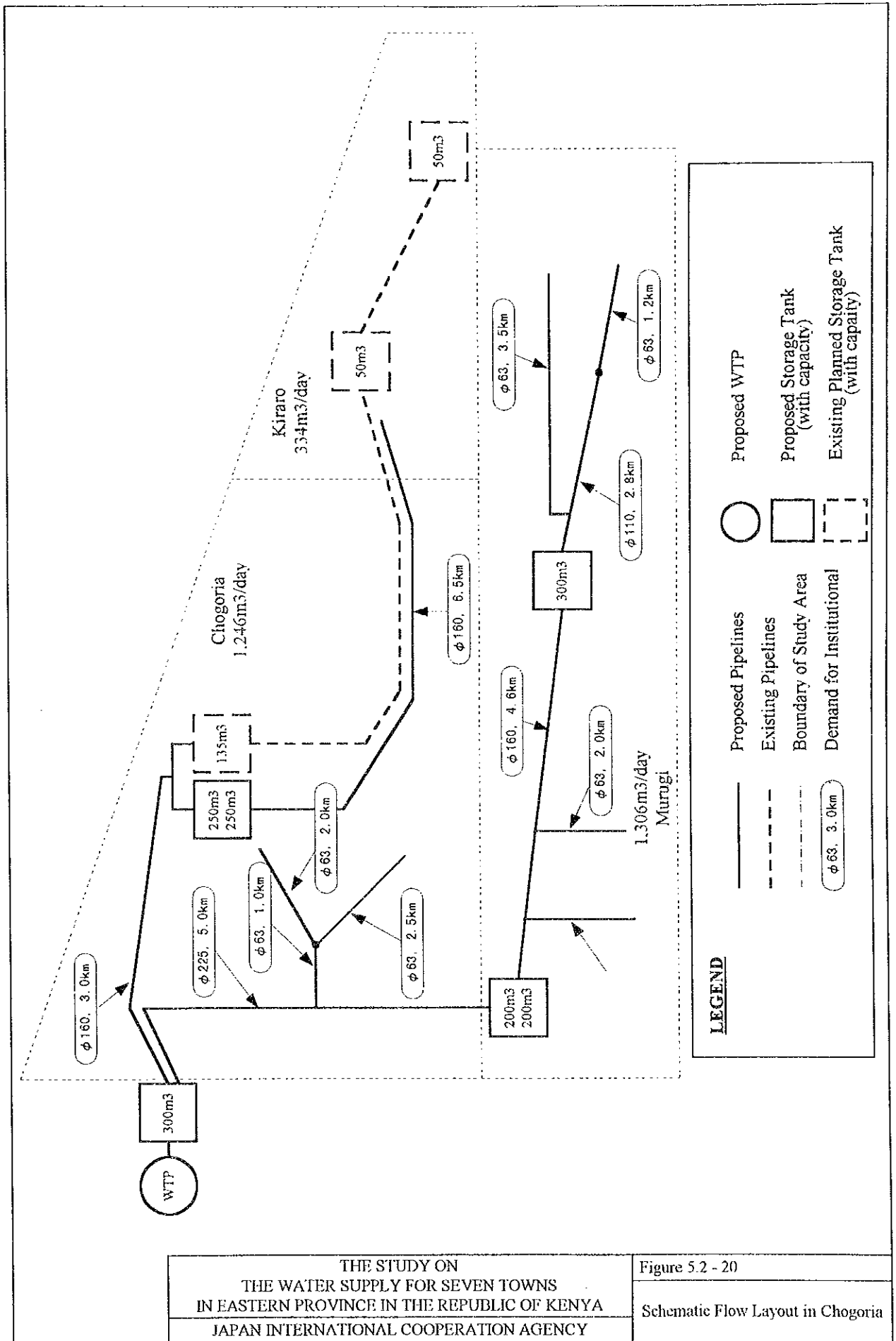


Legend

- Proposed Treatment Plant
- Proposed Storage Tank
- ▣ Existing Storage Tank
- Proposed Pipeline
- ⋯ Existing Pipeline
- - - Boundary of Study Area

THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

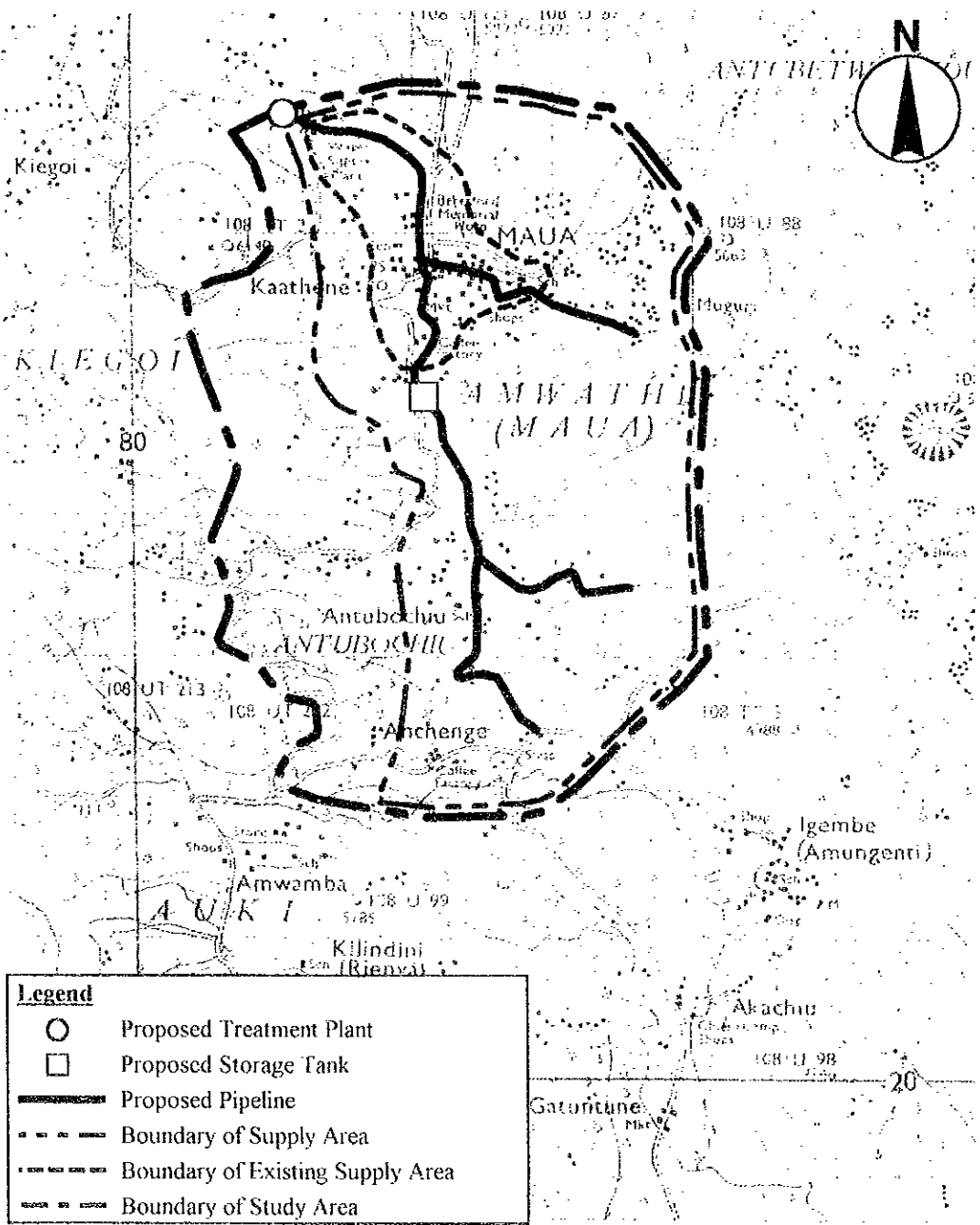
Figure 5.2 - 19
 General Layout in Chogoria



THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

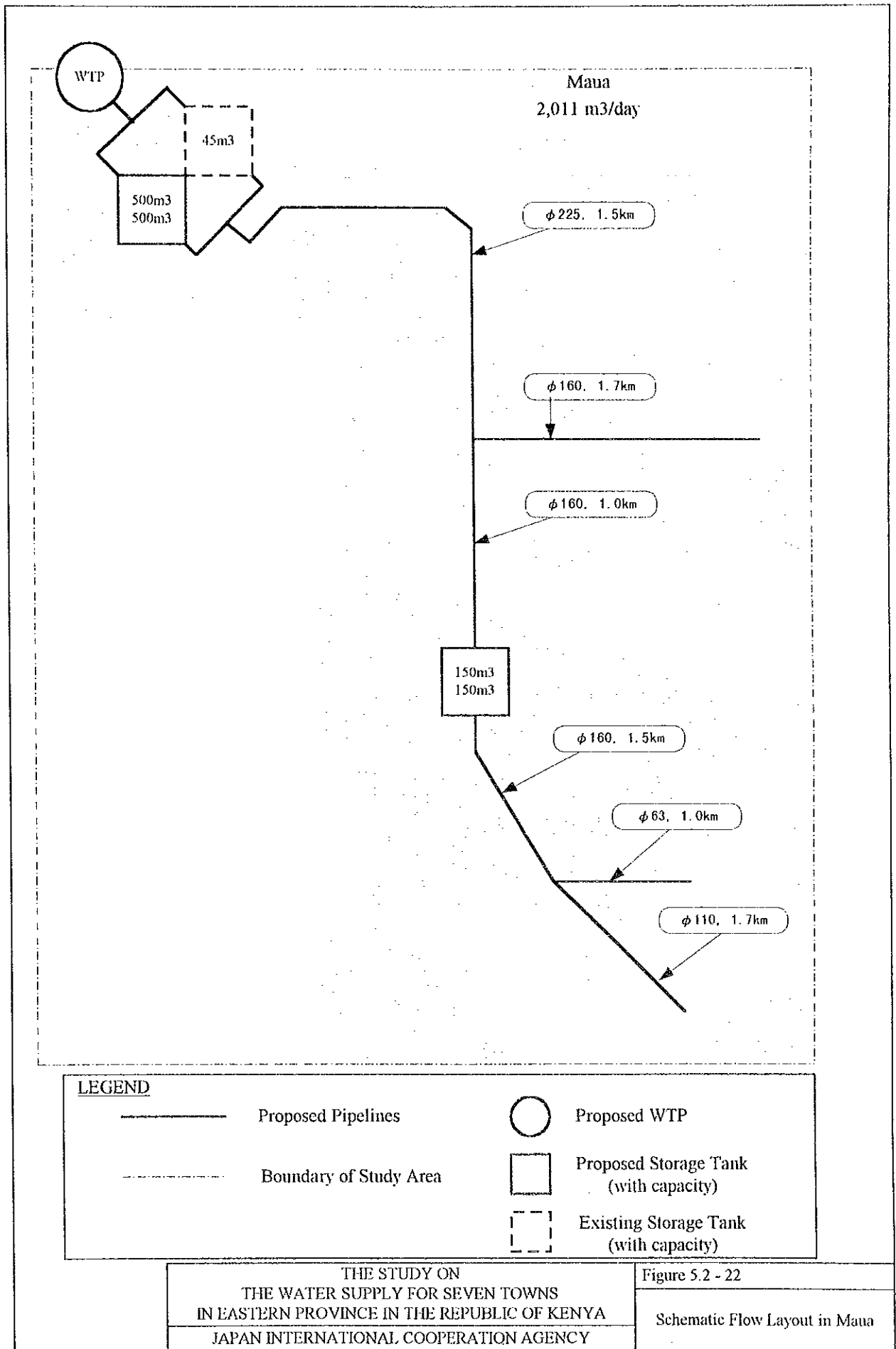
Figure 5.2 - 20

Schematic Flow Layout in Chogoria



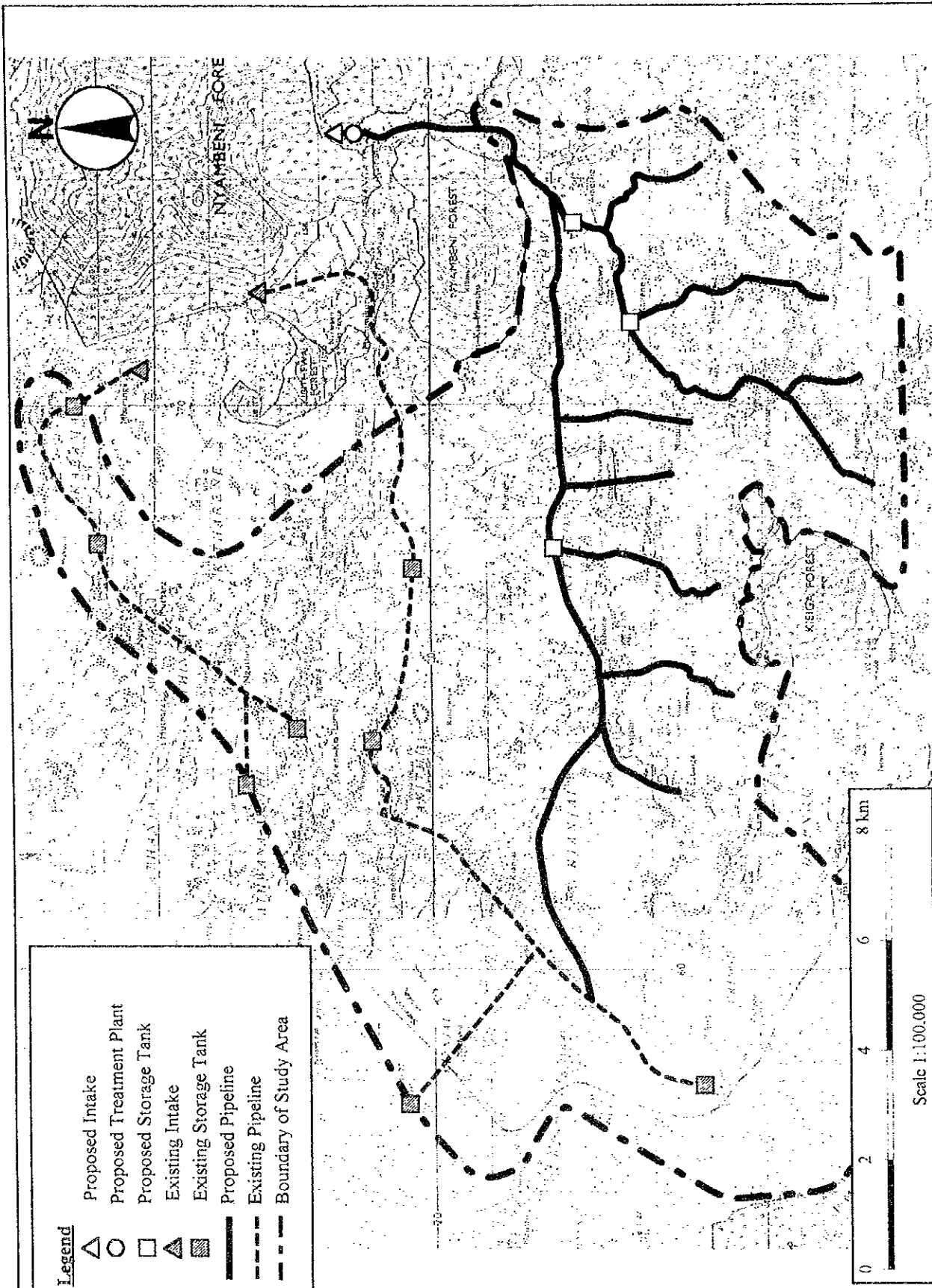
THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2 - 21
 General Layout in Maua



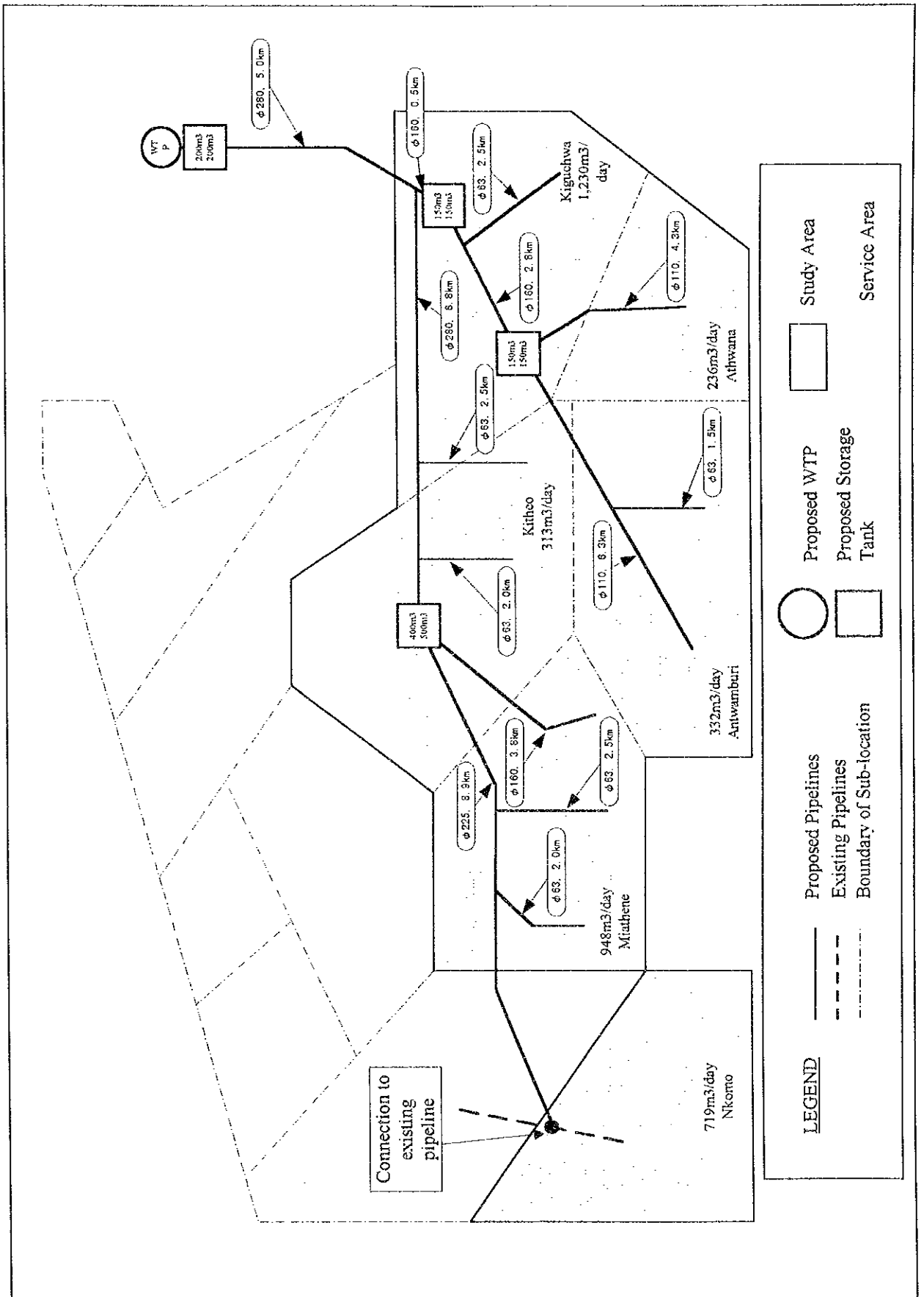
THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
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Figure 5.2 - 22
Schematic Flow Layout in Maua



**THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA**
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2 - 23
 General Layout in Tigania



THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2 - 24
 Schematic Flow Layout in Tigania

Work Schedule for Meter Installation and Leakage Control (Tentative)

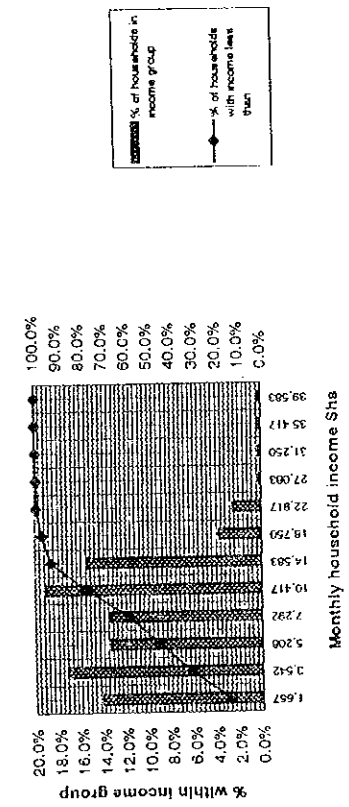
Works	1997	1998	1999	2000	2001	2002	2003	Remarks
I. Meter Installation and Replacement								
1. Preparatory Work								
1.1 Administrative procedures								
1.2 Public relation campaign								
1.3 Customer registration								
1.4 Financial and organizational set up								
1.5 Zoning			First	Second				One-year cycle
2. Field Works								
2.1 Customer surveys								ditto
2.2 Quantification								ditto
2.3 Mobilization								ditto
2.4 Dialogue to households								ditto
2.5 Meter installation								ditto
2.6 Registration								ditto
3. Routine Work								
3.1 Mobilization of meter readers & bill collectors								
3.2 Meter reading, billing and bill collection								
II. Leakage Control								
I. First Step			First					to be continued
1.1 Inventory survey on pipe network								
1.2 Establish district metering zones								
1.3 Installation of district and bulk meters								
1.4 Flow rate measurement								
1.5 Analysis for priority areas								
2. Second Step								to be continued
2.1 Mobilization of staff through training								
2.2 Financial and organizational set up								
2.3 Procure equipment and materials								
2.4 Leakage detection and repair								
2.5 Data compilation and update maps								

Source: JICA Study Team

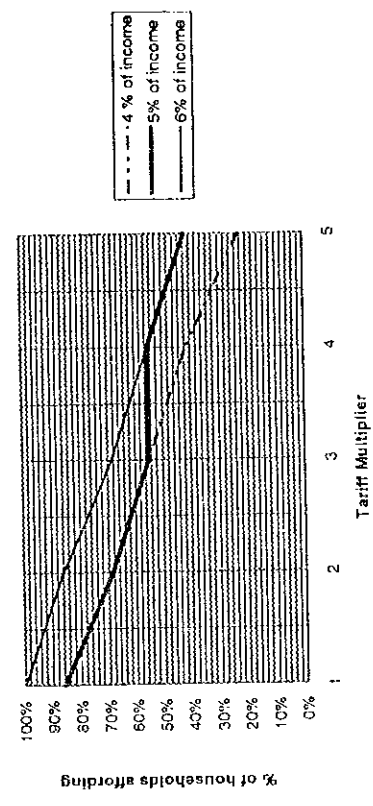
THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.2-25
 Work Schedule for Meter Installation
 and Leakage Control (Tentative)

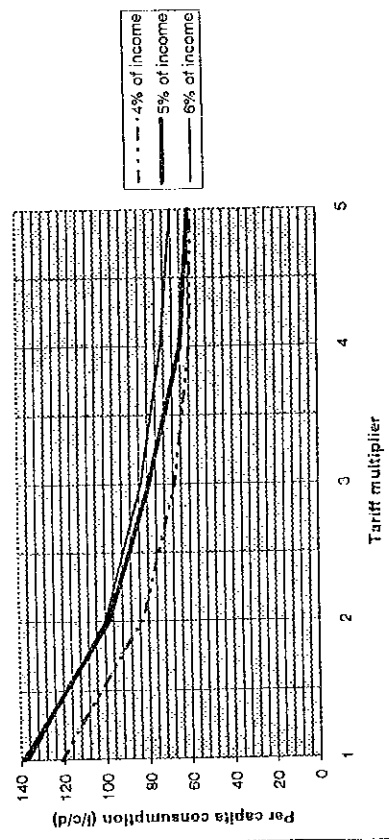
Household income profile



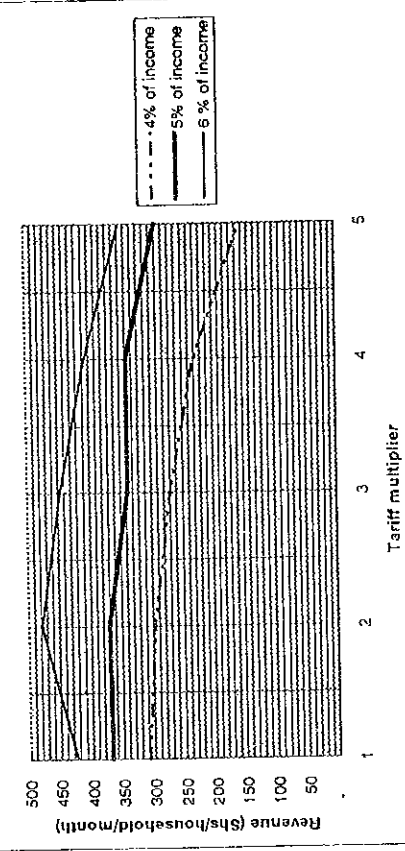
Percent of households affording connections



Per capita consumption (for connected services)



Average revenue from all households

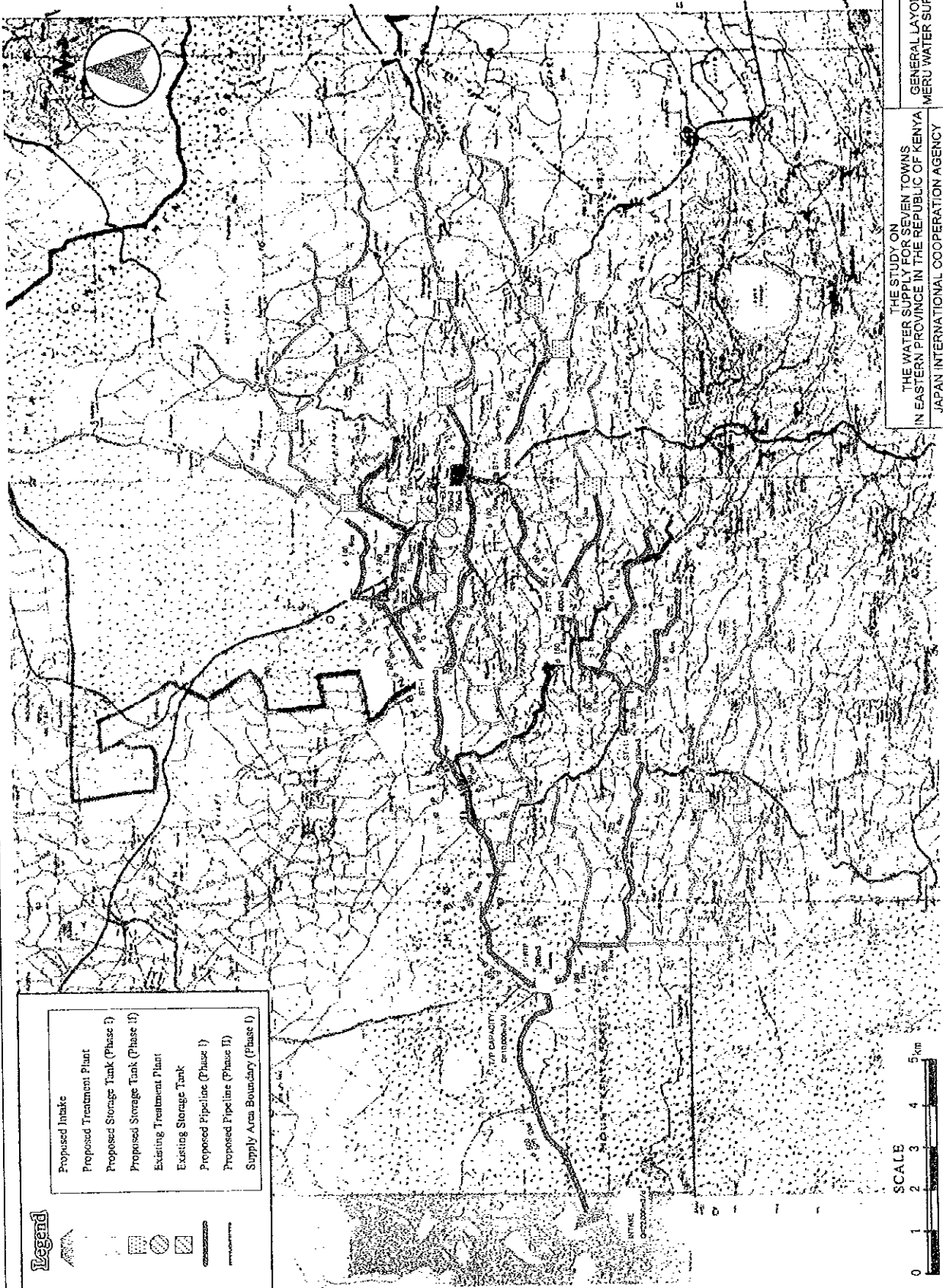


THE STUDY ON
THE WATER SUPPLY FOR SEVEN TOWNS
IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 5.4-1
Household Affordability

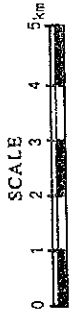
FEASIBILITY STUDY

REPORT



Legend

- Proposed Intake
- Proposed Treatment Plant
- Proposed Storage Tank (Phase I)
- Proposed Storage Tank (Phase II)
- Existing Treatment Plant
- Existing Storage Tank
- Proposed Pipeline (Phase I)
- Proposed Pipeline (Phase II)
- Supply Area Boundary (Phase I)



THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
 JAPAN INTERNATIONAL COOPERATION AGENCY
 GENERAL LAYOUT PLAN OF
 MERU WATER SUPPLY SYSTEM

