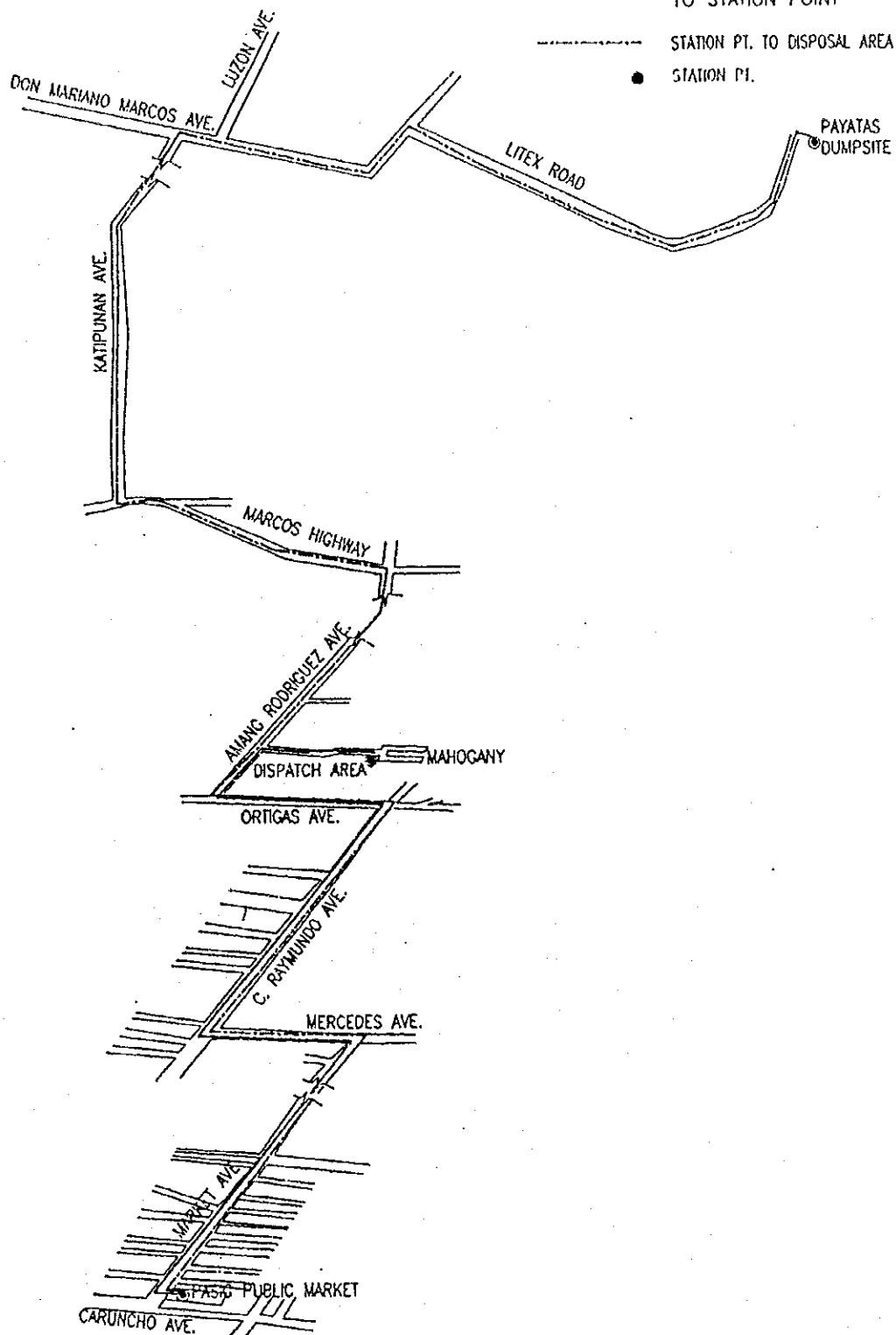


# LEGEND:

- ROUTE FROM DISPATCH AREA TO STATION POINT
- STATION PT. TO DISPOSAL AREA
- STATION PT.



PASIG

MARKET

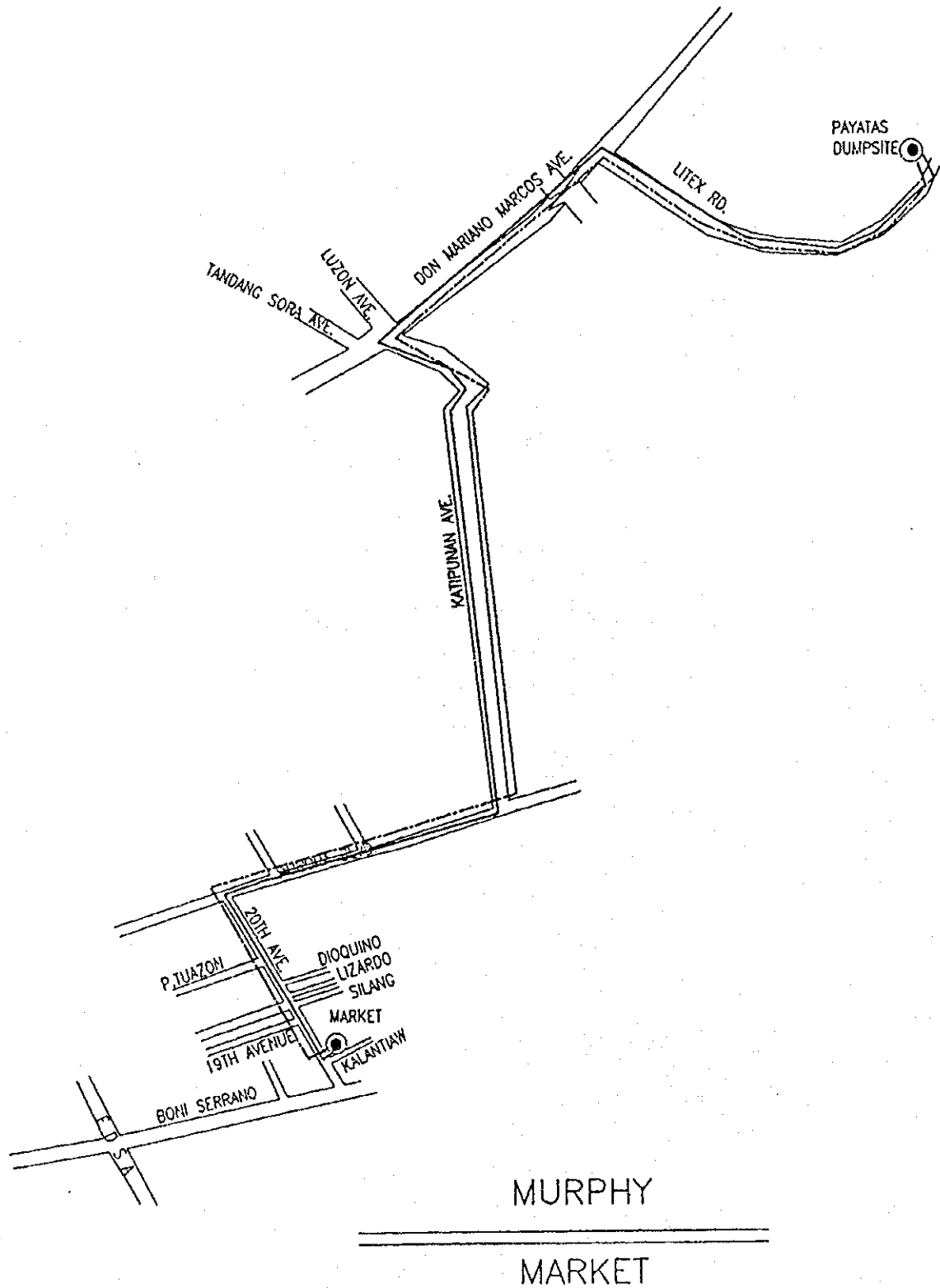
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: M-1  
GARBAGE COLLECTION ROUTE MAP  
FOR PASIG PUBLIC MARKET  
TIME AND MOTION SURVEY

# LEGEND:

- ROUTE FROM DISPATCH AREA TO STATION POINT
- - - STATION PT. TO DISPOSAL AREA
- STATION PT.



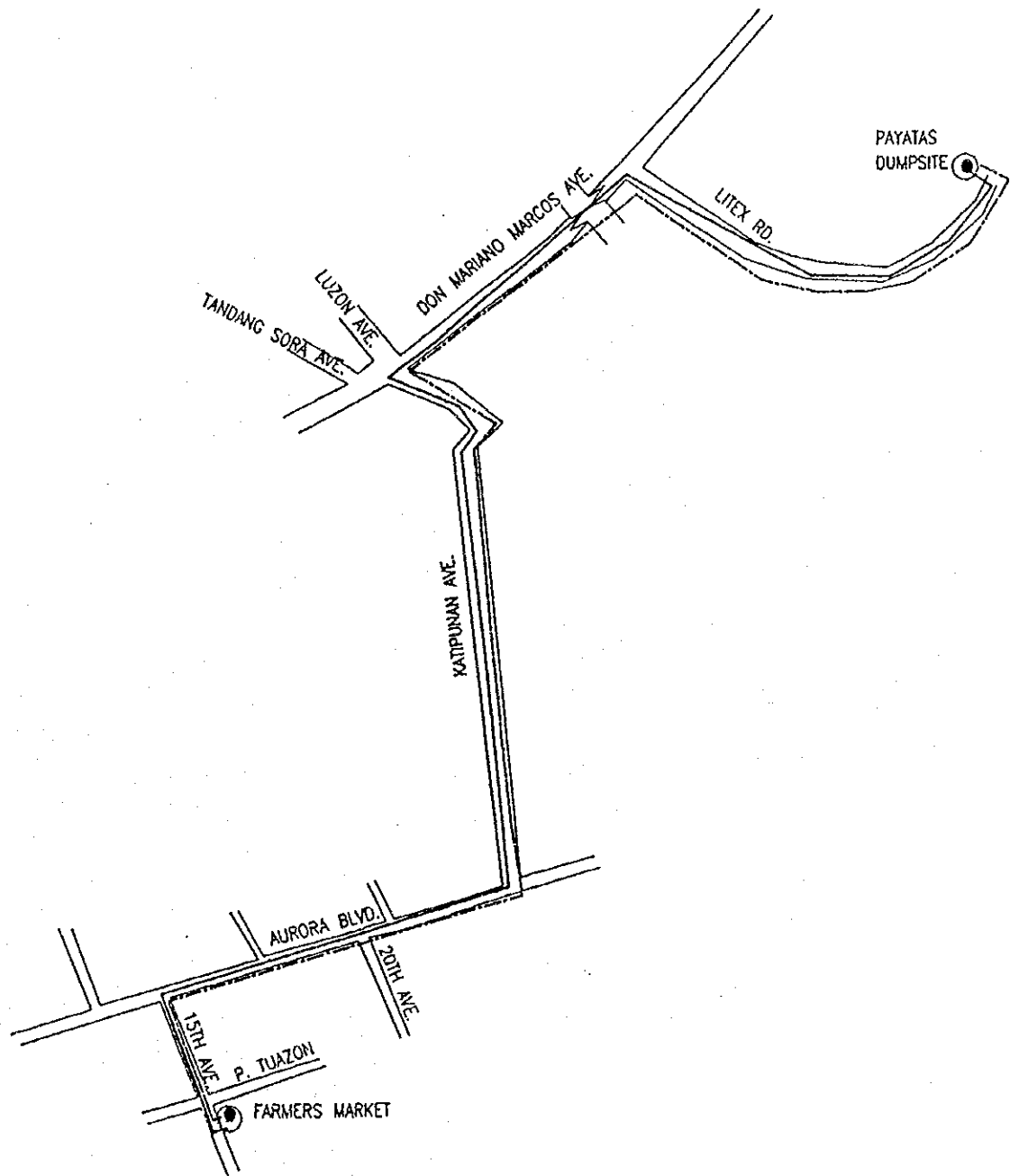
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: M-2  
GARBAGE COLLECTION ROUTE MAP  
FOR MURPHY PUBLIC MARKET  
TIME AND MOTION SURVEY

# LEGEND:

- ROUTE FROM DISPATCH AREA TO STATION POINT
- - - STATION PT. TO DISPOSAL AREA
- STATION PT.



CUBAO

MARKET

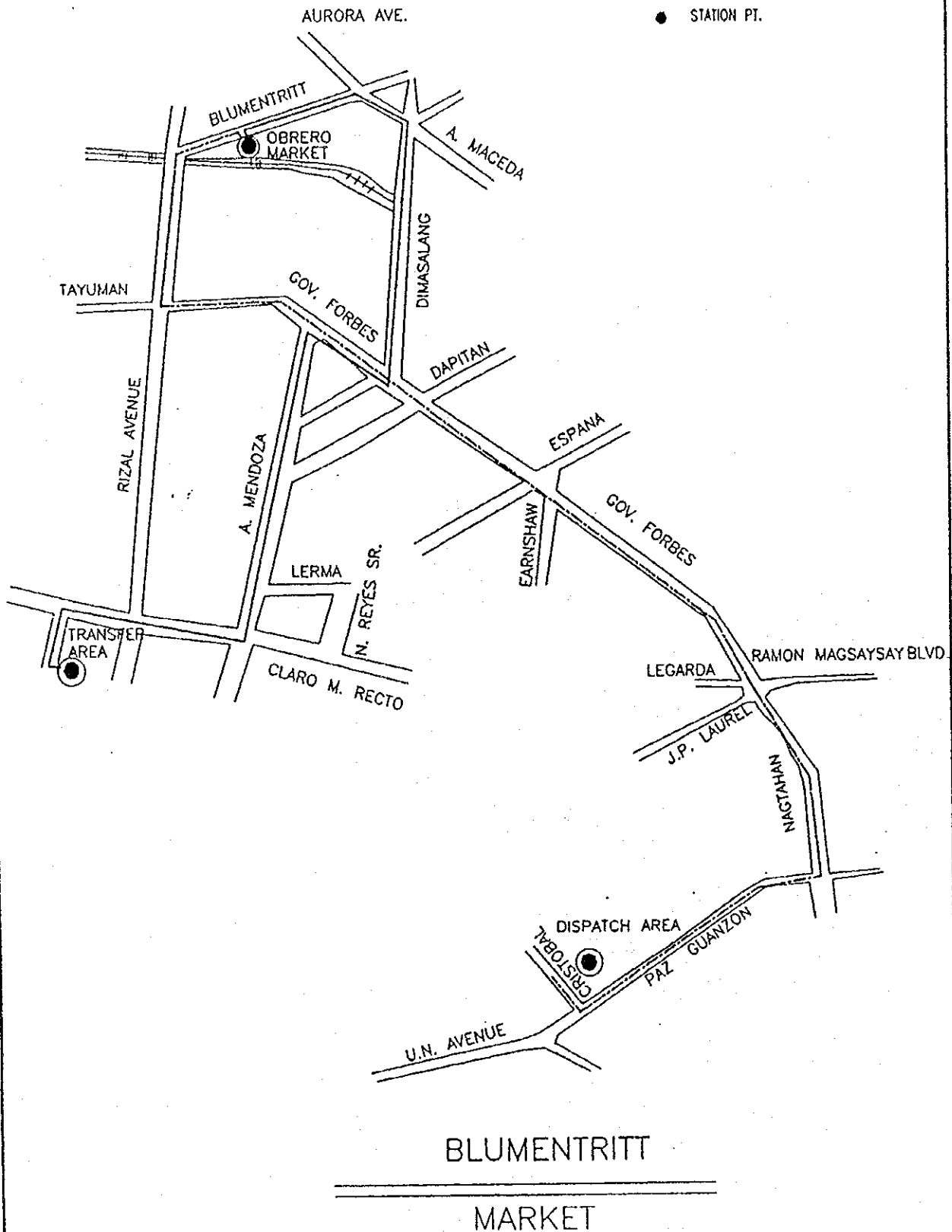
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: M-3  
GARBAGE COLLECTION ROUTE MAP  
FOR FARMERS MARKET  
TIME AND MOTION SURVEY

# LEGEND:

- ROUTE FROM DISPATCH AREA TO STATION POINT
- STATION PT. TO TRANSFER AREA
- STATION PT.



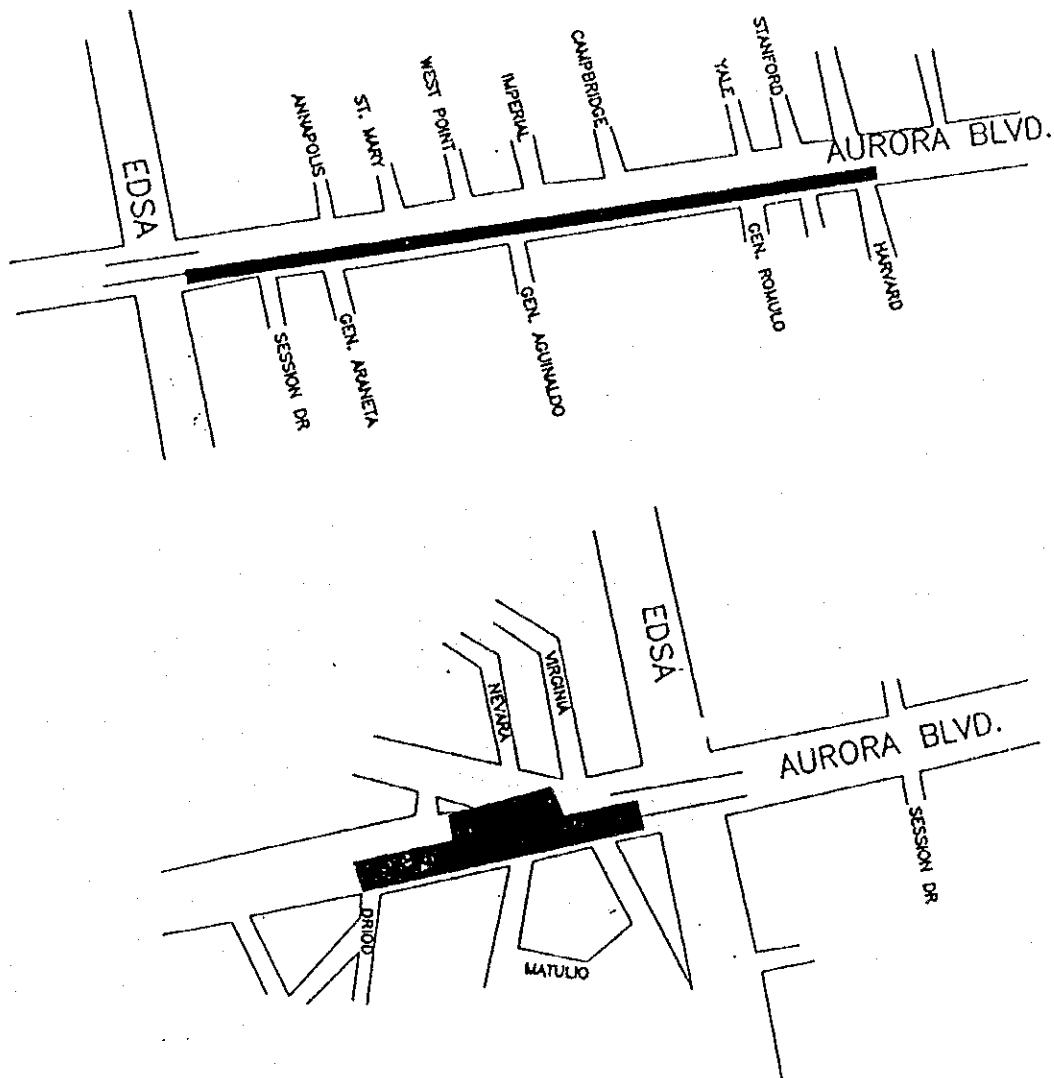
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: M-4  
GARBAGE COLLECTION ROUTE MAP  
FOR OBRERO MARKET  
TIME AND MOTION SURVEY

LEGEND :

■ SITE/WORKING AREA



CUBAO

STREET SWEEPING

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

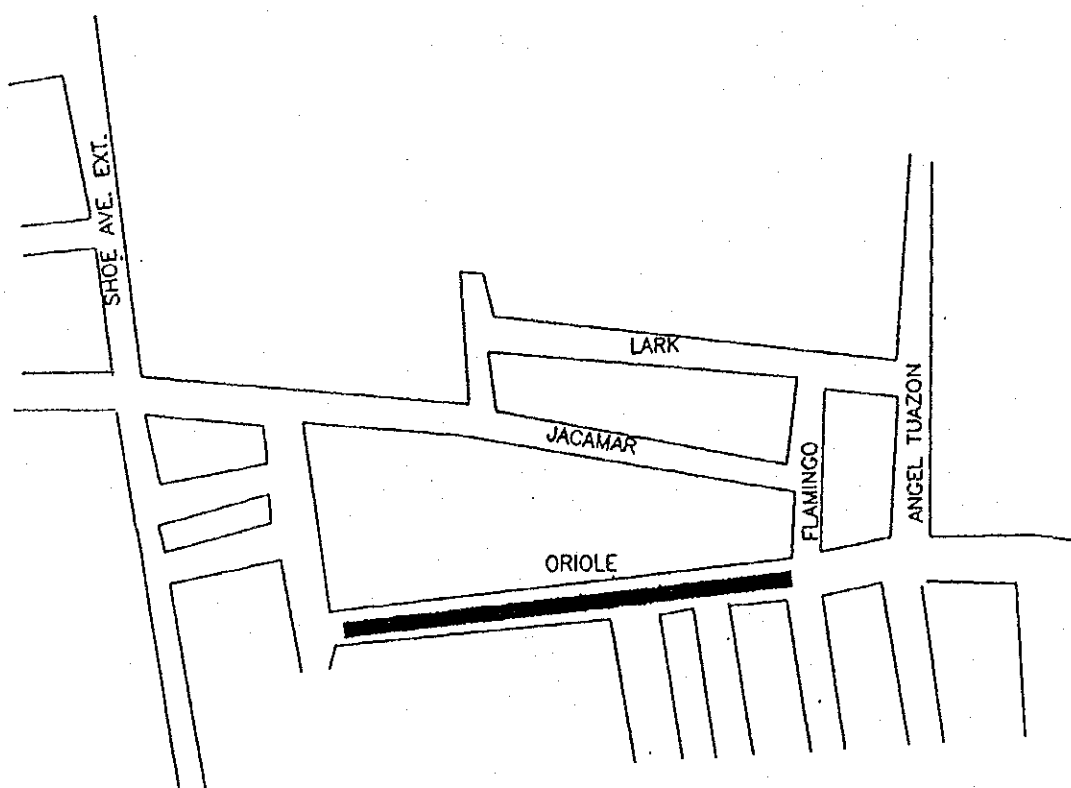
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: S-1  
GARBAGE COLLECTION ROUTE MAP  
FOR CUBAO  
TIME AND MOTION SURVEY

LEGEND:



SITE/WORKING AREA



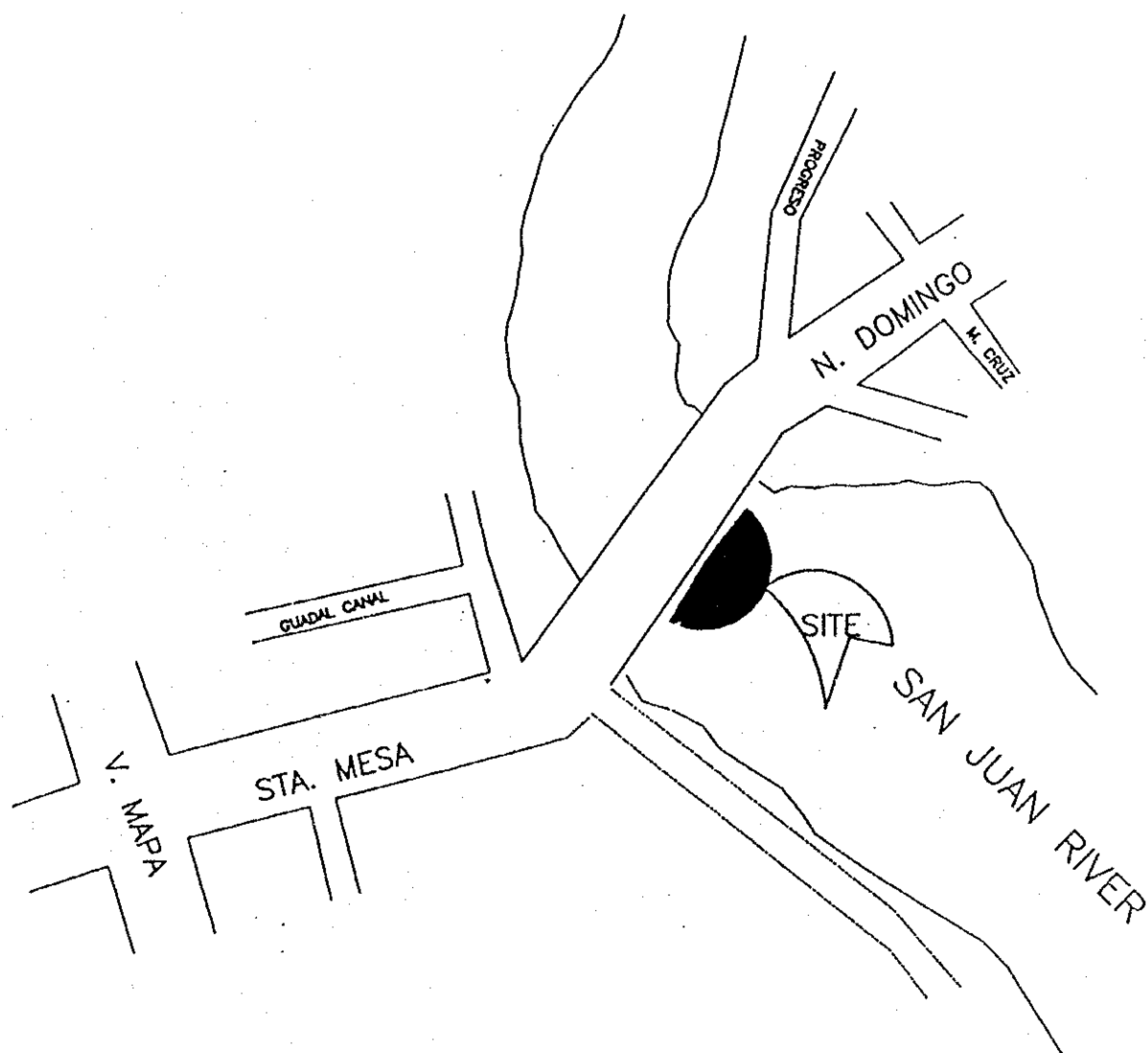
MARIKINA

STREET SWEEPING

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: S-2  
GARBAGE COLLECTION ROUTE MAP  
FOR MARIKINA  
TIME AND MOTION SURVEY



SAN JUAN  
RIVER CLEANSING

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: RC-1  
GARBAGE COLLECTION ROUTE MAP  
FOR SAN JUAN  
TIME AND MOTION SURVEY

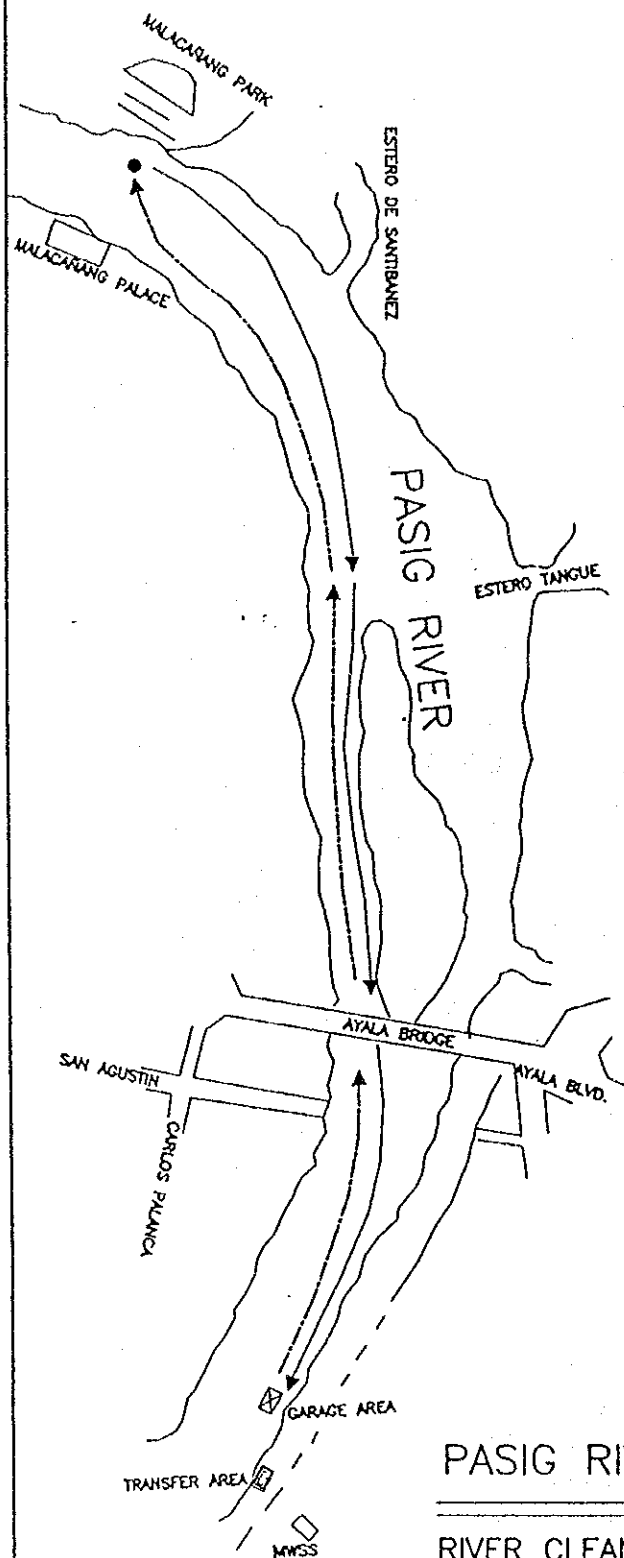
# 1ST TRIP

## LEGEND :

• STATION PT.

→ GOING TO STN. POINT

→ GOING TO TRANSFER/GARAGE AREA



PASIG RIVER  
RIVER CLEANSING

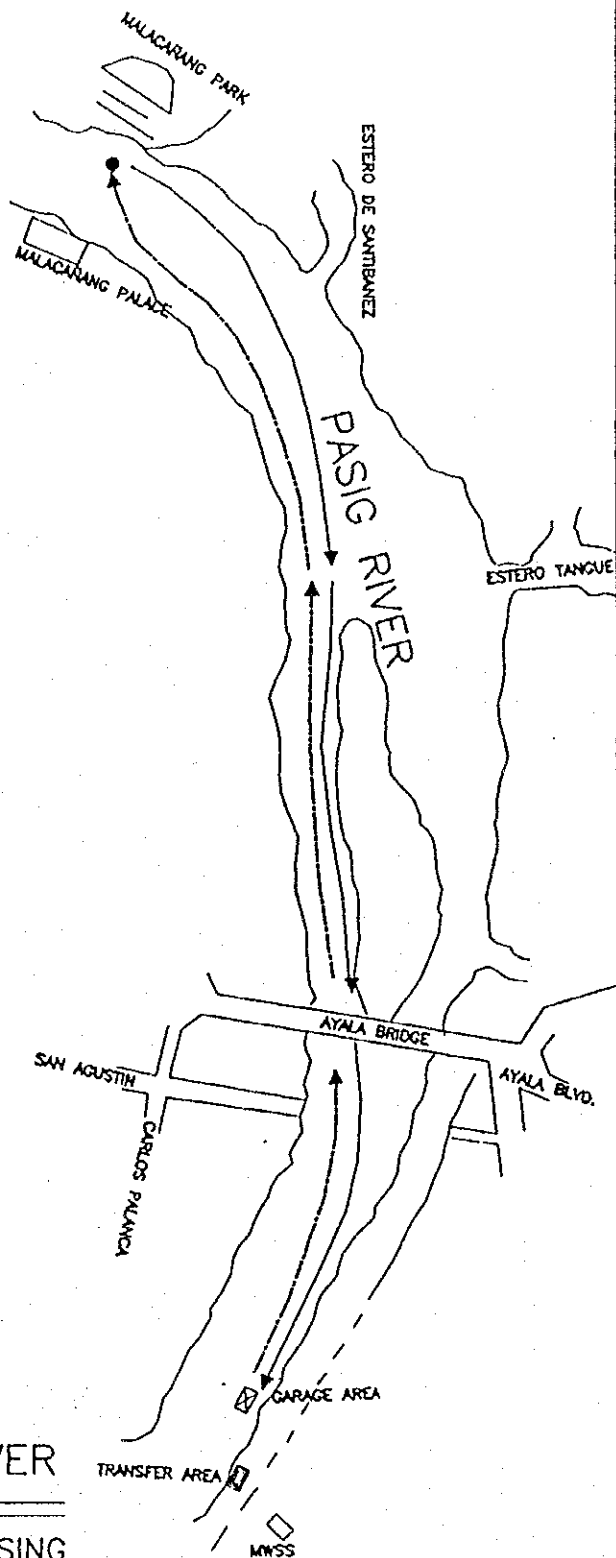
# 2nd TRIP

## LEGEND :

• STATION PT.

→ GOING TO STN. POINT

→ GOING TO TRANSFER/GARAGE AREA



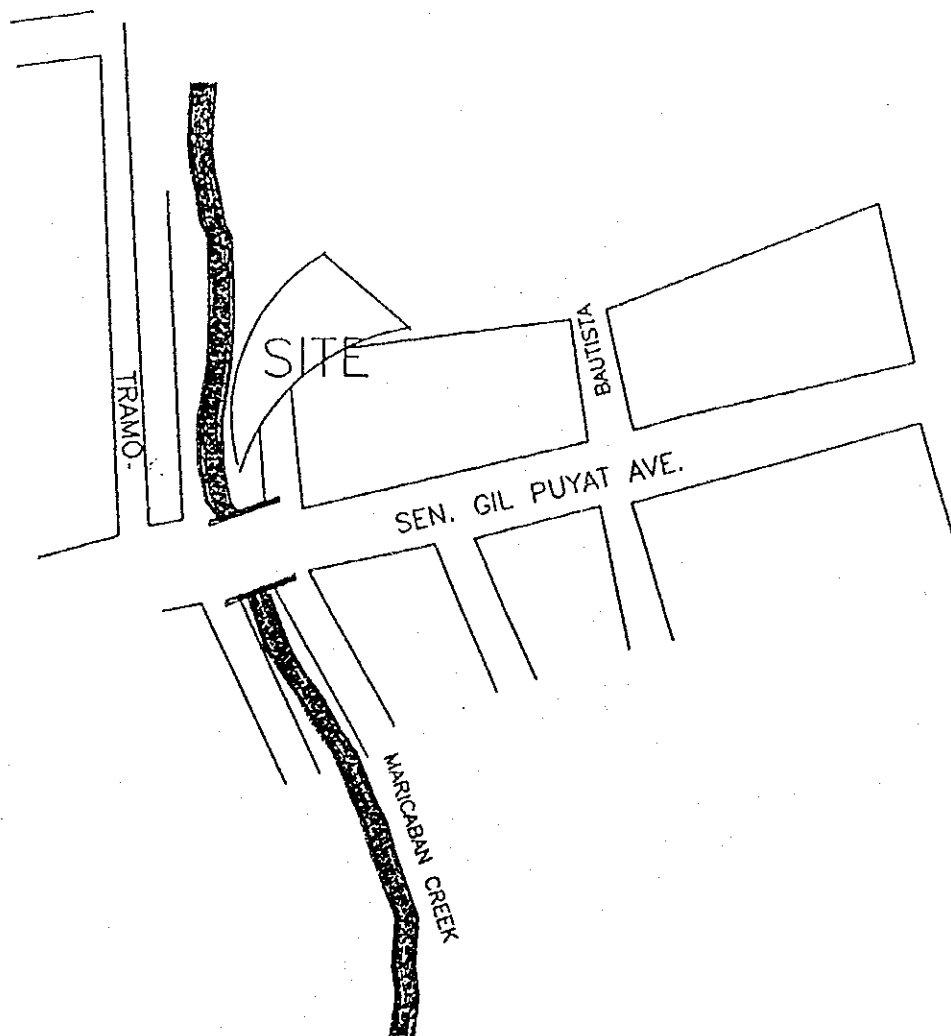
PASIG RIVER  
RIVER CLEANSING

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: RC-2  
GARBAGE COLLECTION ROUTE MAP  
FOR PASIG RIVER  
TIME AND MOTION SURVEY





PASAY CITY

RIVER CLEANSING

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

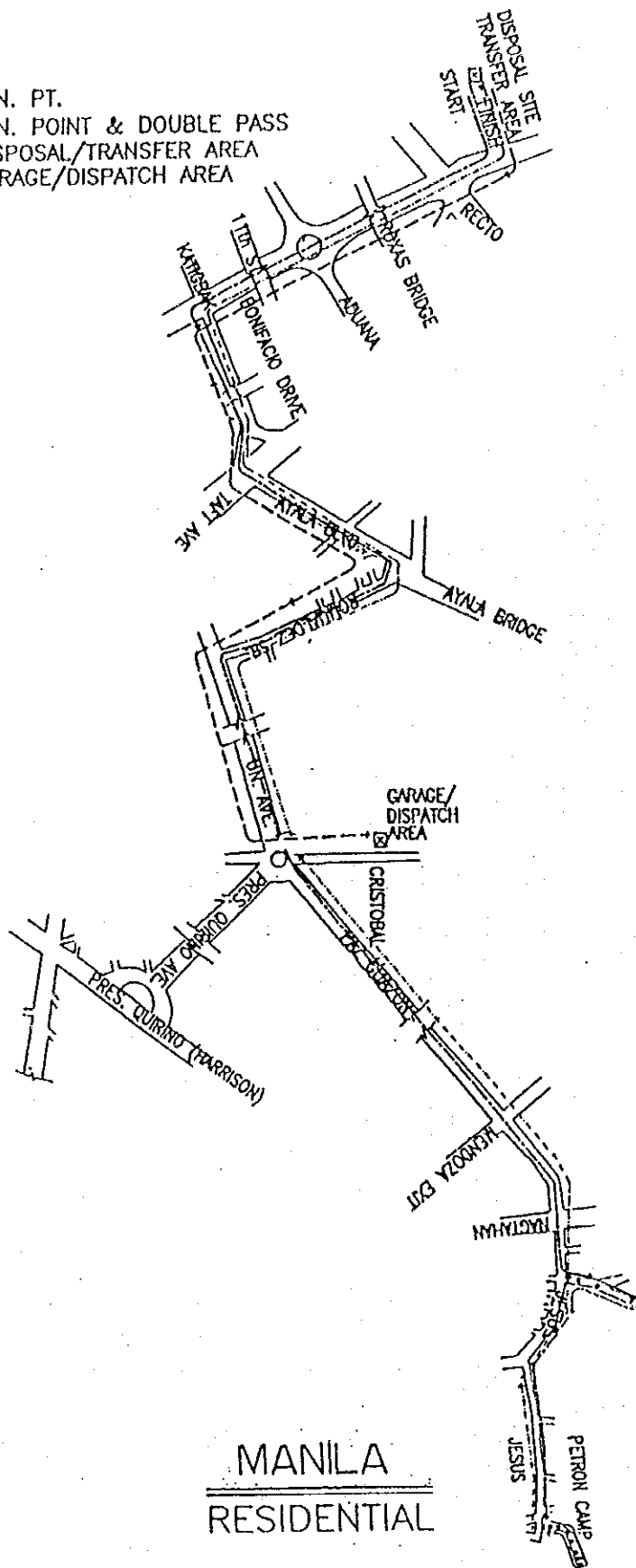
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: RC-3  
GARBAGE COLLECTION ROUTE MAP  
FOR PASAY CITY  
TIME AND MOTION SURVEY

## 2nd TRIP

### LEGEND :

- STATION PT.
- > GOING TO STN. PT.
- > GOING TO STN. POINT & DOUBLE PASS
- > GOING TO DISPOSAL/TRANSFER AREA
- > GOING TO GARAGE/DISPATCH AREA



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-1  
GARBAGE COLLECTION ROUTE MAP  
FOR MANILA (PIER '2')  
TIME AND MOTION SURVEY

LEGEND :

- [illegible]

MANILA  
RESIDENTIAL

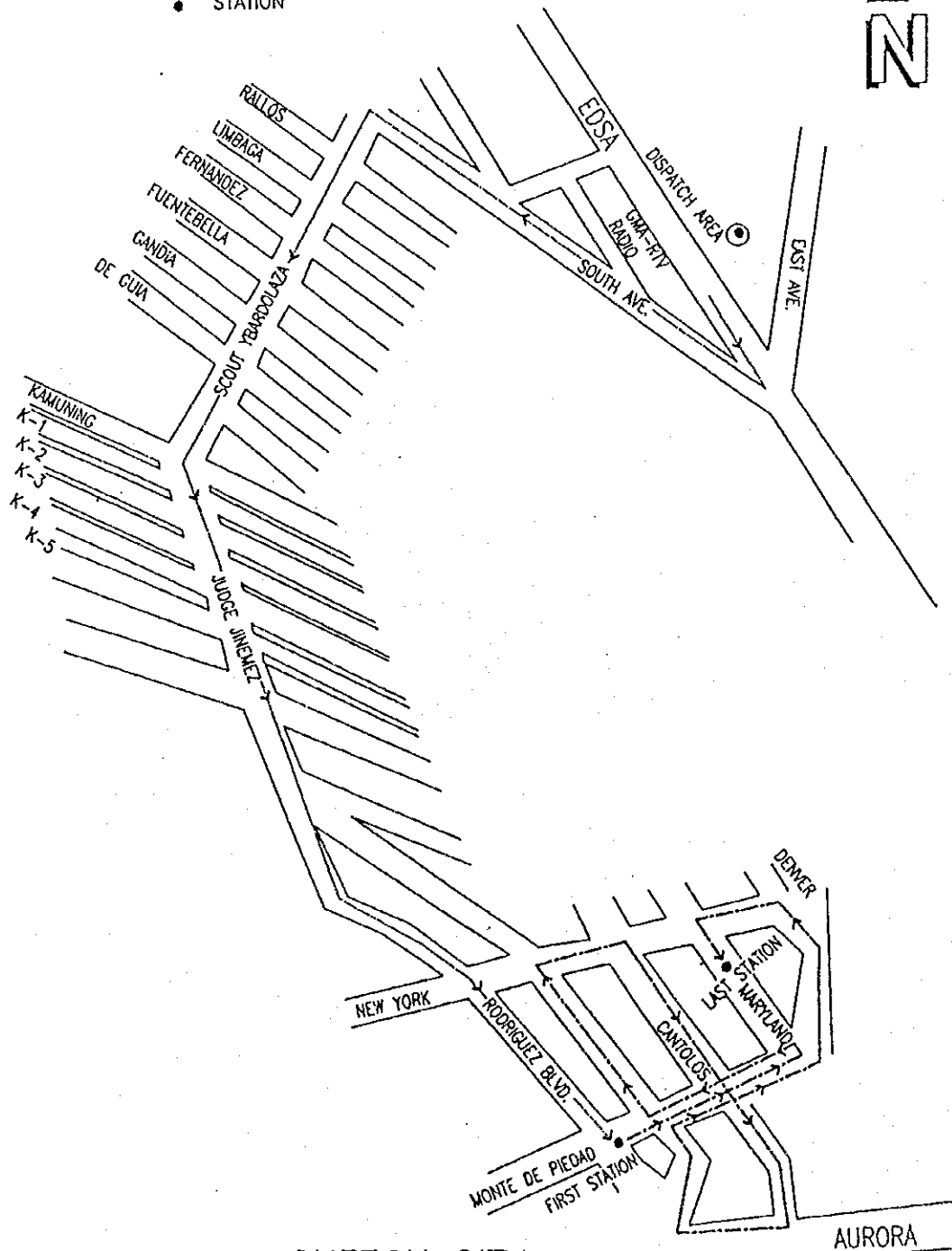
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-1  
GARBAGE COLLECTION ROUTE MAP  
FOR MANILA (PIER 2)  
TIME AND MOTION SURVEY



ROUTE FROM DISPATCH AREA  
TO 1ST STATION

GARBAGE COLLECTION ROUTE  
STATION



QUEZON CITY  
RESIDENTIAL

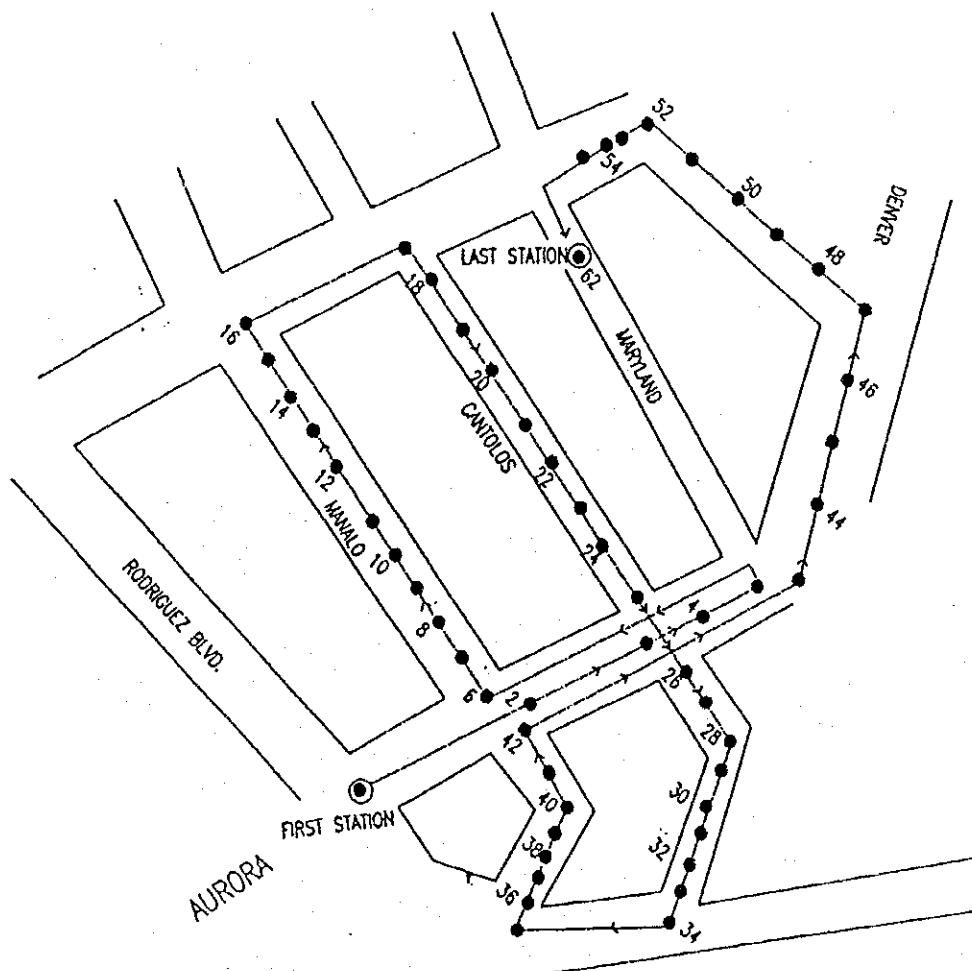
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-2  
GARBAGE COLLECTION ROUTE MAP  
FOR QUEZON CITY  
TIME AND MOTION SURVEY

2nd TRIP

LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- GARBAGE COLLECTION ROUTE
- STATION

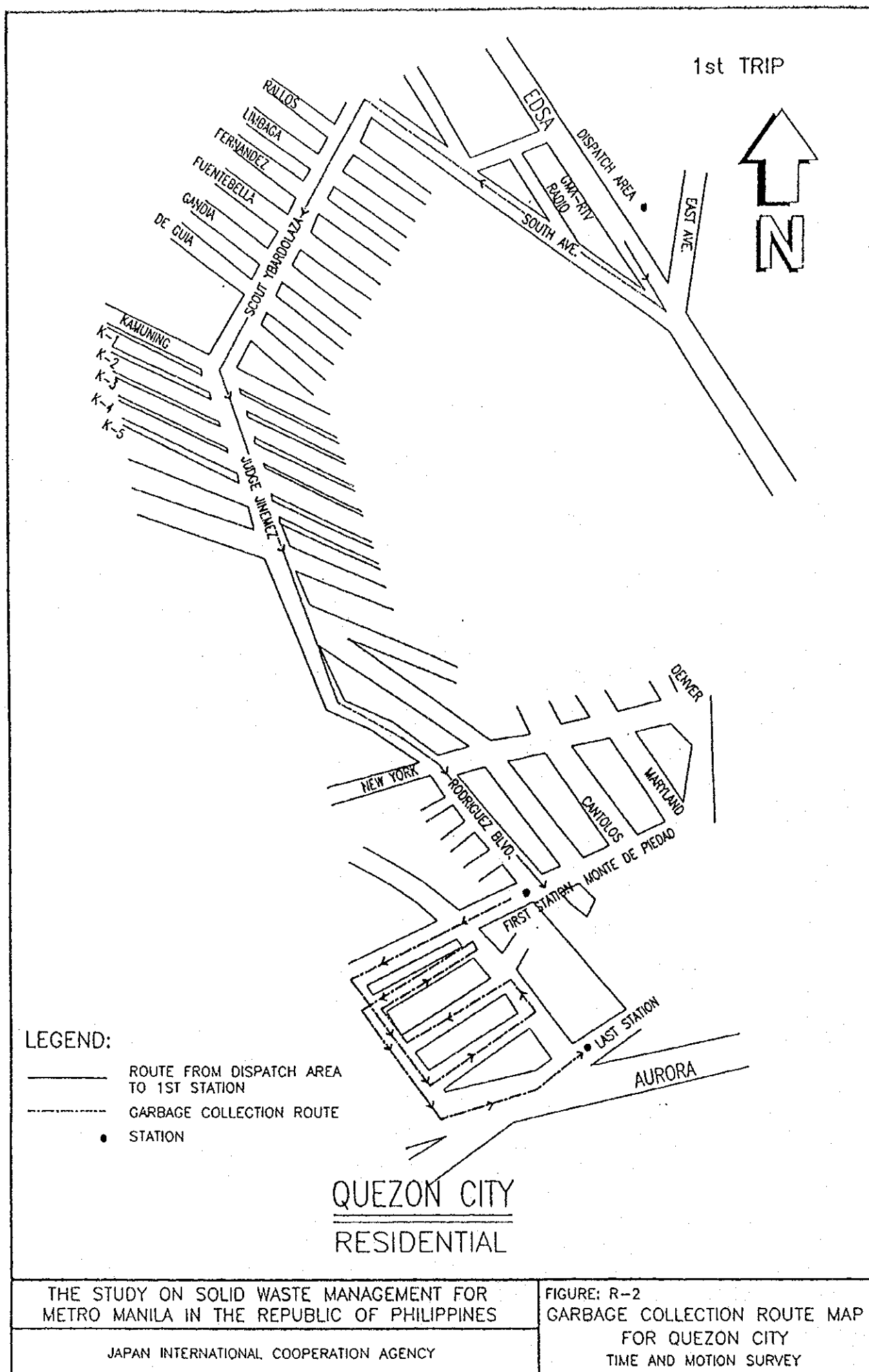


QUEZON CITY  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

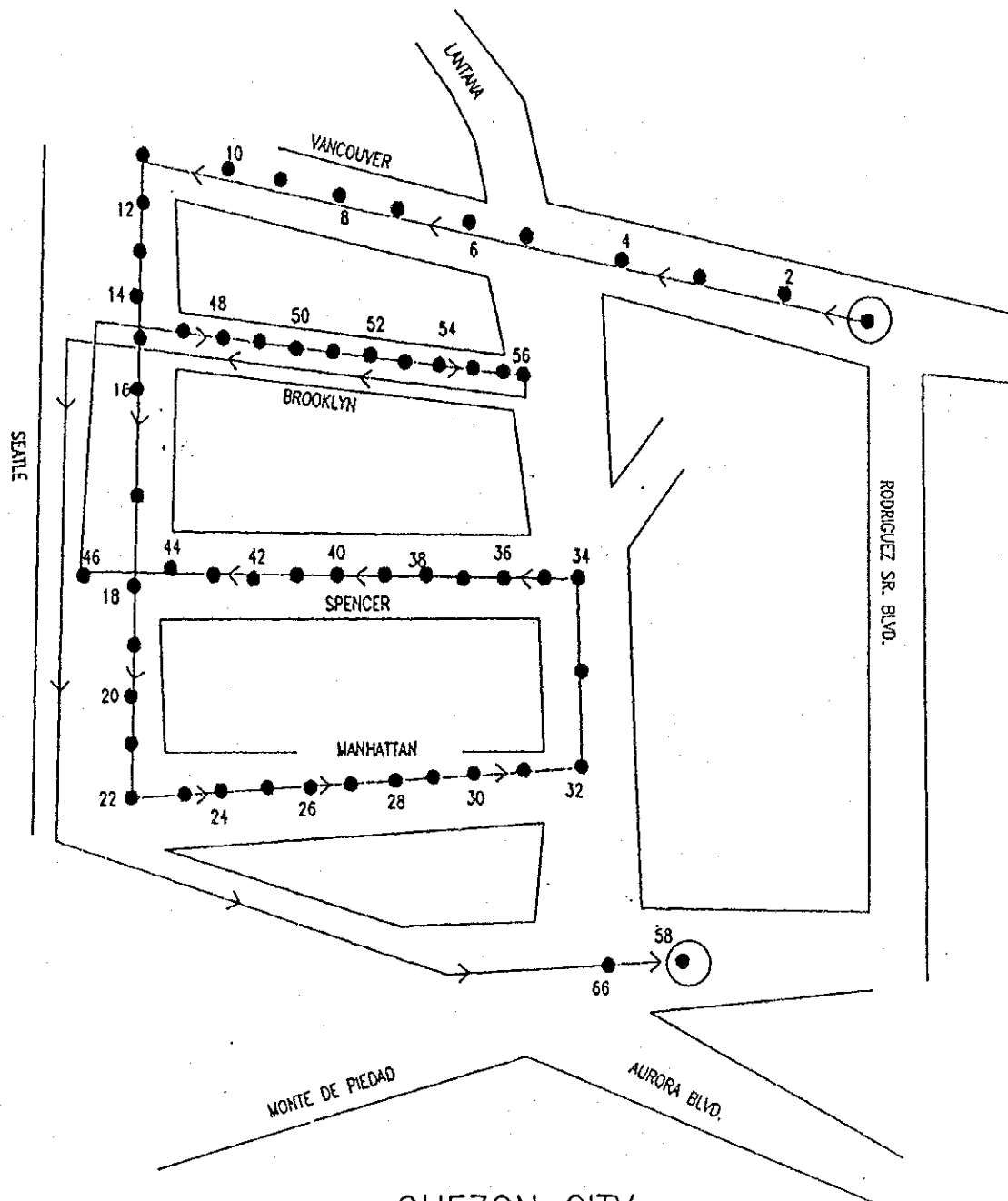
FIGURE: R-2  
GARBAGE COLLECTION ROUTE MAP  
FOR QUEZON CITY  
TIME AND MOTION SURVEY



2nd TRIP

LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- - - - GARBAGE COLLECTION ROUTE
- STATION



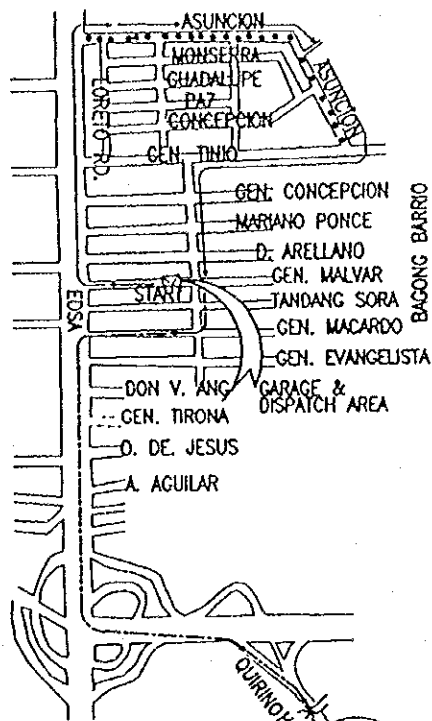
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-2  
GARBAGE COLLECTION ROUTE MAP  
FOR QUEZON CITY  
TIME AND MOTION SURVEY



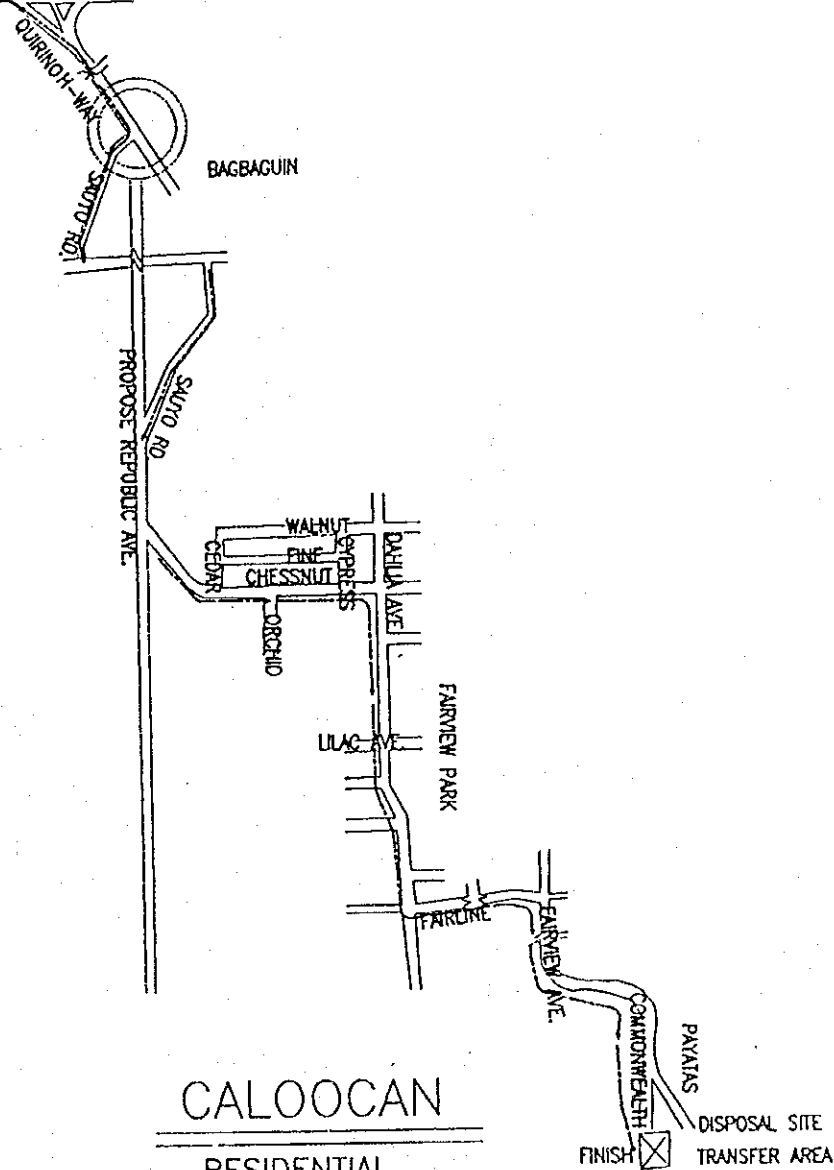




1st TRIP

LEGEND :

- STATION PT.
- GOING TO STN. PT. DISPATCH AREA
- GOING TO DISPOSAL AREA



CALOOCAN  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

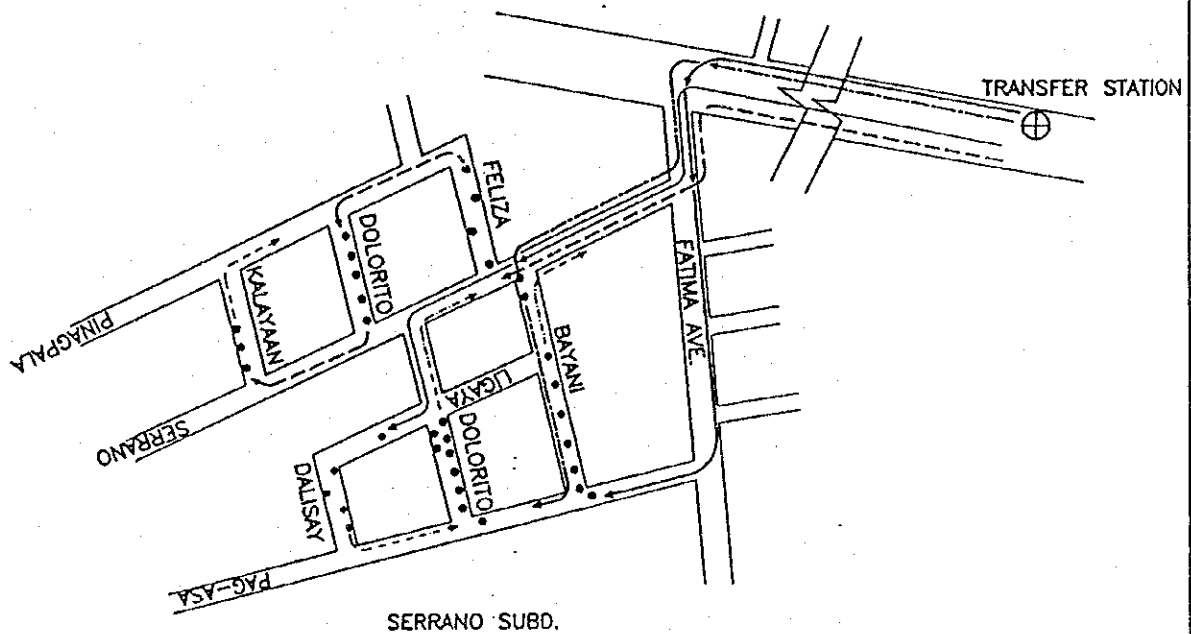
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-3  
GARBAGE COLLECTION ROUTE MAP  
FOR CALOOCAN  
TIME AND MOTION SURVEY



LEGEND :

- STATION PT.
- 1st TRIP, GOING TO STN. POINT
- - - -> 3rd TRIP, GOING TO STN. POINT
- 4th TRIP, GOING TO STN. POINT
- - - -> 5th TRIP, GOING TO STN. POINT
- - - -> BACK TO TRANSFER STATION



# VALENZUELA RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

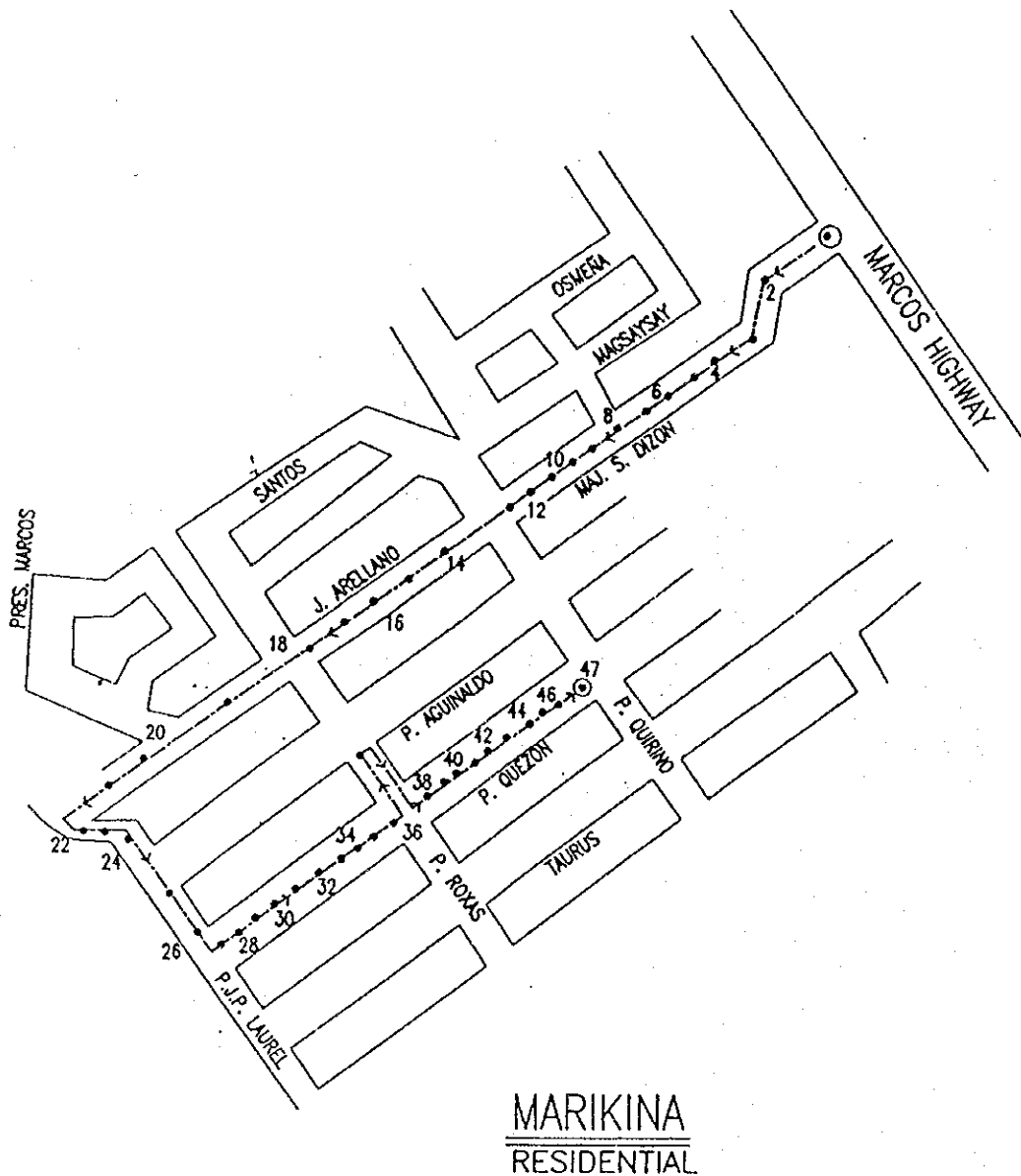
FIGURE: R-5  
GARBAGE COLLECTION ROUTE MAP  
FOR VALENZUELA  
TIME AND MOTION SURVEY

1st TRIP

LEGEND:

● STATION

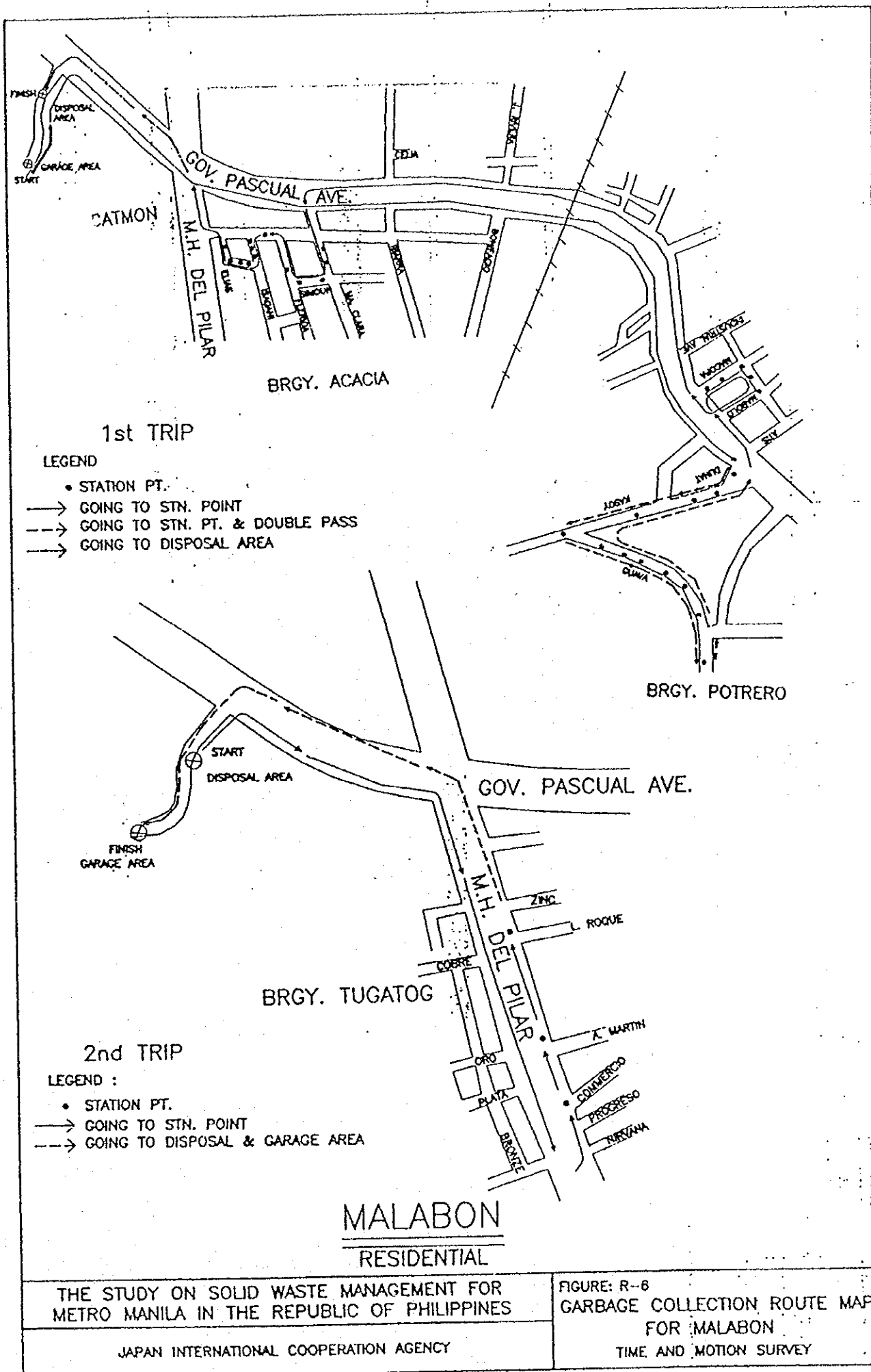
→ GARBAGE COLLECTION ROUTE



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

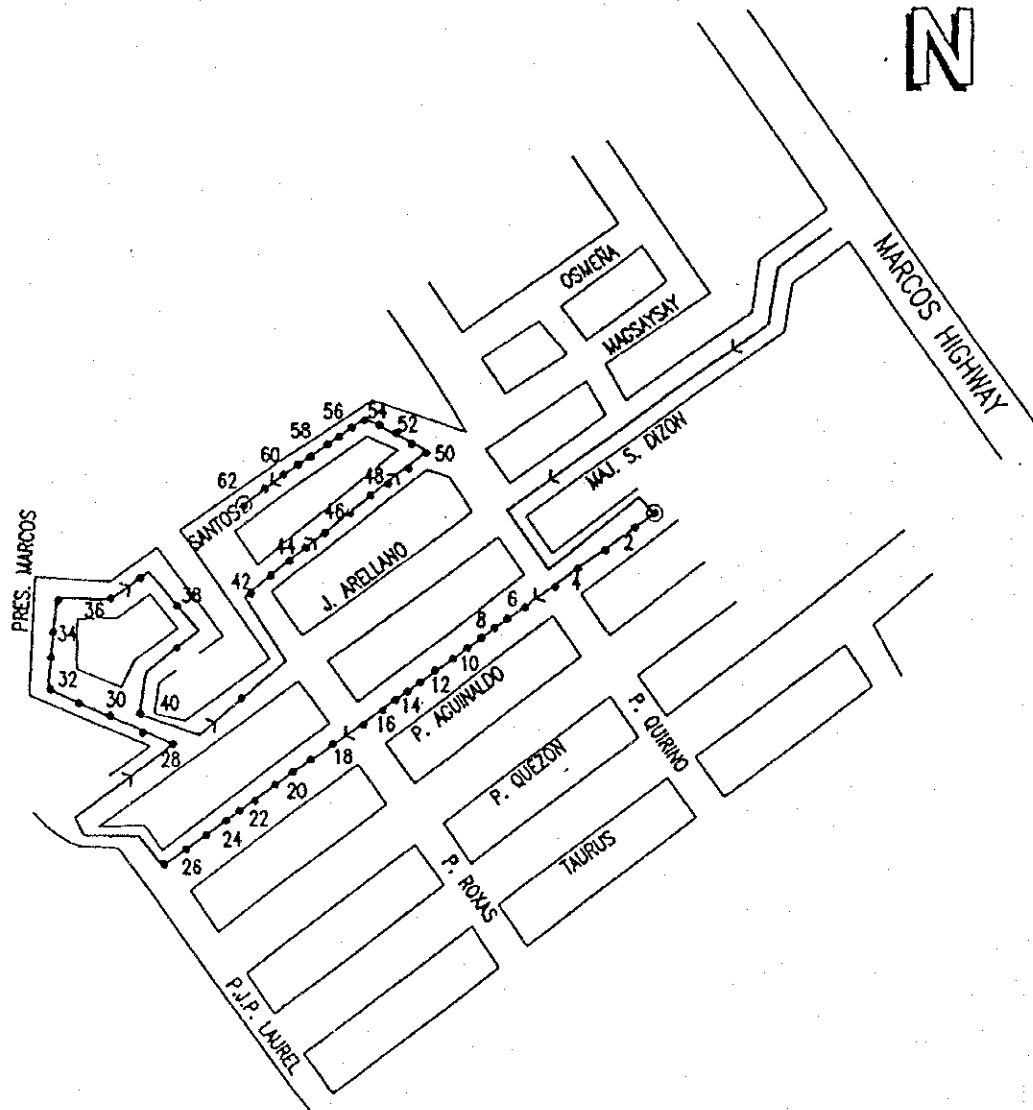
FIGURE: R-7  
GARBAGE COLLECTION ROUTE MAP  
FOR MARIKINA  
TIME AND MOTION SURVEY



2nd TRIP

LEGEND:

- STATION
- GARBAGE COLLECTION ROUTE



MARIKINA  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

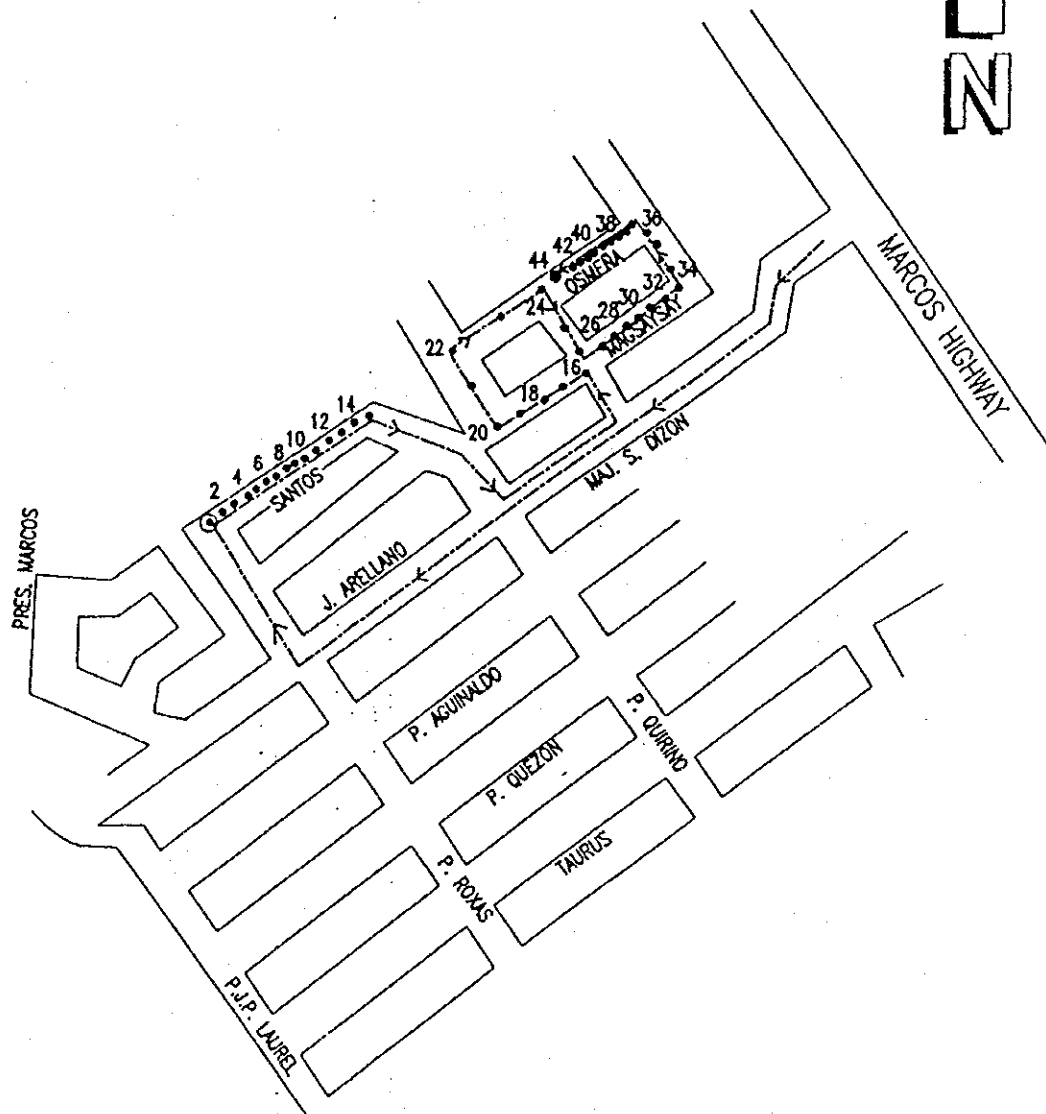
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-7  
GARBAGE COLLECTION ROUTE MAP  
FOR MARIKINA  
TIME AND MOTION SURVEY

3rd TRIP

LEGEND:

- STATION
- > GARBAGE COLLECTION ROUTE



MARIKINA  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

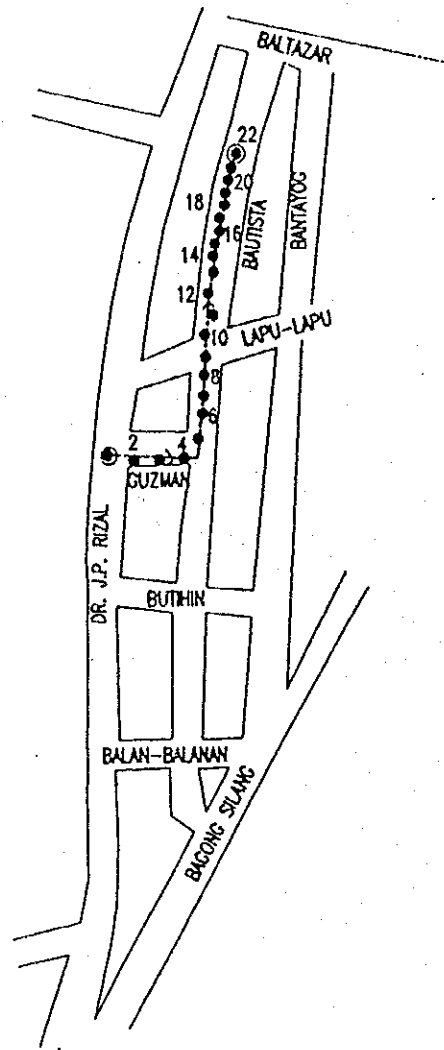
FIGURE: R-7  
GARBAGE COLLECTION ROUTE MAP  
FOR MARIKINA  
TIME AND MOTION SURVEY

4th TRIP

LEGEND:

● STATION

→ GARBAGE COLLECTION ROUTE



MARIKINA  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

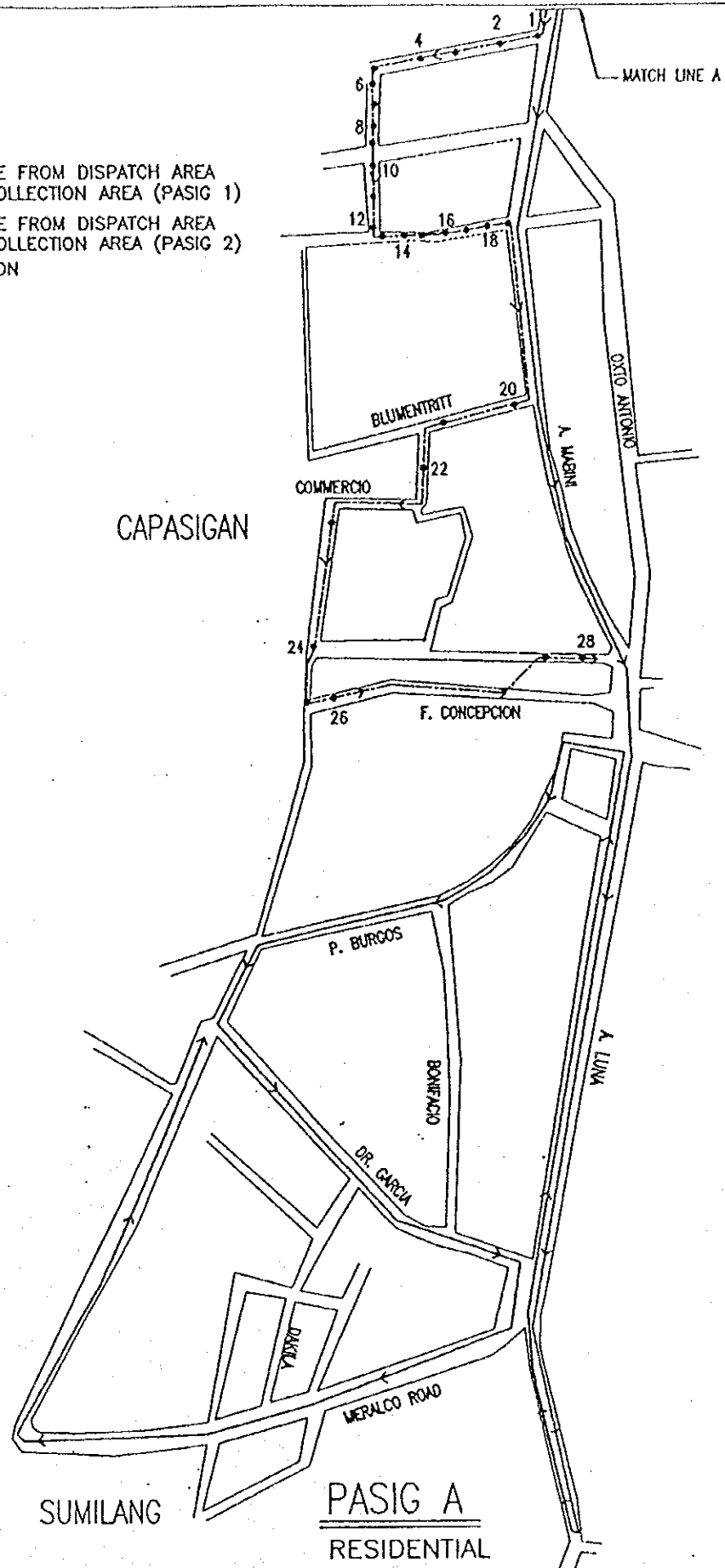
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-7  
GARBAGE COLLECTION ROUTE MAP  
FOR NARIKINA  
TIME AND MOTION SURVEY



LEGEND:

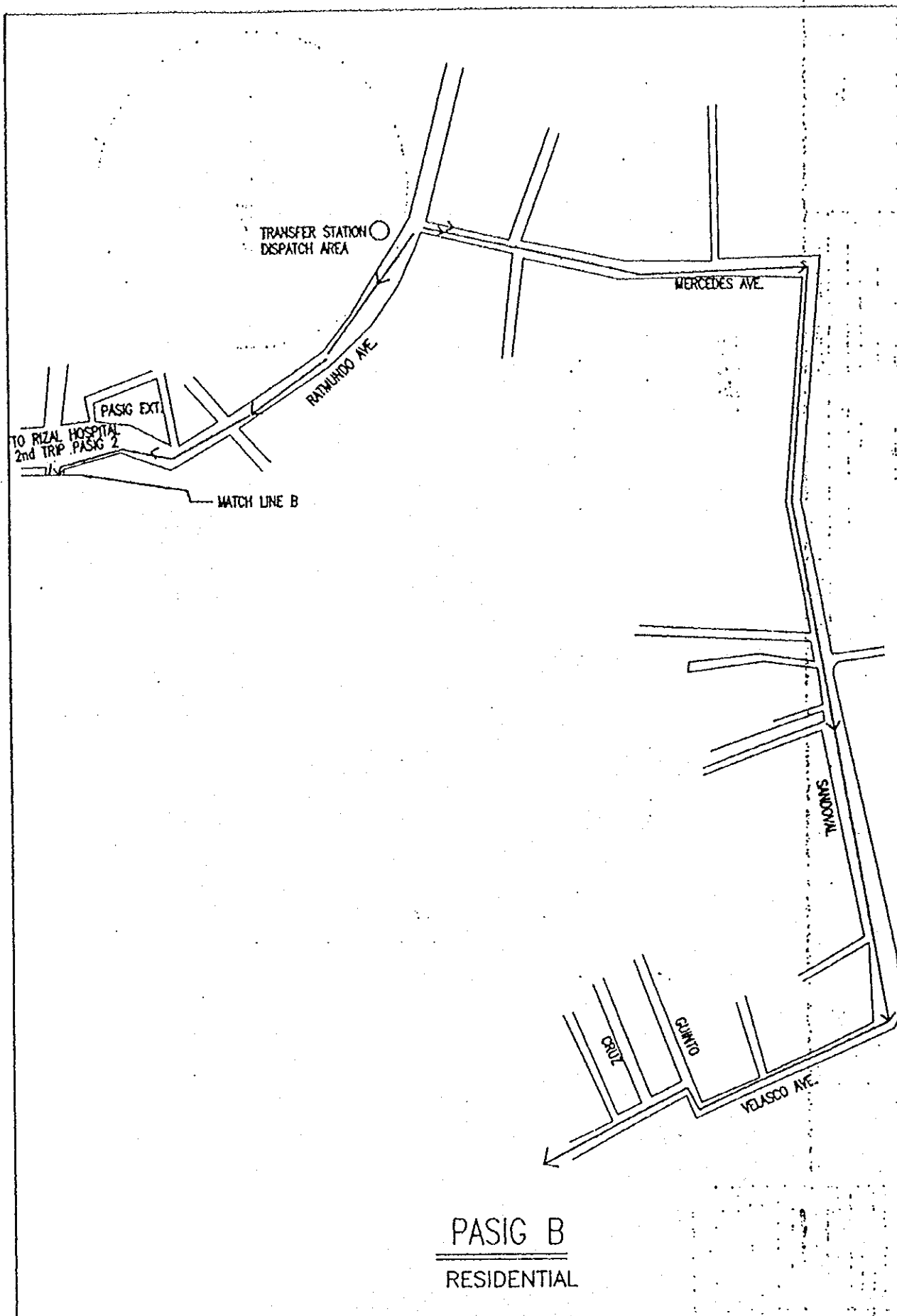
- ROUTE FROM DISPATCH AREA TO COLLECTION AREA (PASIG 1)
- - - ROUTE FROM DISPATCH AREA TO COLLECTION AREA (PASIG 2)
- STATION



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

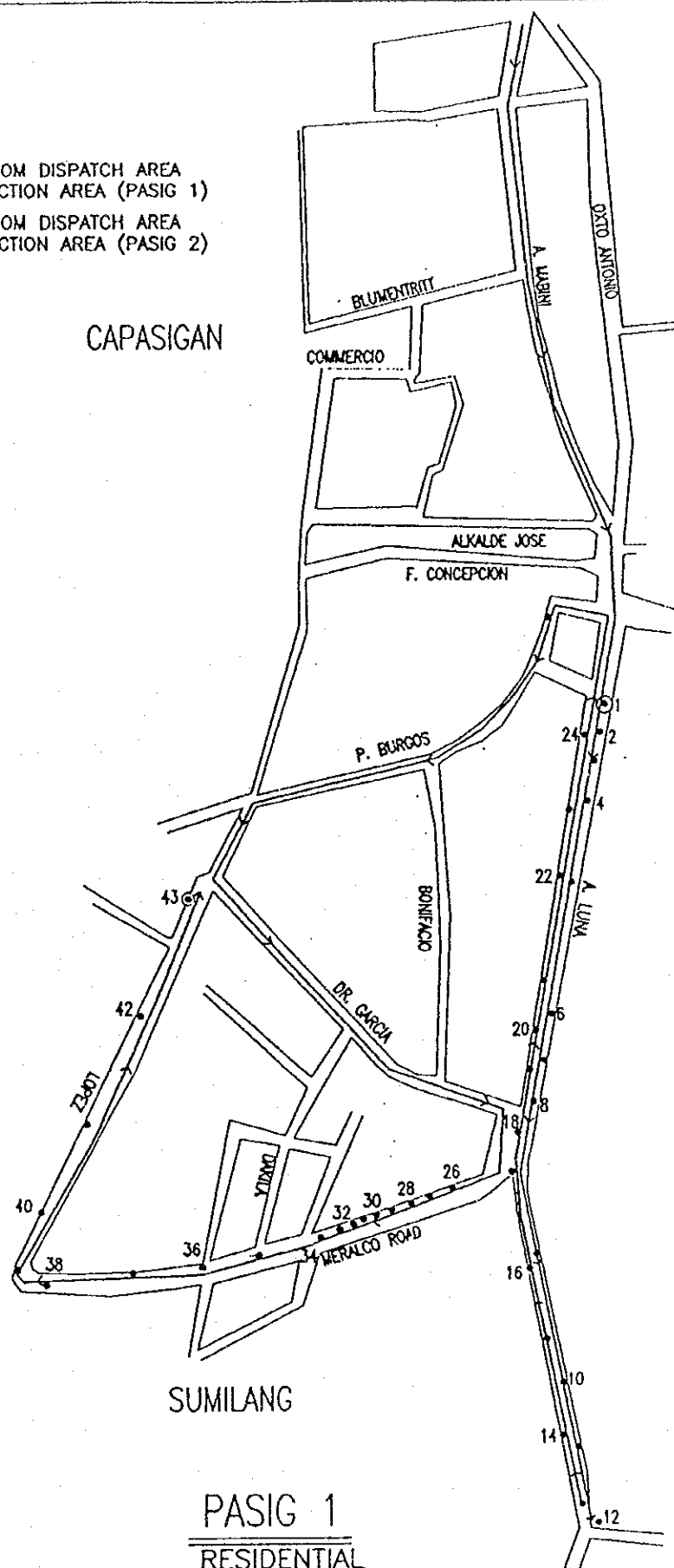
FIGURE: R-8  
GARBAGE COLLECTION ROUTE MAP  
FOR PASIG  
TIME AND MOTION SURVEY



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

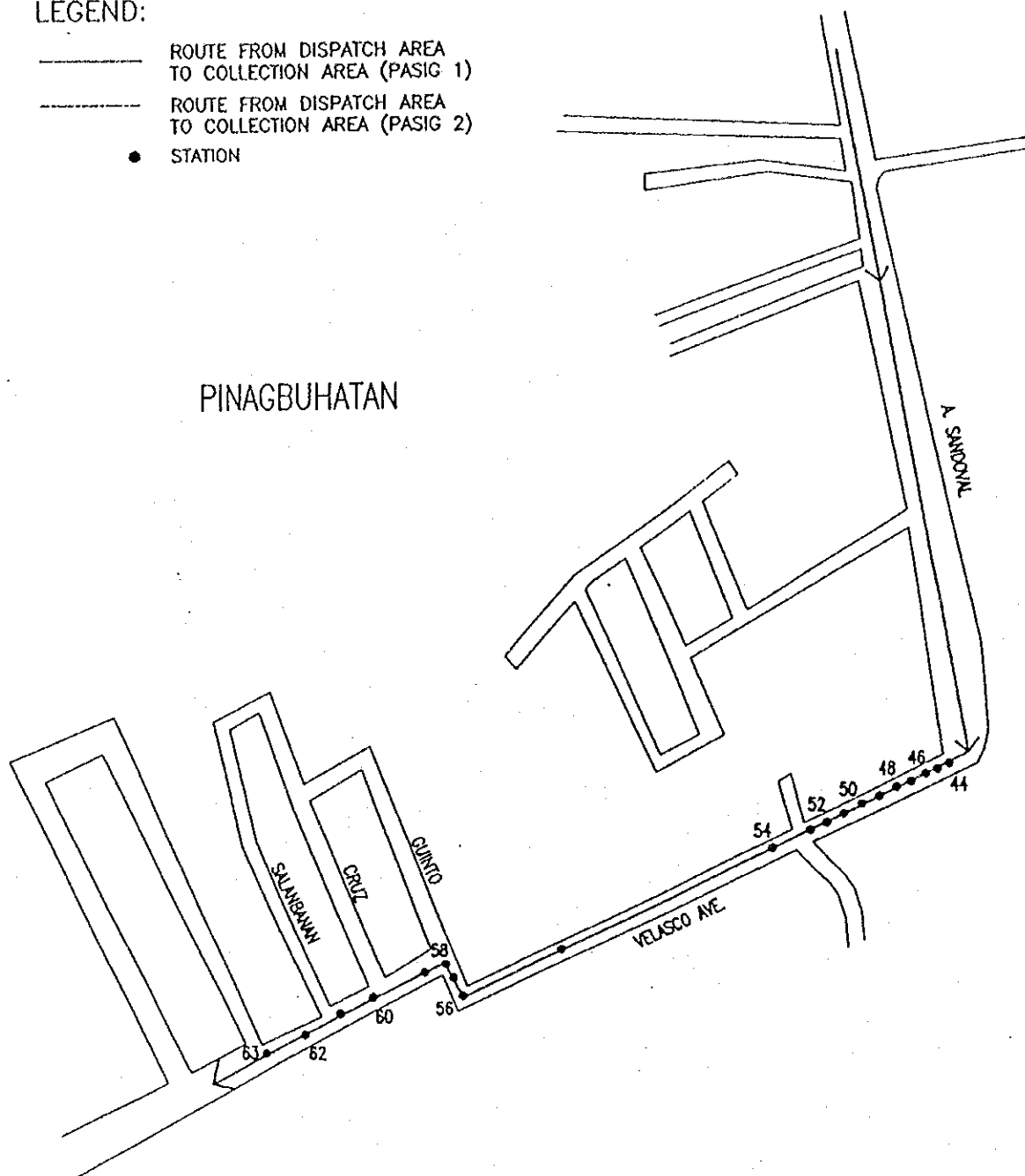
FIGURE: R-8  
GARBAGE COLLECTION ROUTE MAP  
FOR PASIG  
TIME AND MOTION SURVEY



# 1st TRIP (CONT.)

## LEGEND:

- ROUTE FROM DISPATCH AREA TO COLLECTION AREA (PASIG 1)
- ROUTE FROM DISPATCH AREA TO COLLECTION AREA (PASIG 2)
- STATION



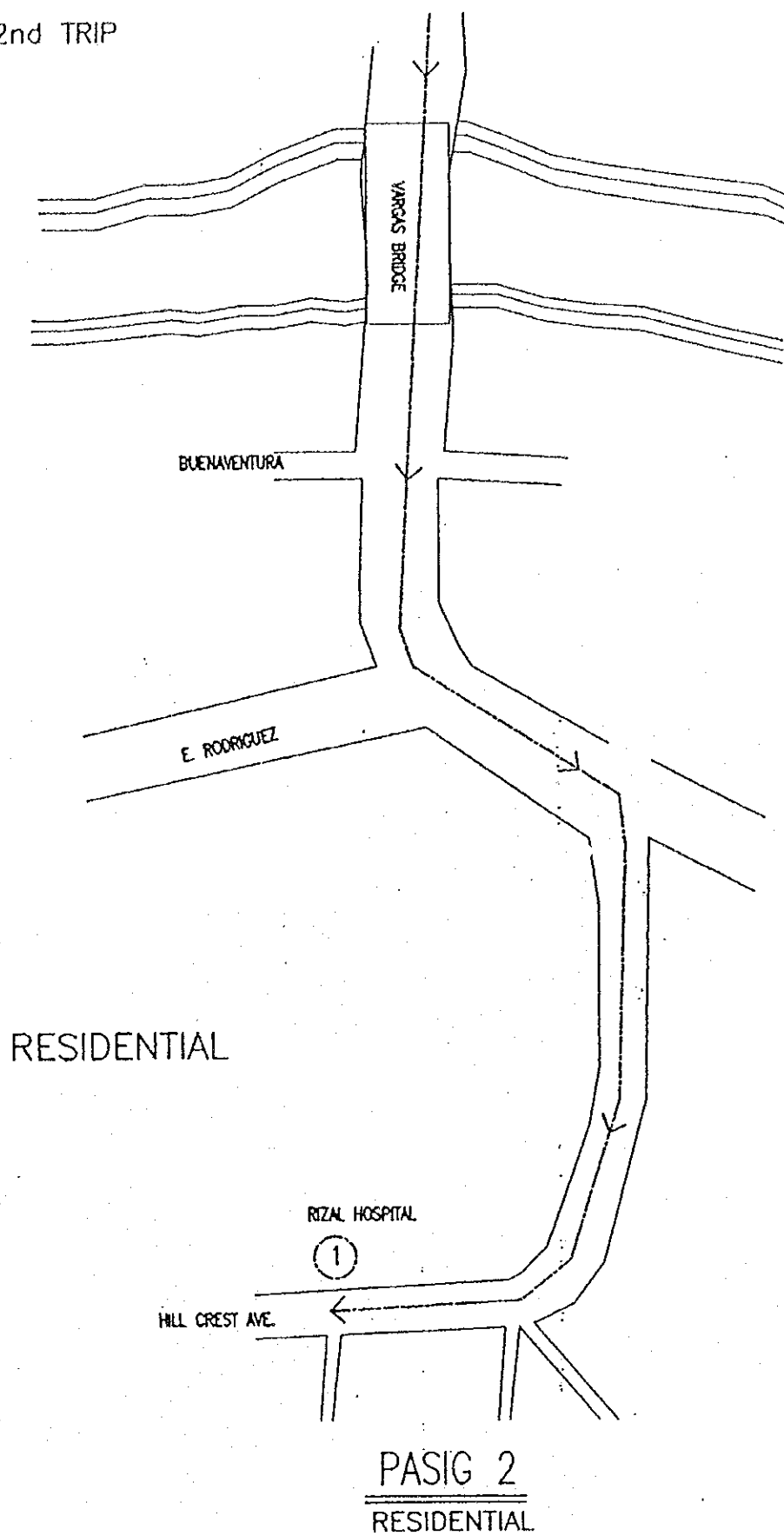
## PASIG 1 RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-8  
GARBAGE COLLECTION ROUTE MAP  
FOR PASIG  
TIME AND MOTION SURVEY

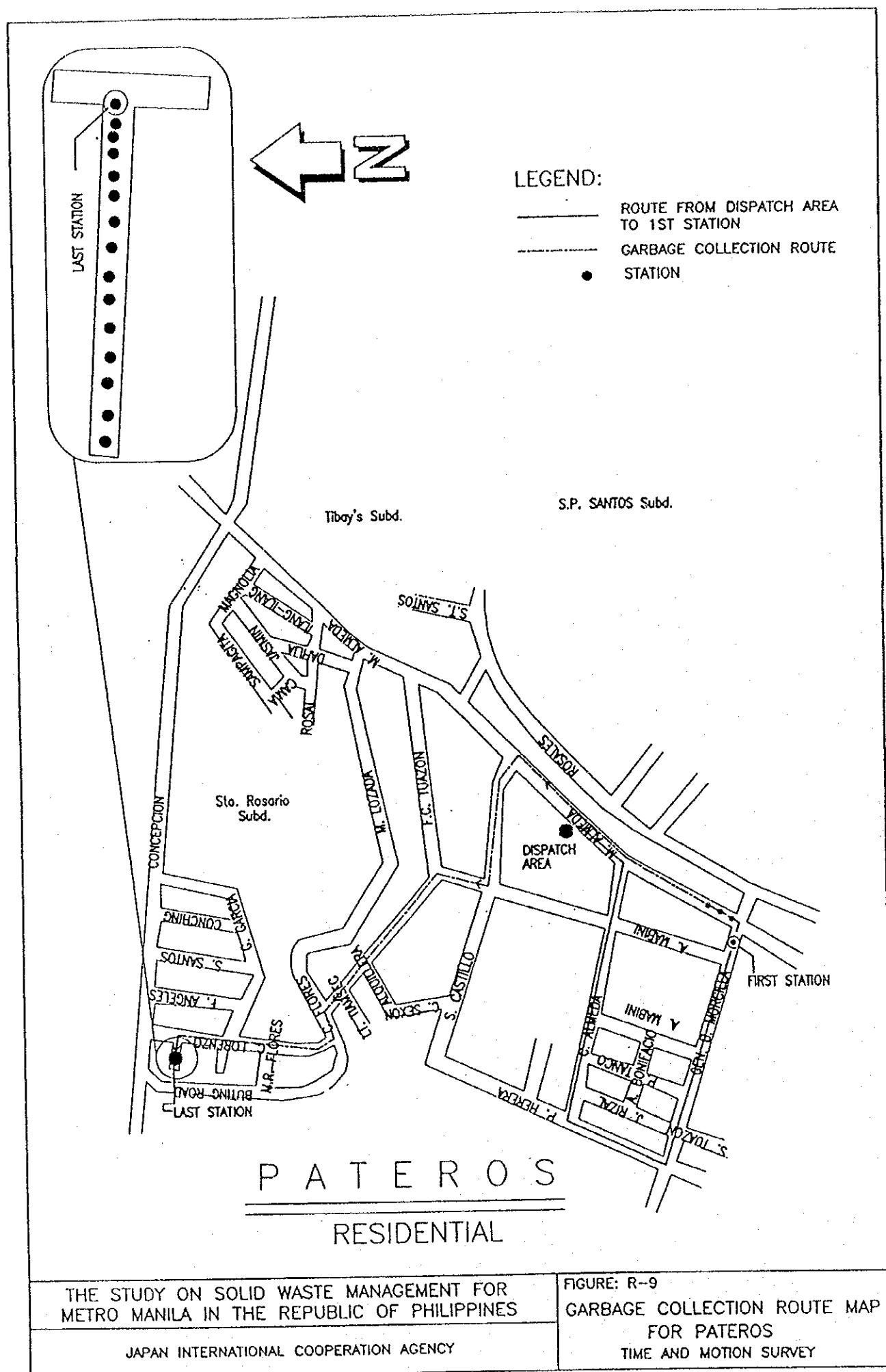
2nd TRIP



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

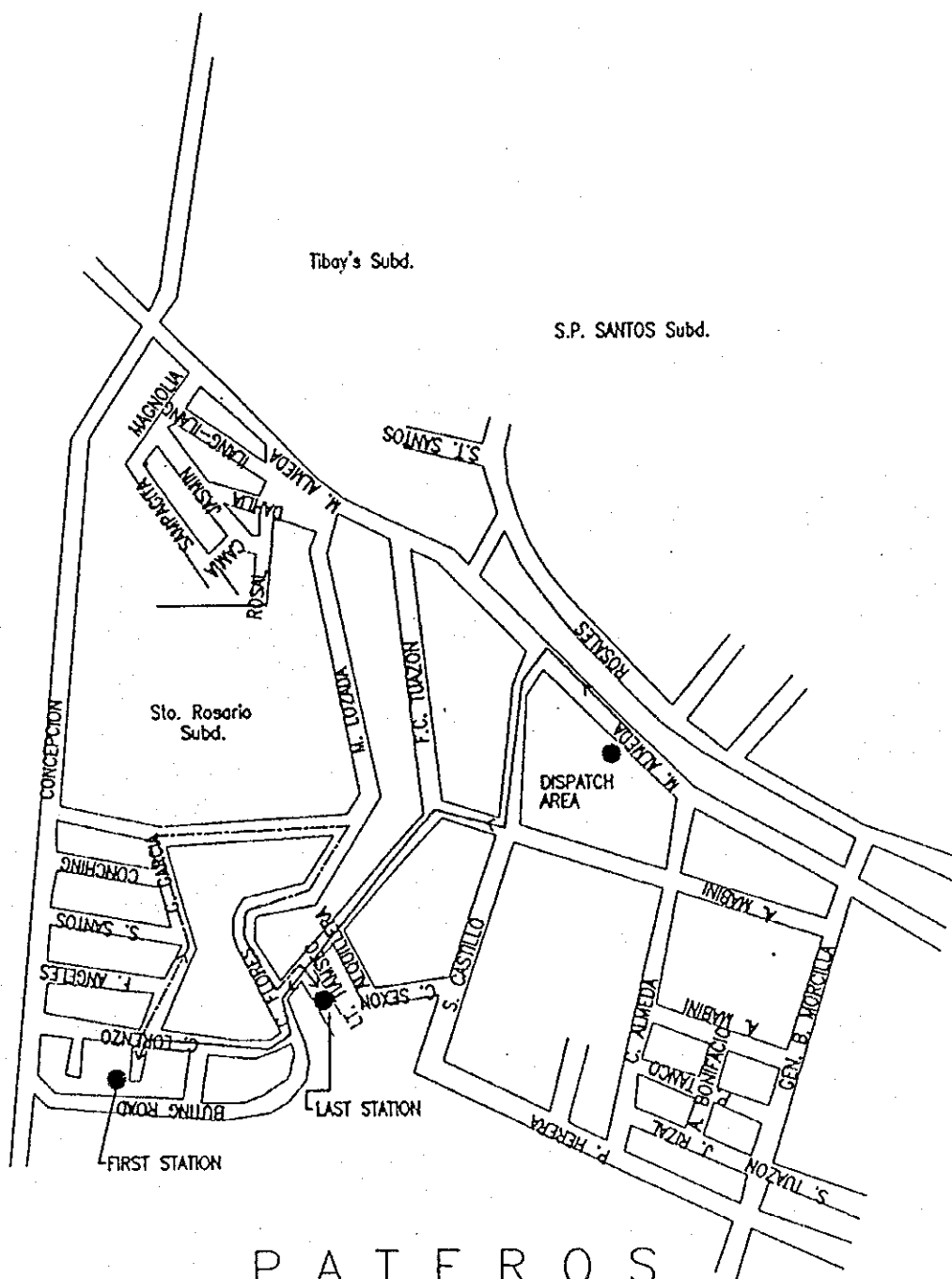
FIGURE: R-8  
GARBAGE COLLECTION ROUTE MAP  
FOR PASIG  
TIME AND MOTION SURVEY





# LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- GARBAGE COLLECTION ROUTE
- STATION



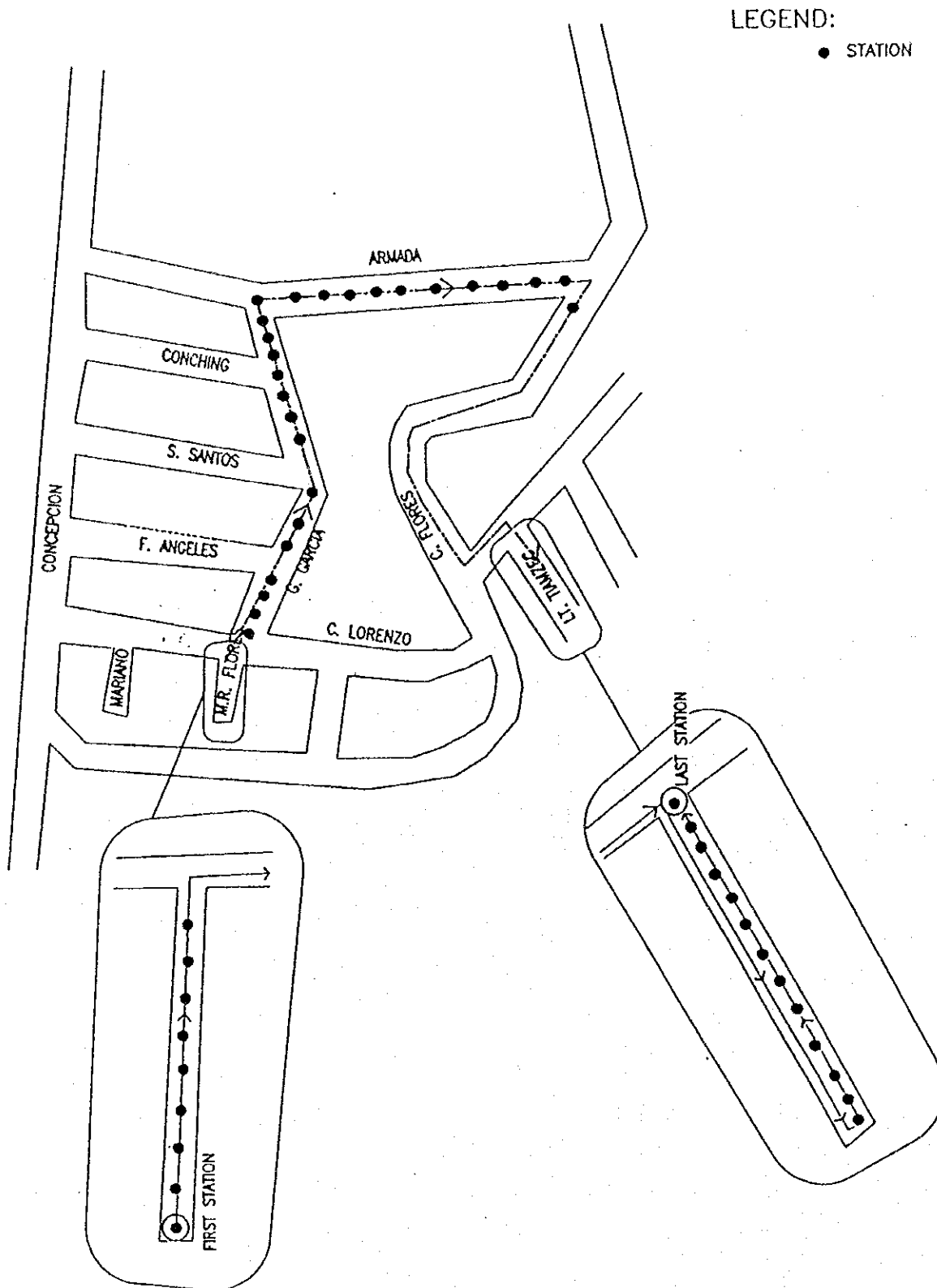
## PATEROS RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-9

GARBAGE COLLECTION ROUTE MAP  
FOR PATEROS  
TIME AND MOTION SURVEY



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-9  
GARBAGE COLLECTION ROUTE MAP  
FOR PATEROS  
TIME AND MOTION SURVEY

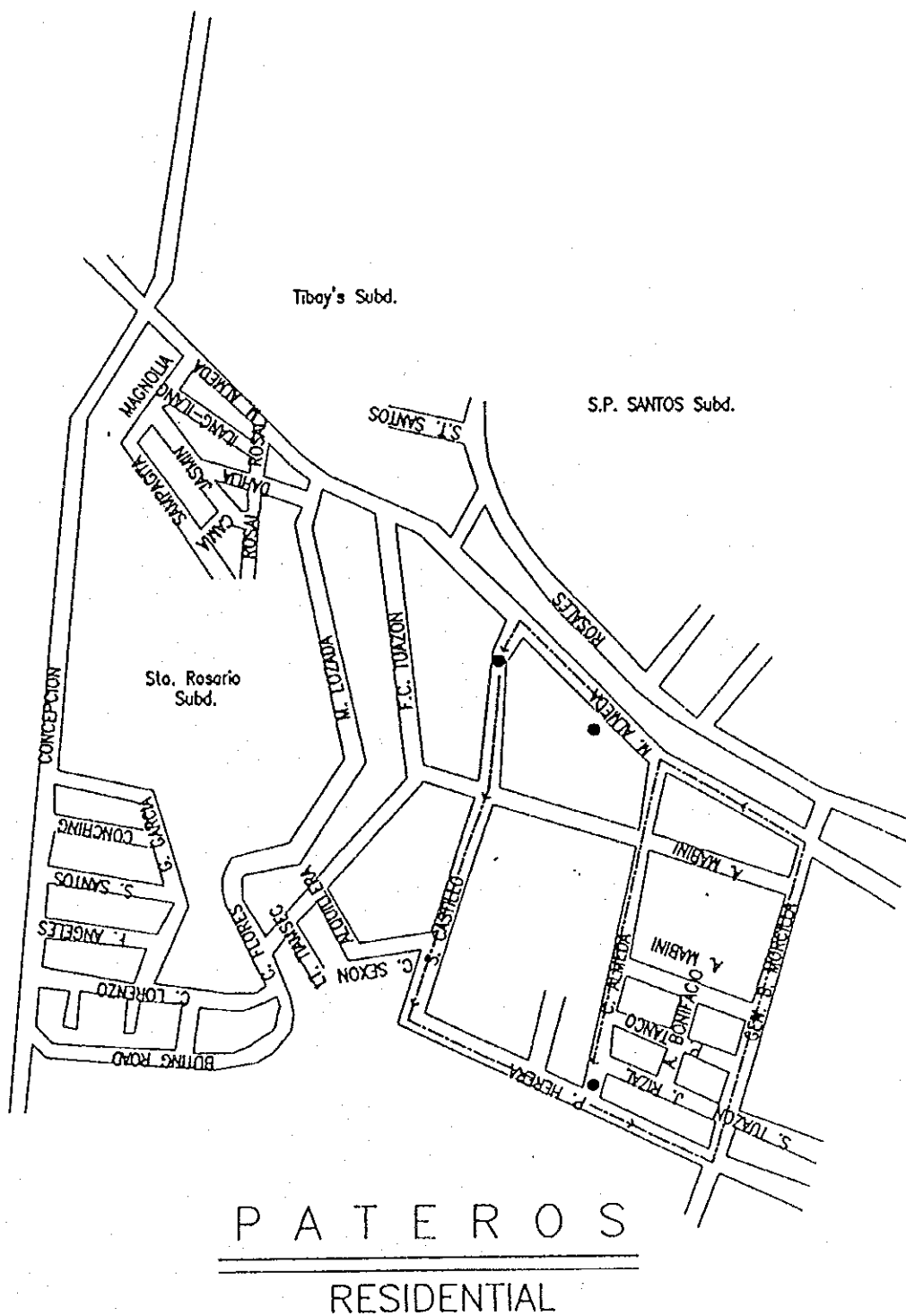


LEGEND:

ROUTE FROM DISPATCH AREA  
TO 1ST STATION

GARBAGE COLLECTION ROUTE

STATION



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

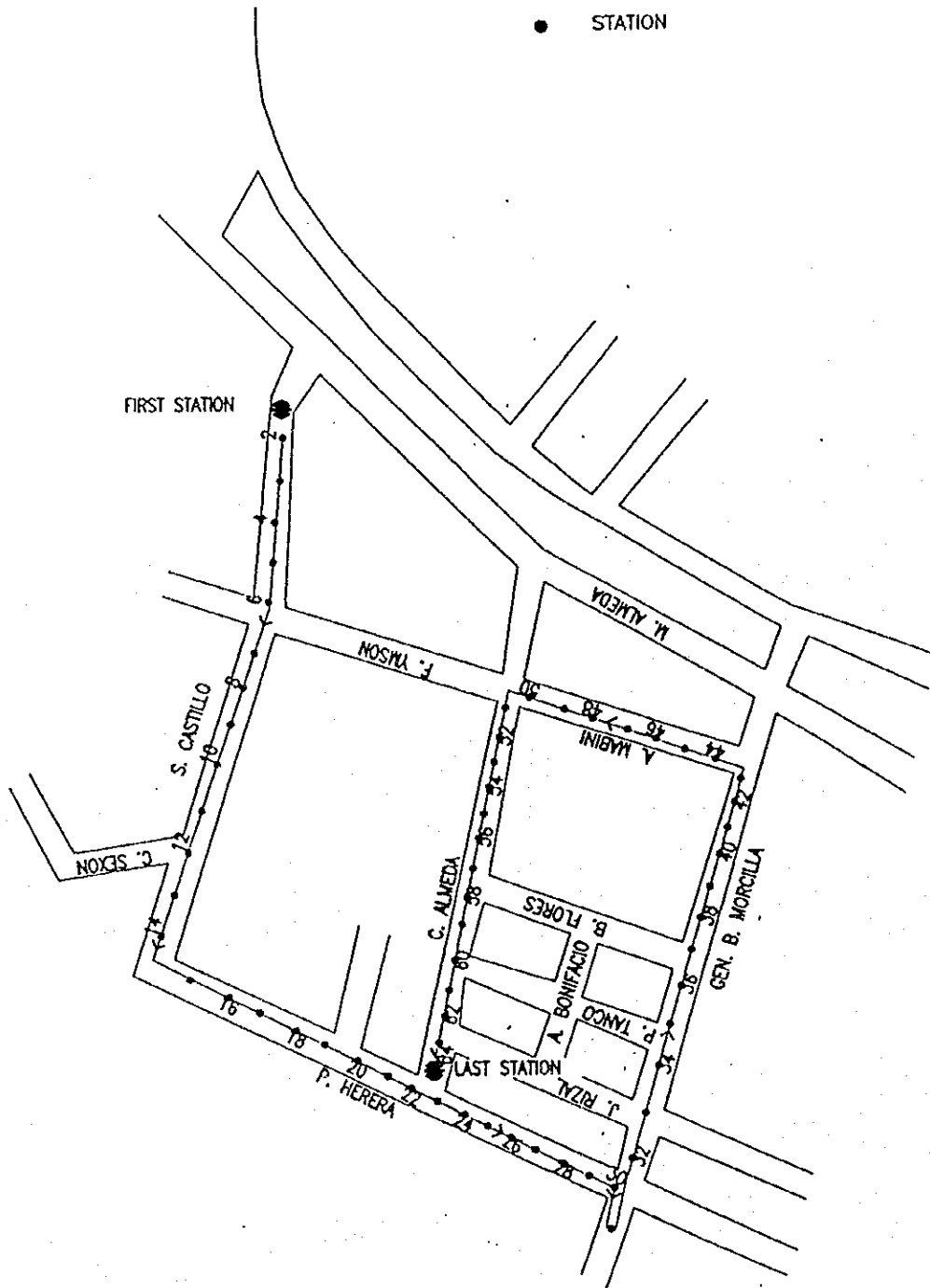
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-9

GARBAGE COLLECTION ROUTE MAP  
FOR PATEROS  
TIME AND MOTION SURVEY

LEGEND:

● STATION



P A T E R O S  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

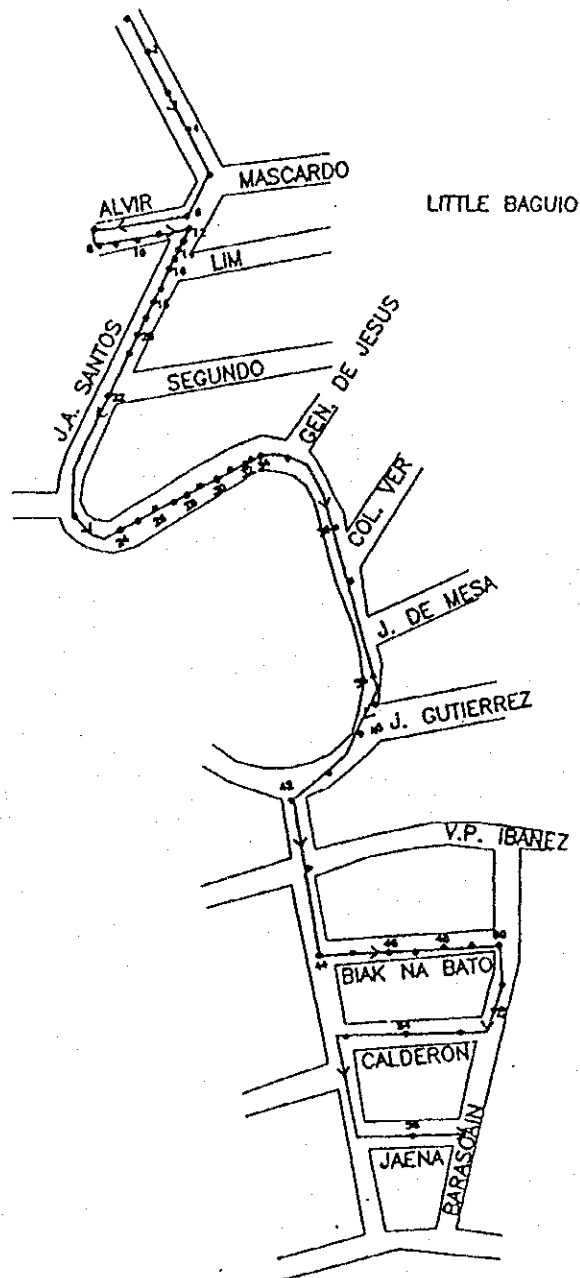
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-9

GARBAGE COLLECTION ROUTE MAP  
FOR PATEROS  
TIME AND MOTION SURVEY

# LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- GARBAGE COLLECTION ROUTE
- STATION



SAN JUAN

GARBAGE COLLECTION ROUTE - 1ST TRIP  
RESIDENTIAL

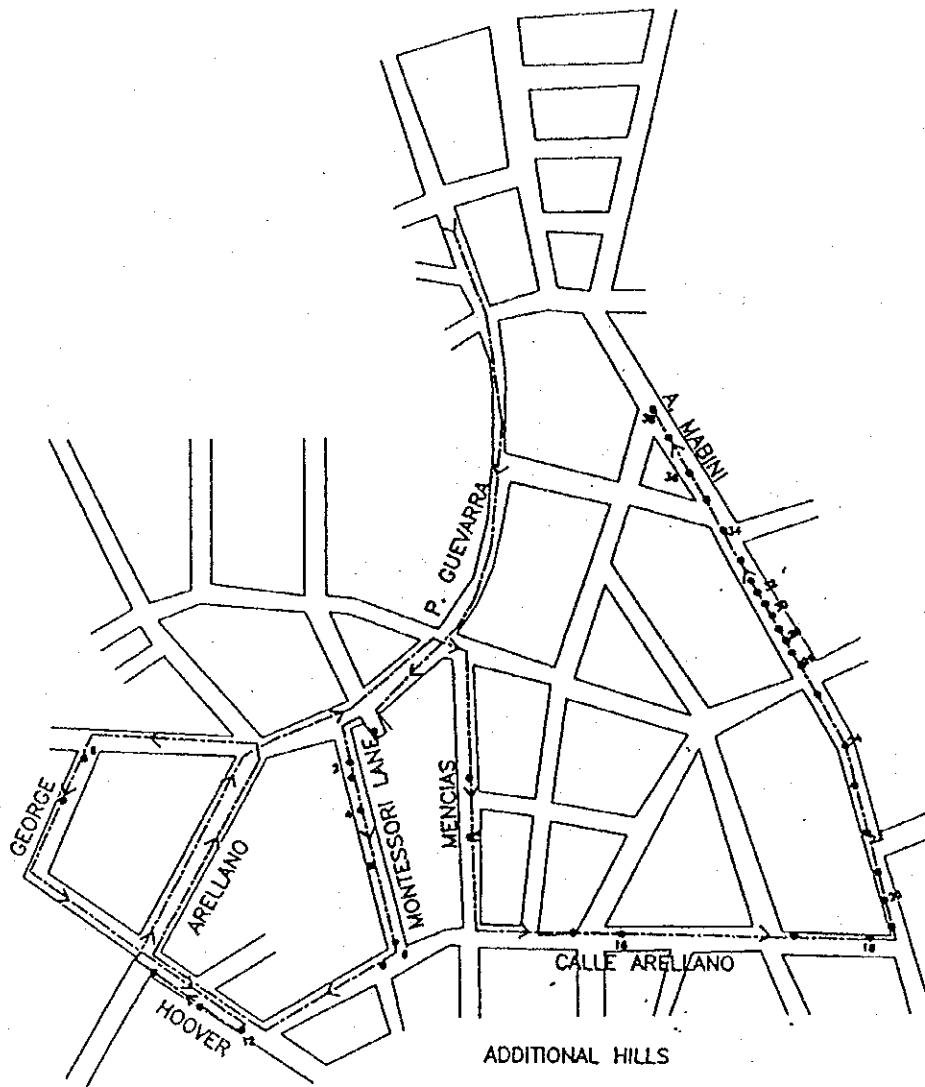
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-10  
GARBAGE COLLECTION ROUTE MAP  
FOR SAN JUAN  
TIME AND MOTION SURVEY

# LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- - - - - GARBAGE COLLECTION ROUTE
- STATION



## SAN JUAN

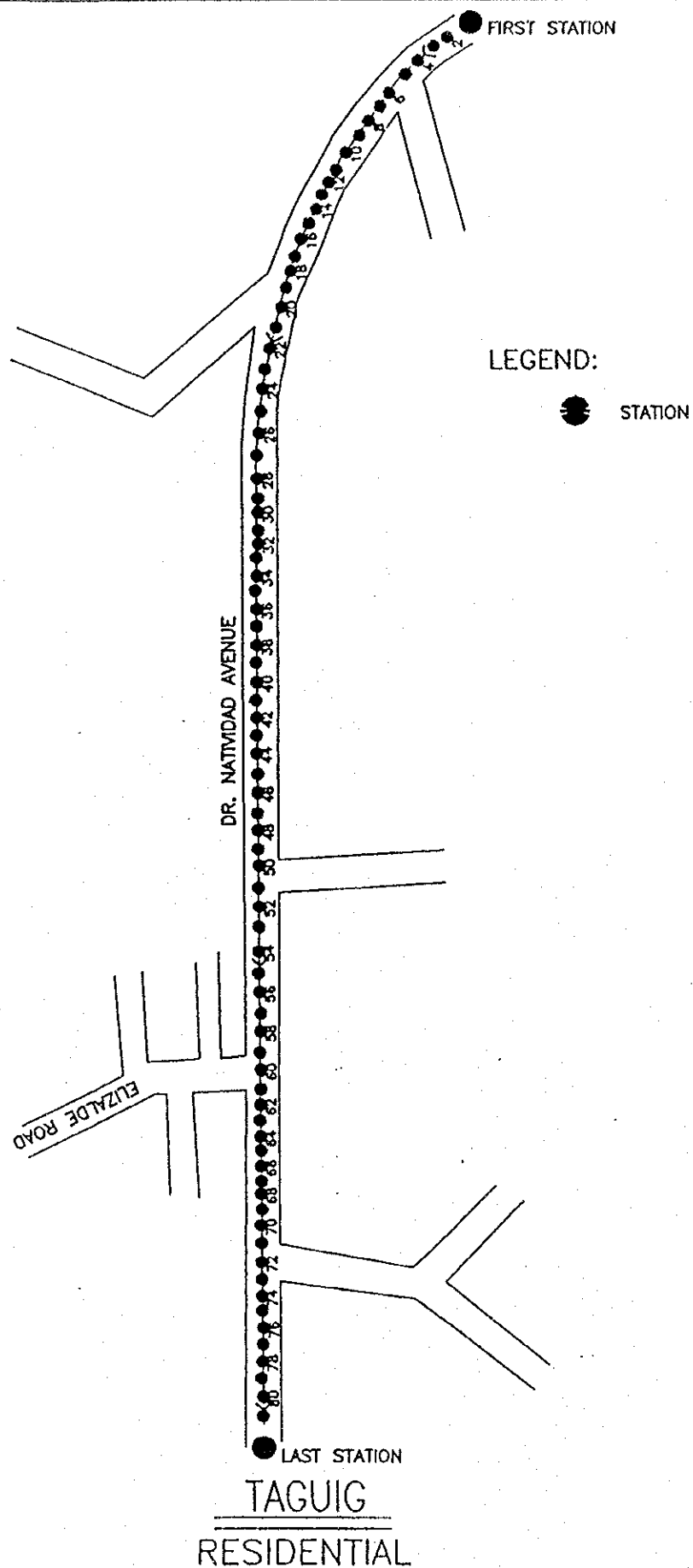
GARBAGE COLLECTION ROUTE - 2ND TRIP  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-10  
GARBAGE COLLECTION ROUTE MAP  
FOR SAN JUAN  
TIME AND MOTION SURVEY





THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

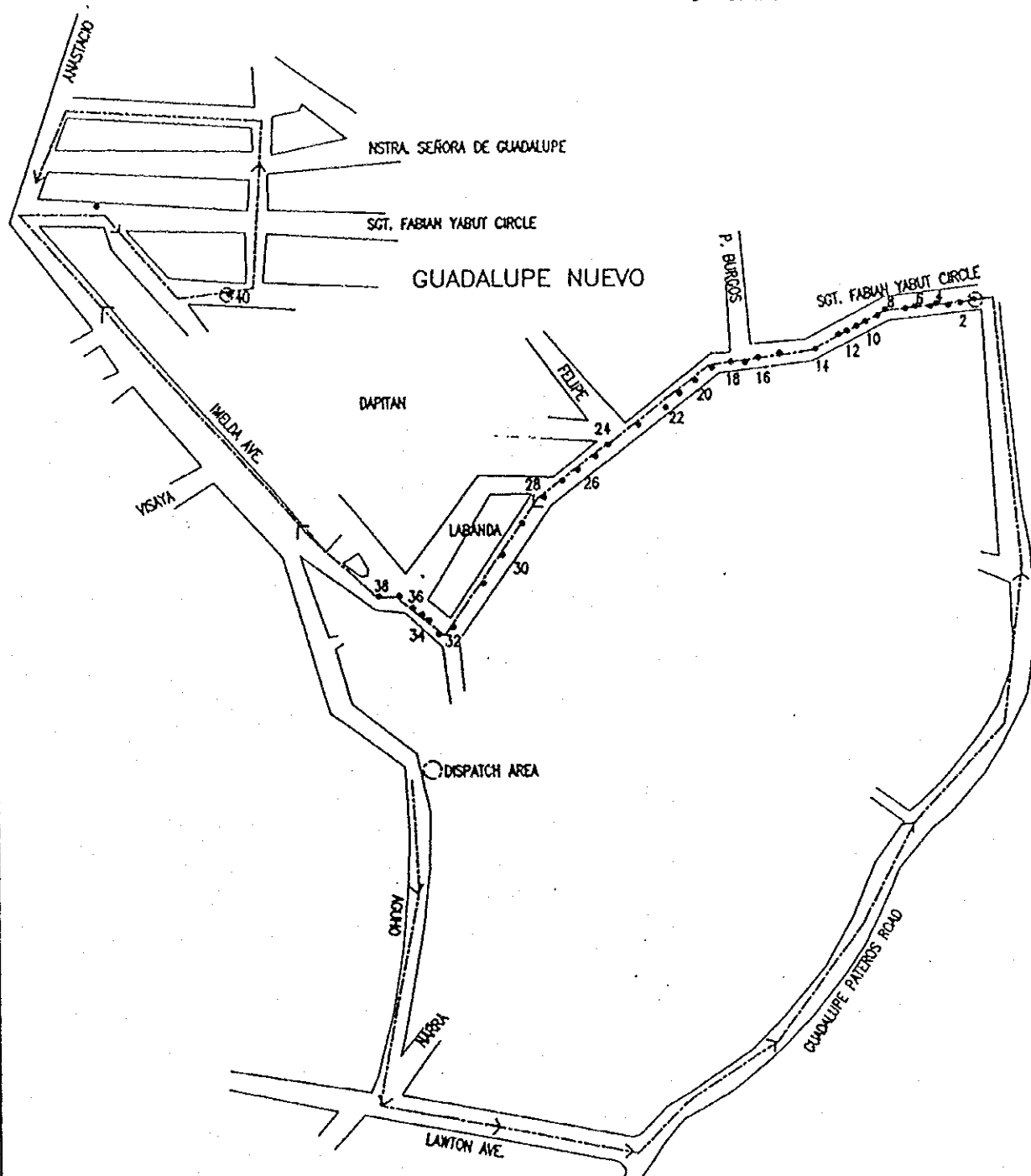
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-11  
GARBAGE COLLECTION ROUTE MAP  
FOR TAGIG  
TIME AND MOTION SURVEY

1st TRIP

LEGEND:

● STATION



MAKATI  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

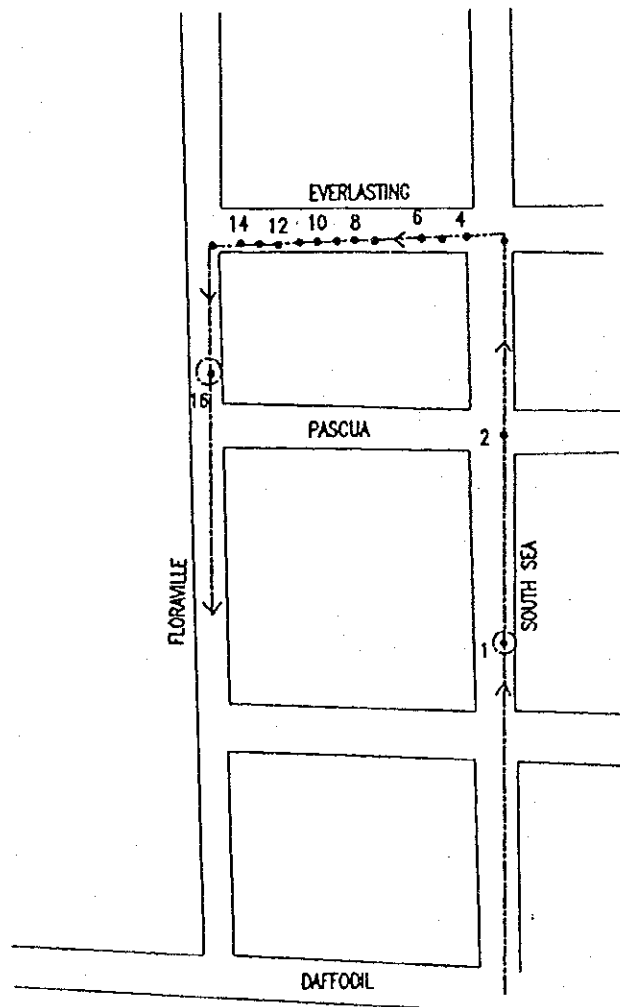
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-12  
GARBAGE COLLECTION ROUTE MAP  
FOR MAKATI  
TIME AND MOTION SURVEY

2nd TRIP

LEGEND:

● STATION



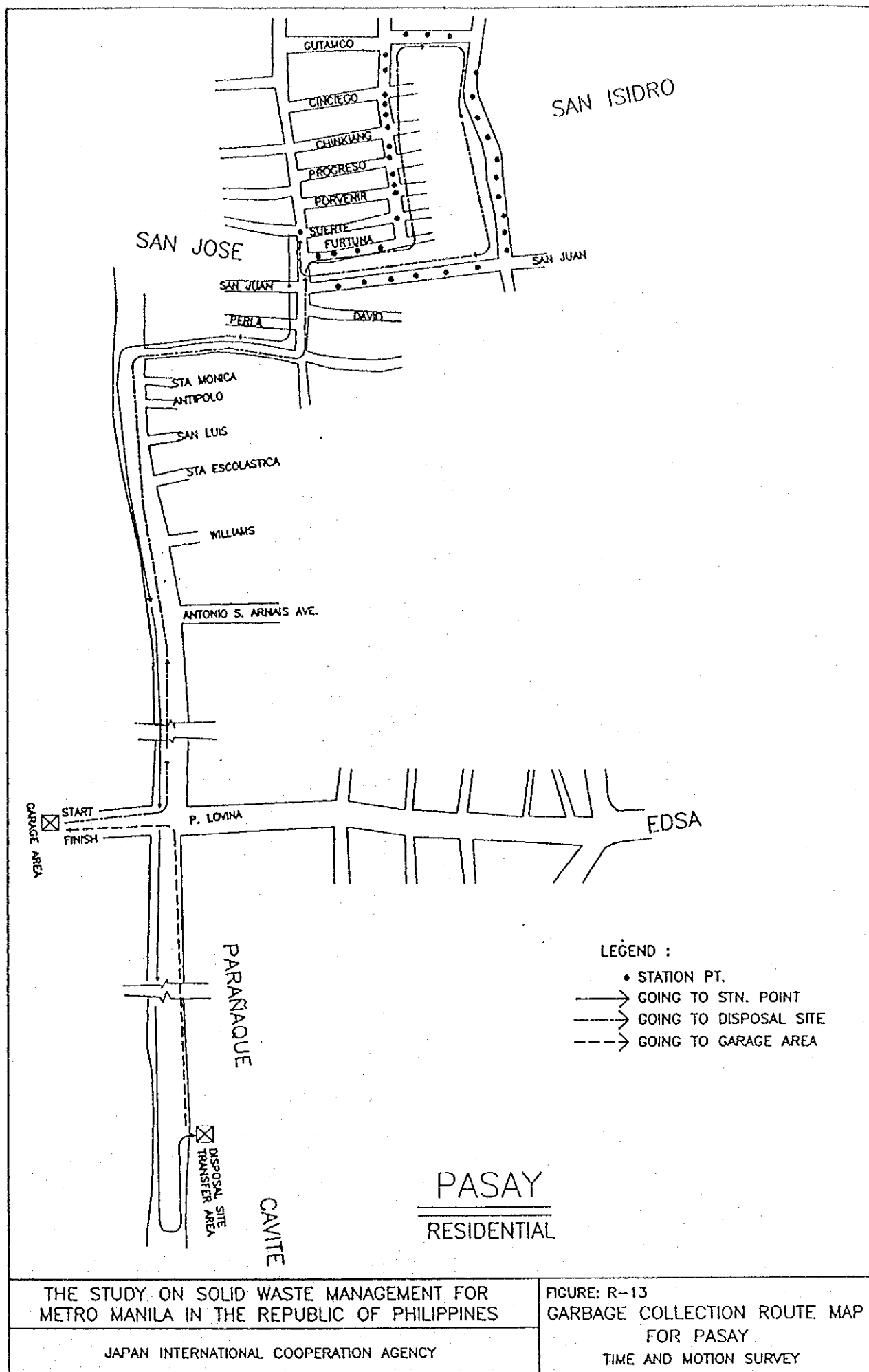
MAKATI  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-12  
GARBAGE COLLECTION ROUTE MAP  
FOR MAKATI  
TIME AND MOTION SURVEY



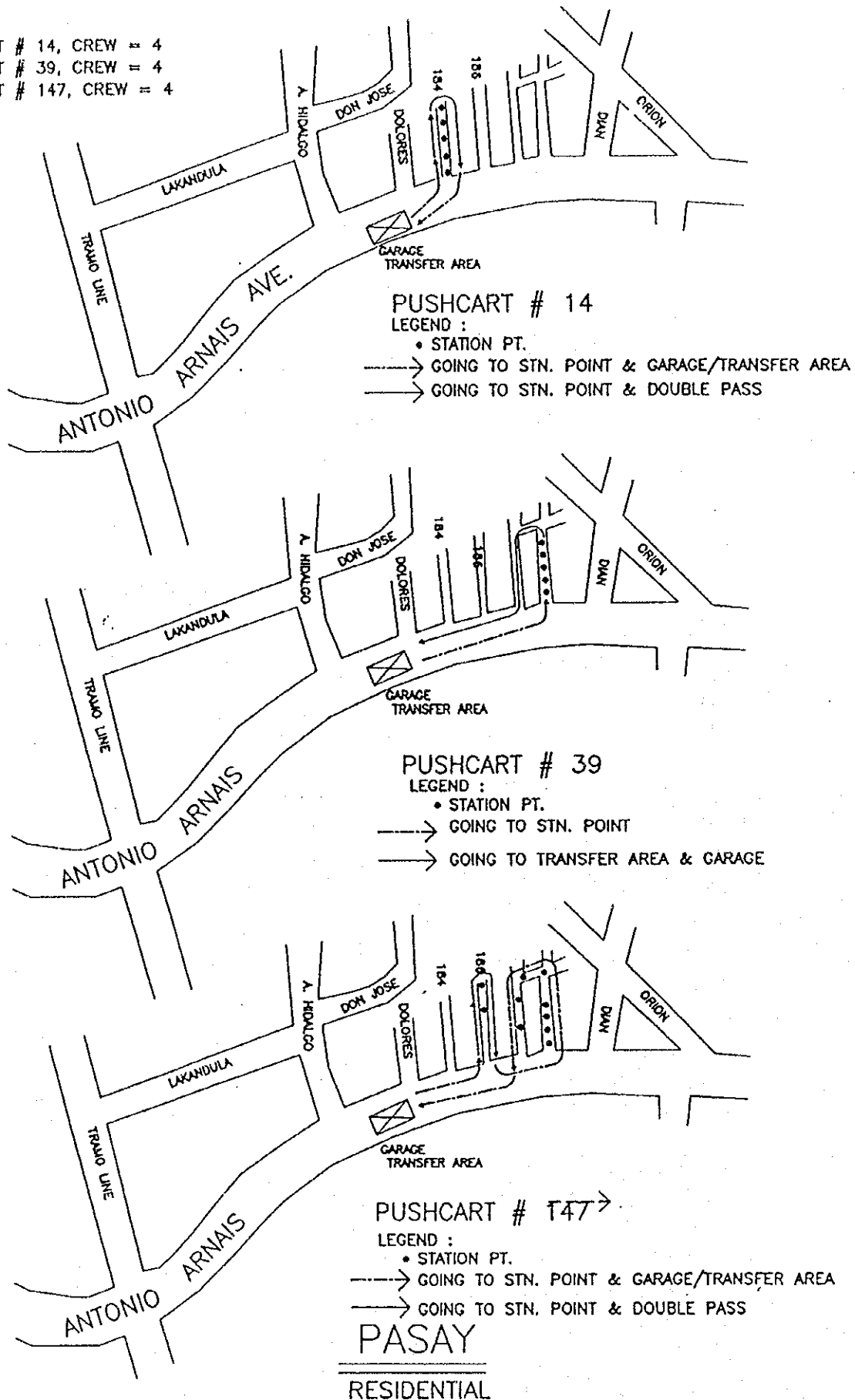


NOTE:

PUSHCART # 14, CREW = 4

PUSHCART # 39, CREW = 4

PUSHCART # 147, CREW = 4



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
 METRO MANILA IN THE REPUBLIC OF PHILIPPINES

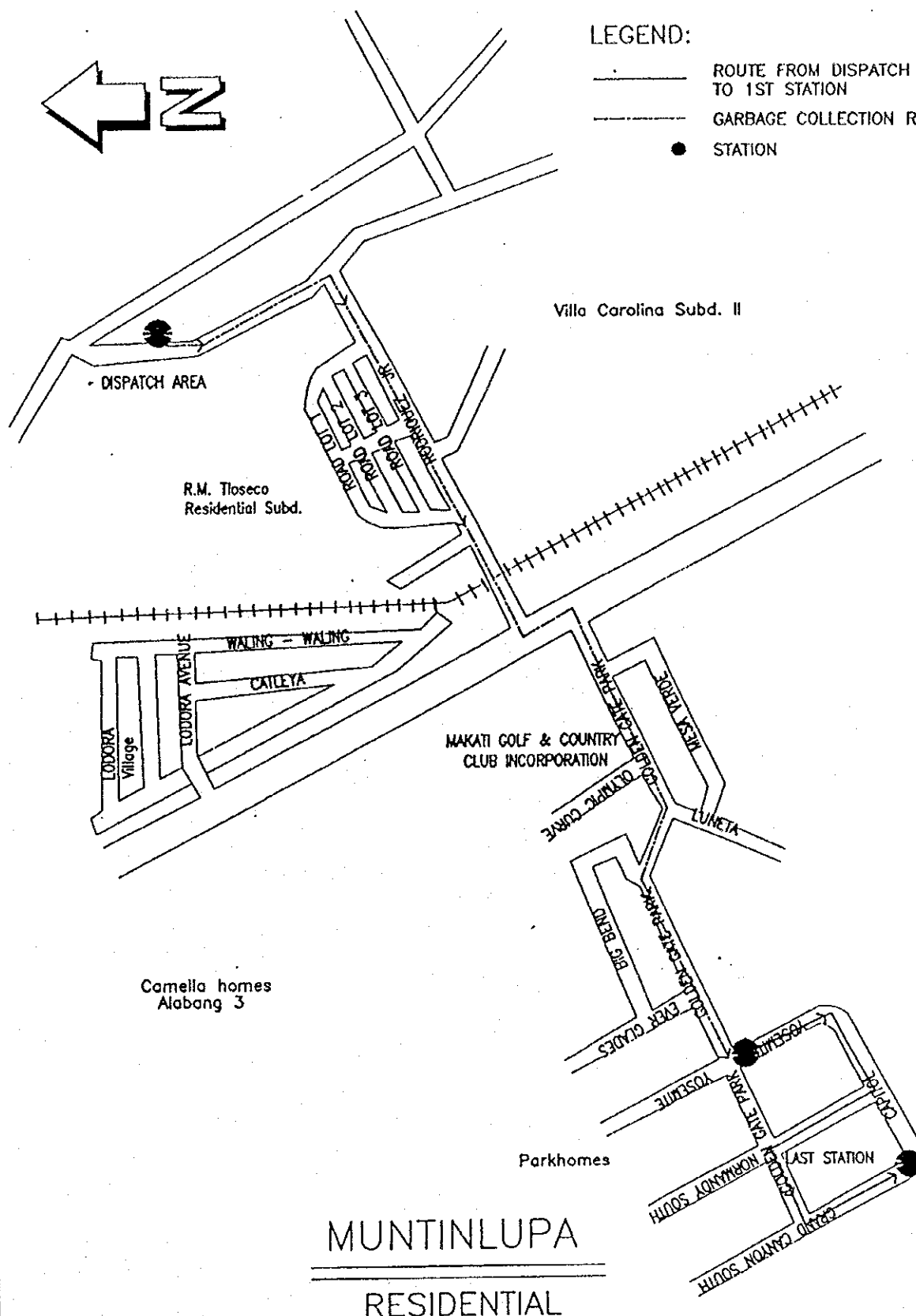
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-13  
 GARBAGE COLLECTION ROUTE MAP  
 FOR PASAY  
 TIME AND MOTION SURVEY



# LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- - - GARBAGE COLLECTION ROUTE
- STATION



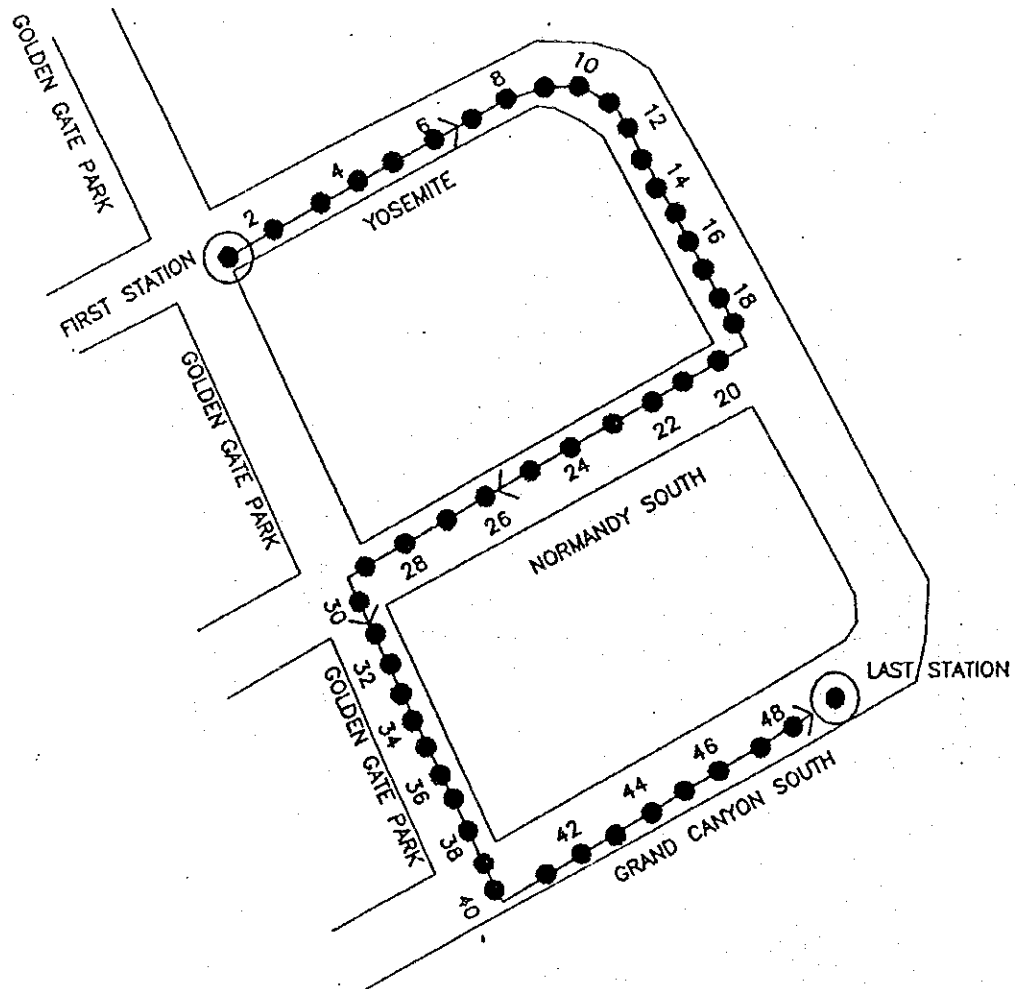
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-14  
GARBAGE COLLECTION ROUTE MAP  
FOR MUNTINLUPA  
TIME AND MOTION SURVEY

LEGEND:

- ROUTE FROM DISPATCH AREA TO 1ST STATION
- GARBAGE COLLECTION ROUTE
- STATION



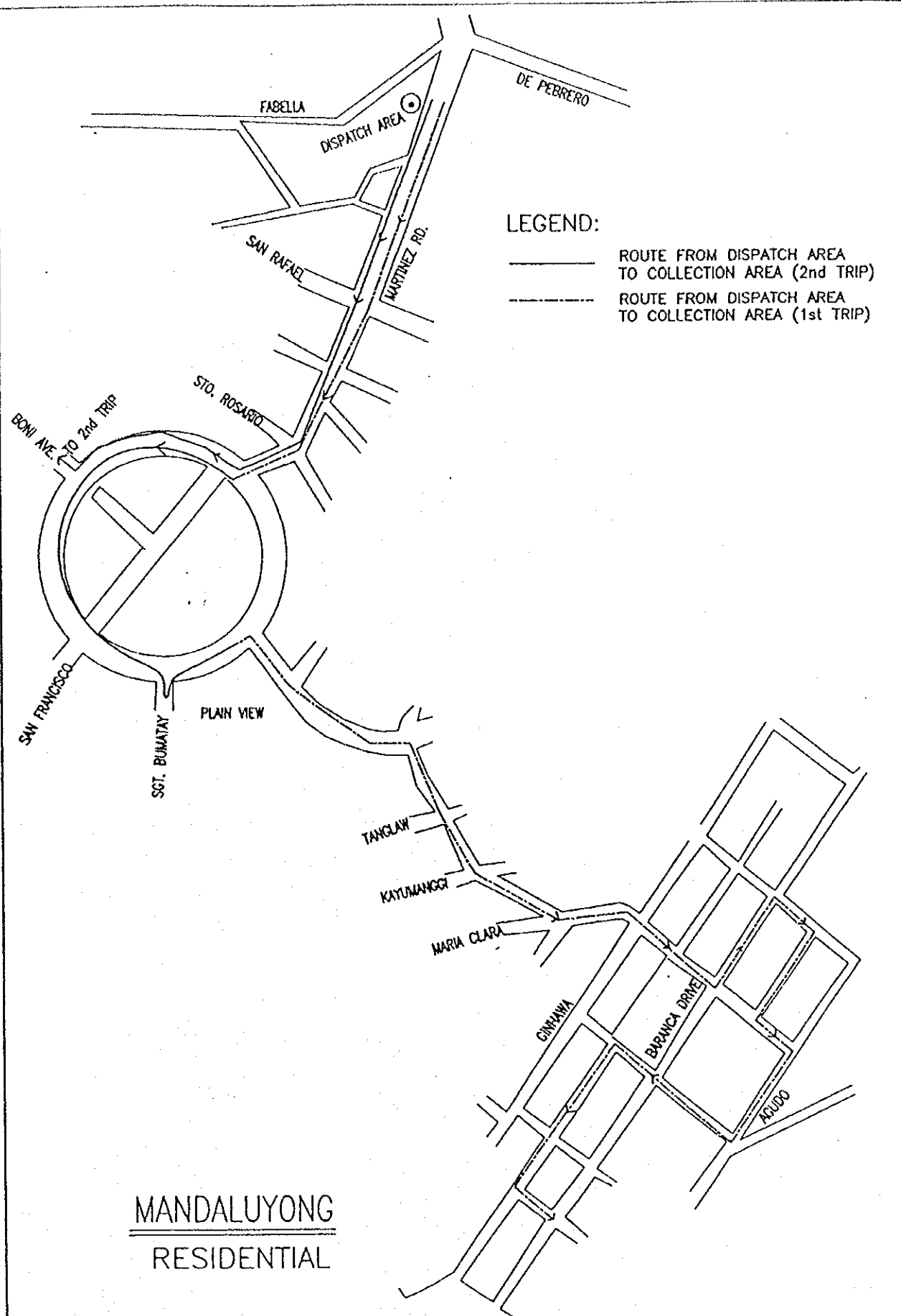
MUNTINLUPA

RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-14  
GARBAGE COLLECTION ROUTE MAP  
FOR MUNTINLUPA  
TIME AND MOTION SURVEY



THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

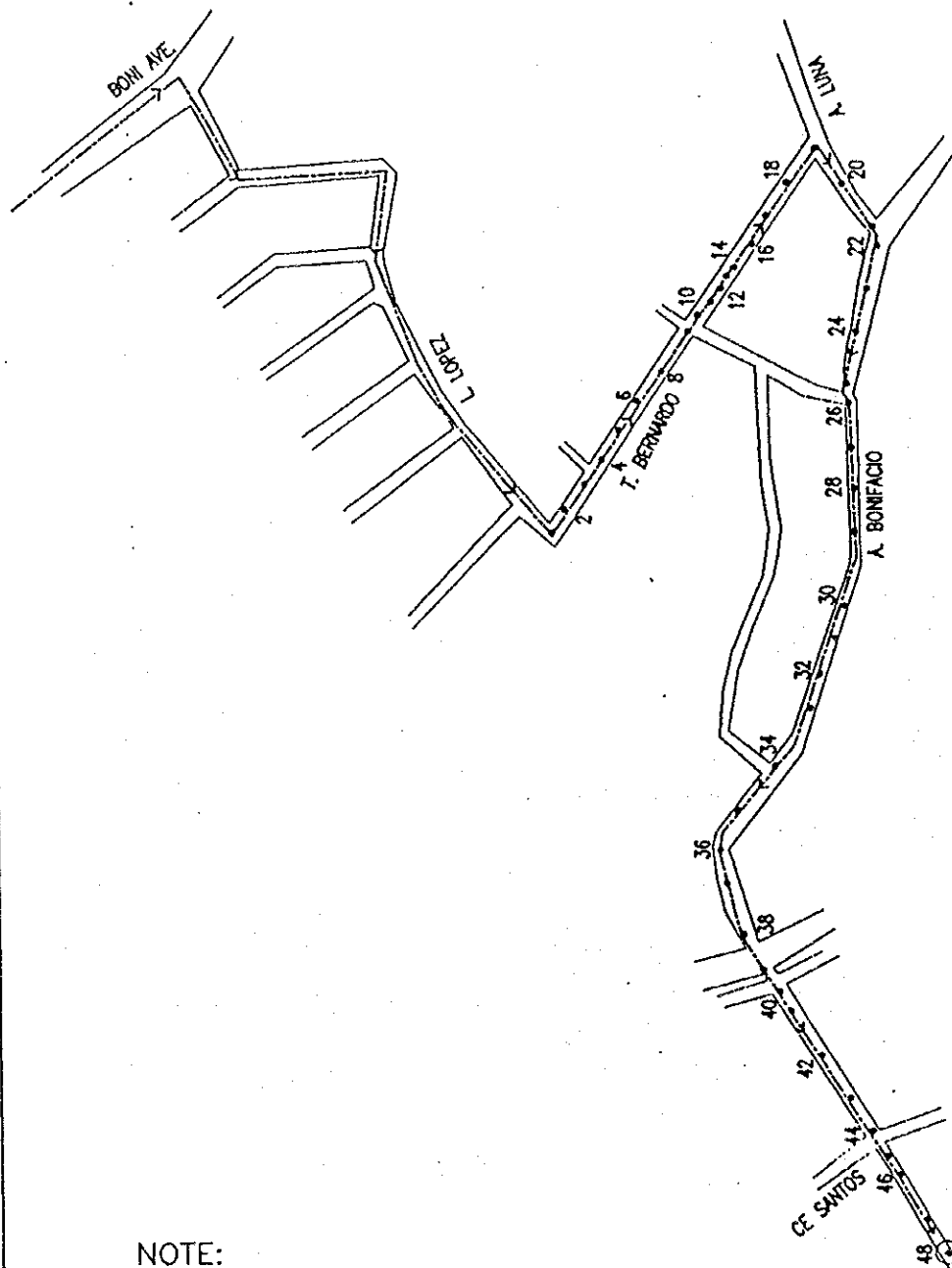
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-15  
GARBAGE COLLECTION ROUTE MAP  
FOR MANDALUYONG  
TIME AND MOTION SURVEY

1st TRIP

LEGEND:

● STATION



NOTE:

FIRST STATION AT PLAIN VIEW GAS  
STATION SEE SECOND TRIP

## MANDALUYONG RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

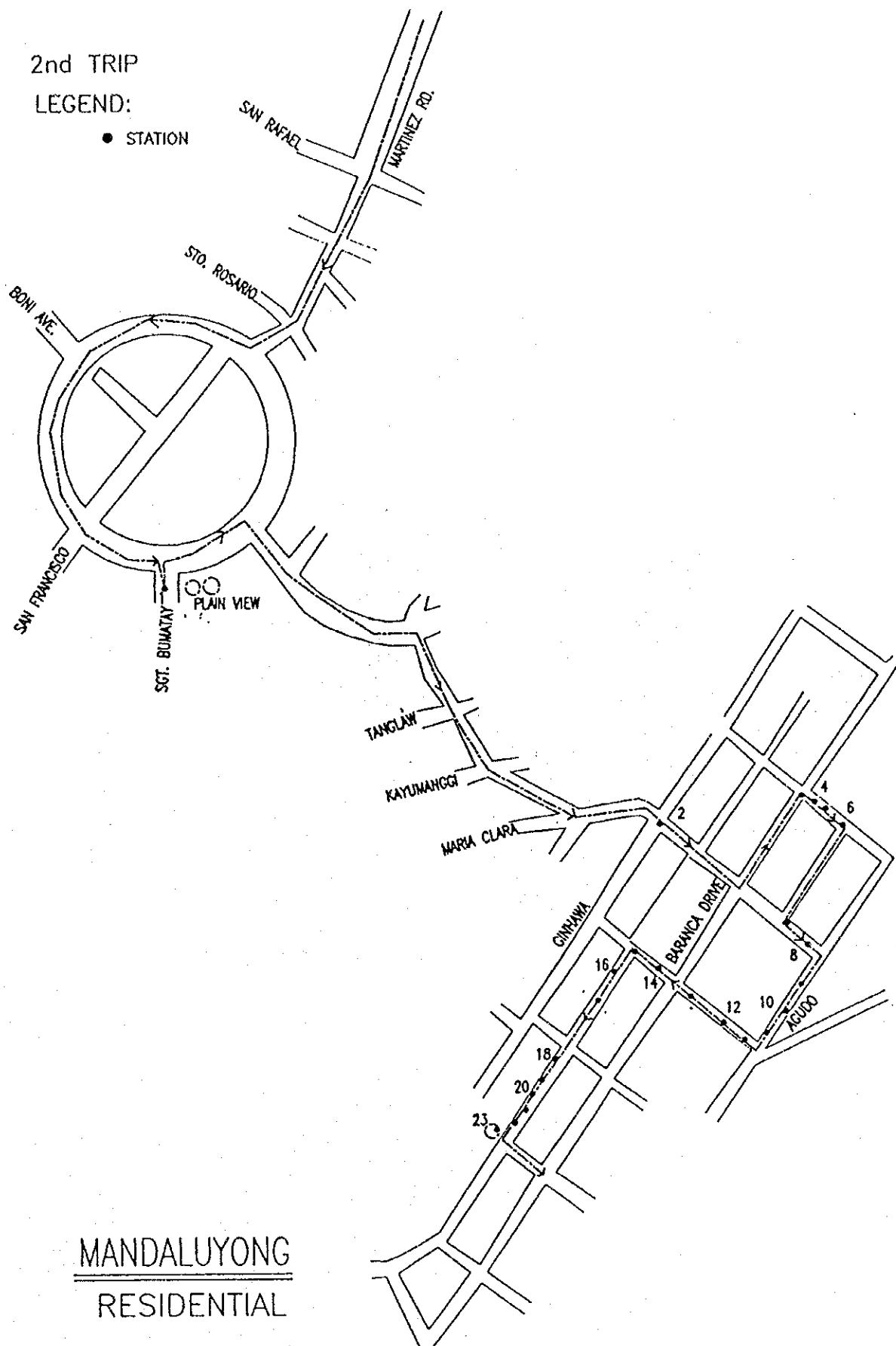
JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-15  
GARBAGE COLLECTION ROUTE MAP  
FOR MANDALUYONG  
TIME AND MOTION SURVEY

2nd TRIP

LEGEND:

● STATION



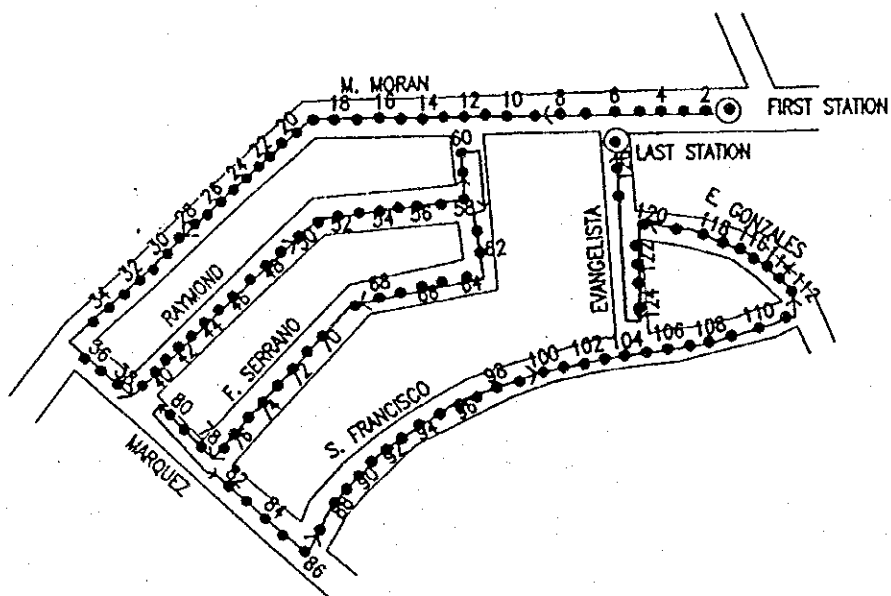
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-15  
GARBAGE COLLECTION ROUTE MAP  
FOR MANDALUYONG  
TIME AND MOTION SURVEY

LEGEND:

● STATION



# LAS PIÑAS

GARBAGE COLLECTION ROUTE - 1ST TRIP  
RESIDENTIAL

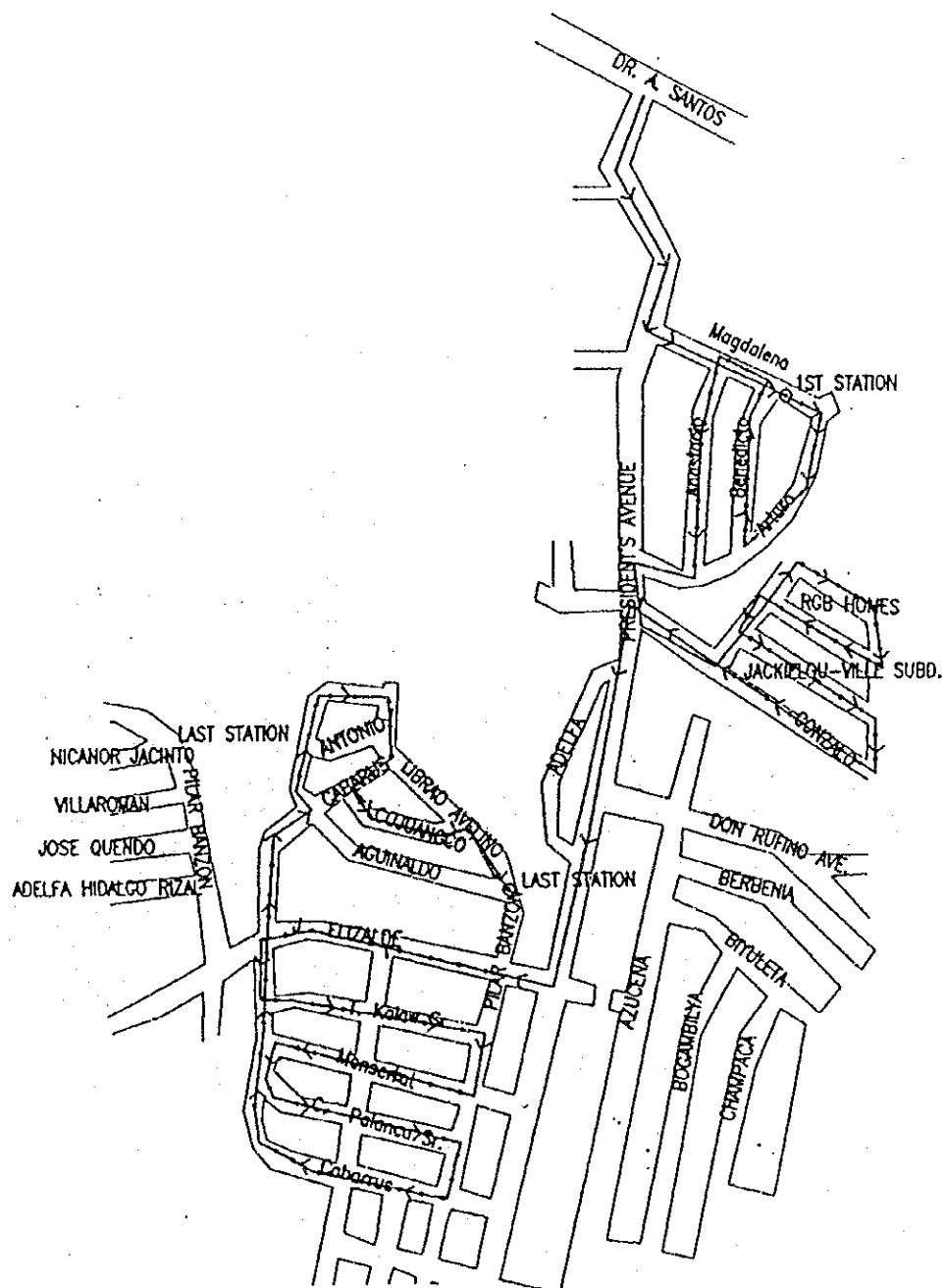
THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-17  
GARBAGE COLLECTION ROUTE MAP  
FOR LAS PIÑAS  
TIME AND MOTION SURVEY



— GARBAGE COLLECTION ROUTE  
● STATION

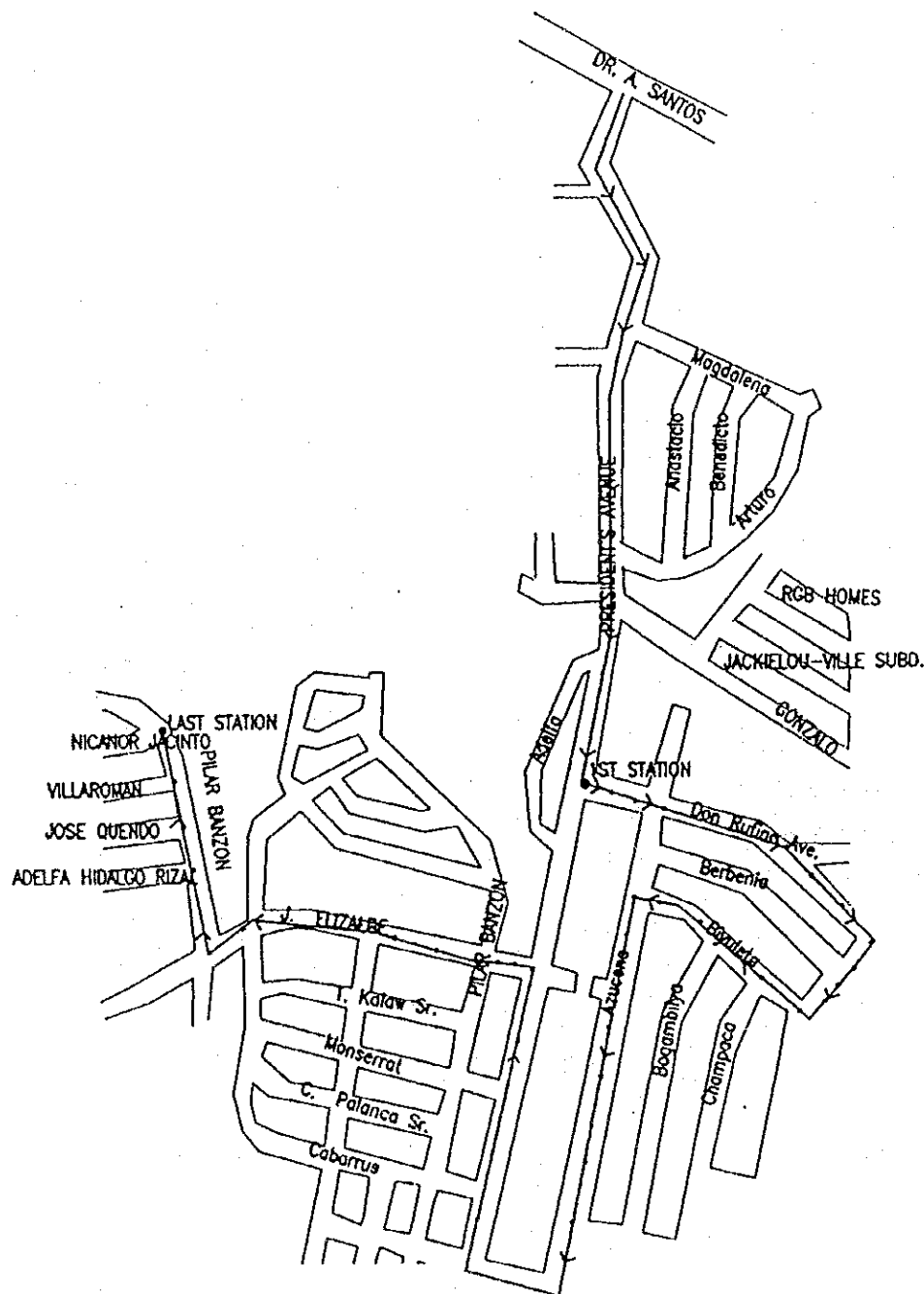


GARBAGE COLLECTION ROUTE - 2ND TRIP  
RESIDENTIAL

FIGURE: R-16  
GARBAGE COLLECTION ROUTE MAP  
FOR PARANAQUE  
TIME AND MOTION SURVEY

# LEGEND:

- GARBAGE COLLECTION ROUTE
- STATION



## PARAÑAQUE

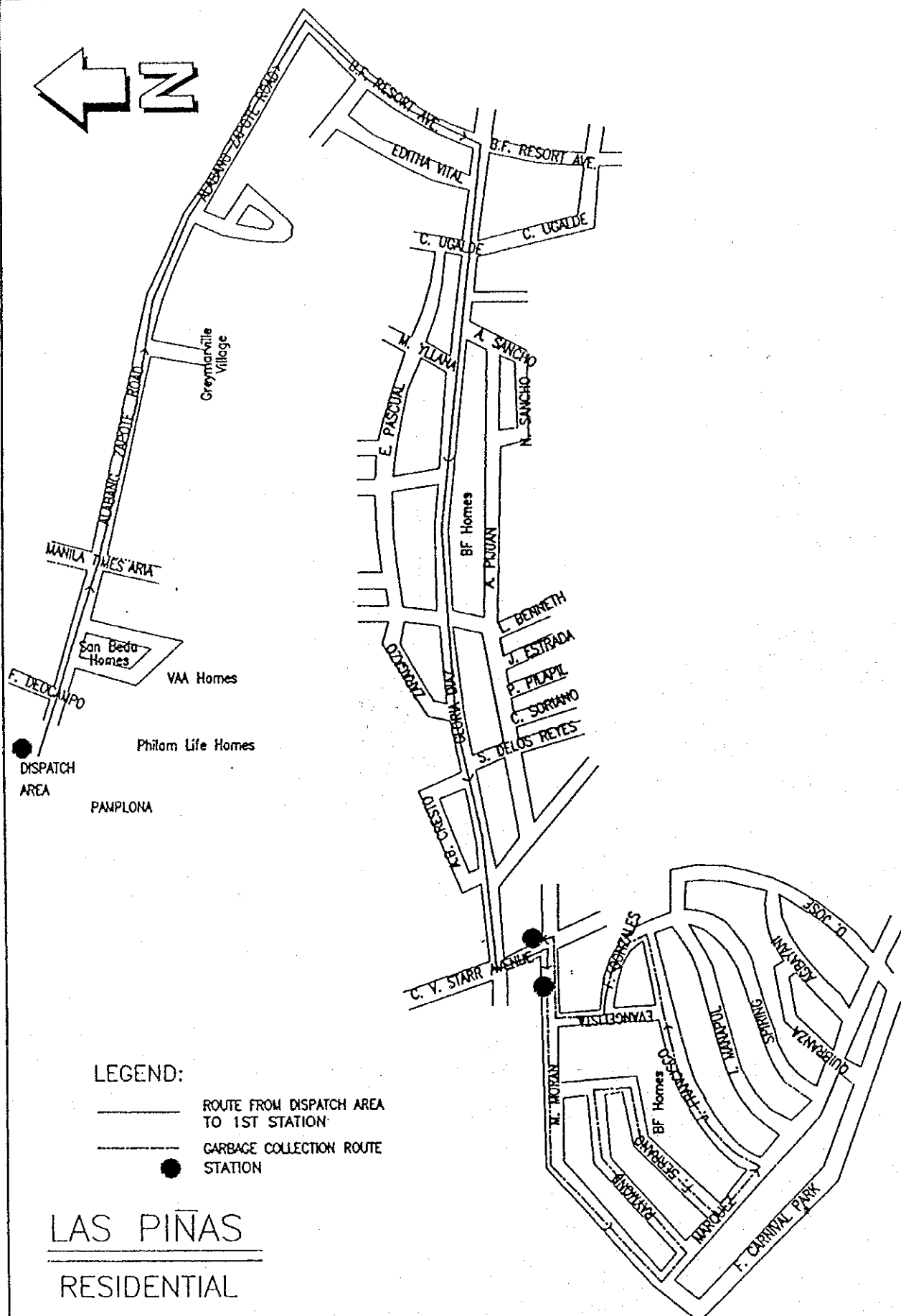
GARBAGE COLLECTION ROUTE - 1ST TRIP  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-16  
GARBAGE COLLECTION ROUTE MAP  
FOR PARAÑAQUE  
TIME AND MOTION SURVEY



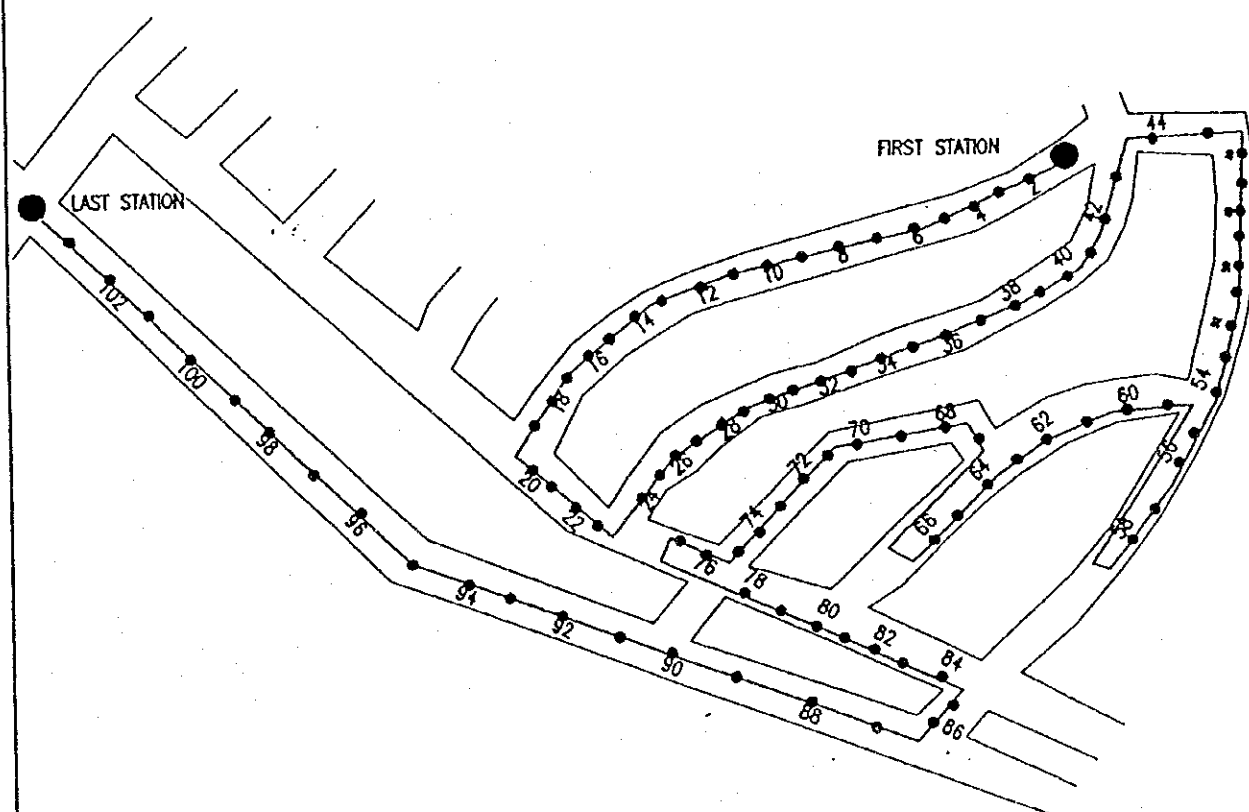


THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

LEGEND:

● STATION



# LAS PIÑAS

GARBAGE COLLECTION ROUTE - 1ST TRIP  
RESIDENTIAL

THE STUDY ON SOLID WASTE MANAGEMENT FOR  
METRO MANILA IN THE REPUBLIC OF PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE: R-17  
GARBAGE COLLECTION ROUTE MAP  
FOR LAS PIÑAS  
TIME AND MOTION SURVEY

## **CHAPTER 7**

### **HOSPITAL WASTE SURVEY**

## **7. HOSPITAL WASTE**

### **7.1. General**

Waste generation is a constituent of every day life that should never be taken for granted. It is common knowledge that all human activities generate excess materials that are of less economic value or of no value at all. These unwanted by-products may create nuisance or be hazardous to the environment and human health if not properly managed.

Hospitals and other health care facilities that are operated to protect and maintain public health are not exempt from this. In fact, there is a growing awareness of the need to enforce stringent control over the disposal of waste generated by hospitals and other health care institutions. This is mainly due to the fact that certain categories of waste from these institutions are among the most hazardous and potentially dangerous of all waste generated in the community.

Similarly, as the volume and complexity of health care waste increase, the risk of transmitting diseases through improper handling, transport and disposal also increases. The increasing incidence of HIV-AIDS and Hepatitis B in the Philippines opens up the possibility of infecting persons handling these waste.

In the preparation of the Metro Manila Solid Waste Management Plan (1988-1992), a special study on hospital waste was incorporated. This study was conducted by DOH in 1988 and covered 64 government and private hospitals in the Metropolitan Manila area. The study was conducted to determine the types of waste generated by hospitals, the specific sources, and the collection and disposal practices.

Other studies have shown that the majority of the hospitals have inadequate disposal methods for clinical wastes. On the basis of this concern, a hospital waste management survey was included in the MMDA-JICA study on the status of solid waste management practices in Metro Manila.

### **7.2 Laws, Legislation, Licensing and Other Relevant Regulations**

Through the Metro Manila Council, the MMDA Ordinance No. 16 was issued. The ordinance pertains to the regulation of the management, collection and disposal of hospital waste and those of similar institutions in Metropolitan Manila. It provides guidelines on proper storage, collection and disposal of hospital wastes. Penalties and fines for the violation of this ordinance was also set.

The Bureau of Licensing and Regulation/Department of Health is responsible for enforcing Republic Act 4226, series of 1965, also known as the Hospital Licensing Law. Its Implementing Rules and Regulations (Administrative Order No. 68-A, series of 1989) provide guidelines to protect and promote public health by ensuring quality hospital services appropriate to its level of health care. Specific sections of the IRR are detailed below:

*Section 11.2.6 and Sec. 11.3.6 (Engineering, Maintenance and Housekeeping Services):*

There shall be an engineering service which shall provide maintenance of facilities and equipment of the buildings and grounds as well as maintain the cleanliness and sanitation of their physical plant and environment.

*Section 12.1 (Physical Plant)*

Specific to waste management is the inclusion in the submission of final plans of the proposed system for garbage and refuse disposal.

*Section 12.2.1 (A sub-section of Safety and Sanitation (Sec 12.2))*

Facilities for the maintenance of sanitary standards, including approved water supply and sewerage system, shall be provided throughout the hospital buildings and premises to insure cleanliness.

The DOH Department Circular No. 152-C, series of 1993, directs all Directors and Chiefs of hospitals, clinics, laboratories and research offices to promote a healthy environment by following the guidelines set in this circular on waste segregation, collection, treatment and disposal.

On 19 October 1993, the President issued a memorandum to the Secretary of Health directing the Department of Health to implement guidelines on hospital waste management, and operationalize the solid waste management plan for all hospitals.

### **7.3 Objectives**

The purpose of this assignment is to gather baseline information on the quantity of infectious and hazardous waste by sampling survey, and the current waste management practices in Metro Manila, which was surveyed by DOH in 1997.

### **7.4 Methodologies**

#### **7.4.1 DOH Survey**

Sometime in March 1997, the Department of Health, through the Environmental Health Service (EHS), assessed the waste management practices of all hospitals in Metro Manila. The bulk of information as to waste management practices was taken during interviews with personnel in-charge on waste management. The study covered about 158 hospitals. The following are the categories of hospitals surveyed per DOH Administrative Order no. 68-A, series of 1989:

- *Tertiary Hospitals* - Those that are fully departmentalized and equipped with service capabilities needed to support certified medical specialists and other licensed physicians rendering services in the field of medicine, pediatrics, obstetrics and gynecology, surgery, their sub-specialties and ancillary services.



- *Secondary Hospitals* - Those that are equipped with service capabilities needed to support licensed physicians, rendering services in the field of medicine, pediatrics, obstetrics and gynecology, general surgery, and other ancillary services.
- *Primary Hospitals* - Those that are equipped with service capabilities needed to support licensed physicians rendering services in medicine, obstetrics and minor surgery.

List of hospitals surveyed and their categories is attached as annexed to the report.

#### **7.4.2 Infectious and Hazardous Waste Sampling Survey**

The survey covered fifty two (52) or about thirty (30%) percent of all hospitals in Metro Manila. These include a combination of tertiary, secondary and primary hospitals. The maximum number of samples to ensure statistical significance (e.g., 30 %) was used to come up with valid conclusions and generalizations.

Primary data were collected by actual weighing and measurement of solid waste generated in the study hospitals. Actual weighing of infectious and hazardous waste and measurement of general waste were conducted every day for seven days to consider the probable daily variation in hospital waste generation. This was reinforced by interviews of key personnel in the hospitals and ocular inspection of wards and temporary storage areas.

### **7.5 Results**

#### **7.5.1 Hospital Waste Management System (DOH survey)**

Results of the Department of Health's survey on waste management and practices of all the hospitals in Metro Manila are outlined in succeeding paragraphs. Summary of status of waste management practices of government hospitals in Metro Manila is shown in Table 7.1

Table 7.1 Status of Waste Management Practices of Private & Government Hospitals in Metro Manila

Component	Number of Hospitals						Total	%
	With	%	W/out	%	No Data	%		
Segregation	138	87.34	10	6.33	10	6.33	158	100.00
Pre-treatment	95	60.13	53	33.54	10	6.33	158	100.00
Chemical	94	98.95					94	98.95
Autoclave	29	30.53					29	30.53
Delay to decay	20	21.05					20	21.05
Dilution	7	7.37					7	7.37
Ozone	3	3.16					3	3.16
Storage								
Storage room	88	55.70	60	37.95	10	6.33	158	100.00
Storage pit	25	15.82	121	76.58	12	7.59	158	100.00
Collection & Transport	69	43.67					69	43.67
Push cart	31	19.62					31	19.62
Mobile collection								
Bins	52	32.91					52	32.91
Others								
Disposal								
Municipality/City Disposal system*								
(General waste)	128	81.01					128	81.01
Incinerator**								
(Infectious/hazardous waste)	148	93.67					148	93.67
Others***	10	6.33					10	6.33
Recycling	84	53.16	63	39.87	11	6.96	158	100.00

N =158 hospitals

\* Landfill and/or open dumping

\*\* Incinerator

\*\*\* Burying, burning

### **Segregation**

The current waste segregation practices observed in hospitals involved the separation of wastes according to category and through color coding schemes. Segregation of waste through color coded plastic bags is being done to avoid accidental or direct handling of hazardous and infectious waste by persons in-charge of collection. Common plastic bags or receptacles being used are as follows:

Black	-	for non-infectious dry waste
Green	-	for non-infectious wet waste
Yellow	-	for infectious, pathological and hazardous waste
Red	-	for sharp objects and needles

Majority of the hospitals were observed to be practicing waste segregation, and 138 (87.3%) of the 158 surveyed practice color coding.

### **Storage and collection**

Some hospitals have adequate facilities for the temporary storage of waste within the compound. Most of these facilities are located away from the patient rooms, laboratories or any hospital function or operating rooms. Segregation is also necessary in waste storage.

#### **Storage facility**

Hospitals use various types of receptacles or containers for the temporary storage of waste. The survey shows that about 88 or 55.7% of the hospitals have their own storage facilities within the hospital premises, while the rest (60%) store their waste elsewhere. However, there are 25 hospitals which use waste storage or disposal pits.

#### **On-site collection system**

The collection of general (non-infectious) waste in hospitals is done on a room to room basis either manually or with a packaged-type rolling container. Collected waste is then taken to the designated collection point or a temporary storage area. The collection of pathological and infectious waste is done using separate receptacles or containers with plastic lining. In some hospitals, sharp objects are collected using puncture-proof containers.

The survey shows that 43.7 % and 19.6 % of hospitals under this study commonly used push carts and mobile collection bins, respectively, for waste collection.

#### **Off-site collection system**

The transport of pathological, infectious and hazardous hospital waste was cautiously carried out to avoid inflicting risks to the public. The study shows that 74 hospitals (46.8%) have access to an incineration facility which serves as their means of waste disposal. Of the 74 hospitals, 60 are serviced by a private contractor that collects waste using its own collection vehicles, while the remaining 14 hospitals use the collection vehicles and incinerator of other hospitals for waste haulage and disposal. However, hospitals with on-site disposal facilities collect and haul waste using either push carts or mobile collection bins.

For private waste collection and haulage system (e.g., IWMI), an information receipt in the form of a manifest is used. This contains data on the origin, category, and the amount of

waste to be disposed. The volume of waste indicated in the manifest also serves as the basis for billing disposal charges.

### **Collection frequency**

As recommended in the DOH manual on waste management, room to room collection of hospital waste is to be done at the start of every shift. The majority of the hospitals were found to comply with this recommended collection schedule, while 26 % do in-house collection only once a day.

For the off-site collection system, the study shows a collection frequency ranging from once a day to once a week, and averaging 3 to 4 times a week.

### **Treatment**

The results of the study regarding pre-treatment of infectious and hazardous waste in the health care establishment indicate that 95 or 60.1 % of the hospitals treat their waste prior to disposal. However, 53 or about 33.5% don't, and this includes hospitals with incinerators who directly dispose their waste without any treatment. The rest of the hospitals have no records on the conduct of pre-treatment.

Hospitals were identified to practice five pre-treatment measures such as chemical disinfection, autoclaving, delay to decay process, dilution and ozonation. Survey results show that 94 or about 59.5% of hospitals use chemical disinfectants; 29 or 18.4% practice autoclaving; 20 practice the delay-to-decay process, while 7 and 3 hospitals conduct dilution and ozonation, respectively.

### **Disposal system**

Waste disposal is the last component of the waste management system, and needs closer attention in order to promote public health and preserve the environment. The DOH waste management manual identifies two disposal techniques, namely, incineration and sanitary landfill.

The collection and disposal of general waste are conducted by the municipality or city. About 128 ( 81 %) of the hospitals are covered by municipal or city collection services. However, 74 or 46.8% of the hospitals dispose of particular hospital waste through incineration, and about 60 of these hospitals with access to incineration facilities are serviced by a private company, the Integrated Waste Management Inc. About 14 hospitals currently share the incinerators of other hospitals.

### **7.5.2 Waste Generation Survey ( JICA survey )**

As part of the overall waste management study in Metro Manila, a hospital waste generation survey was conducted utilizing a highly informative survey form. The survey tool has been designed to reflect the type, volume and weight of solid waste generated by hospitals. Seventeen Teams (two personnels in each team) were dispatched all over Metro Manila to conduct the survey.

As mentioned previously, the survey targeted 52 hospitals, but only 49 responded positively (see Table 7.2). It can be noted that 6 of the hospitals were observed for less than the seven day study period.

Table 7.2      Number of Hospitals, and their Corresponding Number of Beds, Surveyed in Metro Manila

Hospital Category	Sampling Survey		in Metro Manila	
	Hospital	Bed	Hospital	Bed
Tertiary	18	7,789	71	26,665
Secondary	20	956	66	2,111
Primary	11	138	36	523
<b>Total</b>	<b>49</b>	<b>8,876</b>	<b>173</b>	<b>29,299</b>

#### **Generation rate of general waste and hazardous and infectious waste in hospitals**

A total of 16,830.61kg of hazardous and infectious waste and about 1,184.85m<sup>3</sup> of general waste were generated and measured during the study period. As expected, tertiary hospitals generate the highest amount of infectious, hazardous and general waste, followed by secondary hospitals. Primary hospitals were found to generate the least amount of both waste type.

The infectious and hazardous waste generation rate of tertiary hospitals is 0.305 kg/bed/day; secondary hospitals, 0.213 kg/bed/day; and primary hospitals 0.152 kg/bed/day. The generation rate of tertiary hospitals is about 1.5 times higher than the secondary and twice as much as the primary.

On the other hand, primary hospitals had the highest general waste generation rate. Table 7.3 shows the general waste and hazardous and infectious waste generation amount and generation rate.

Table 7.3 General Waste and Hazardous and Infectious Wastes Generation Amount and Generation Rate

Hospital Category	General Waste		Hazardous Waste	
	Total (m <sup>3</sup> )	Generation Rate (m <sup>3</sup> /bed/day)	Total (kg)	Generation Rate (kg/bed/day)
Tertiary	1,009.46	0.02	15,528.10	0.305
Secondary	130.45	0.02	1,014.11	0.213
Primary	37.97	0.04	288.40	0.152

Note: Three (3) hospitals were observed for only 6 days  
Two (2) hospitals were observed for only 3 days  
One (1) hospital was observed for only 4 days

#### Hospital waste volume and hazardous and infectious waste generation amount

The total general waste volume generated by hospitals in Metro Manila is estimated at 600 m<sup>3</sup>/day, while the hazardous/infectious waste generated by hospitals is 8.7 ton/day. Like household waste, general waste from hospitals is mainly made up of papers and plastic materials. Using the 0.2 apparent specific gravity of household waste obtained from WACS, waste volume was converted into weight. As a result, the general waste amount generated by hospitals in Metro Manila is 120 ton/day, and the percentage of hazardous and infectious waste in the total amount of waste generated by hospitals was estimated at 7.8 %.

Table 7.4 Volume of Hospital Waste and Amount of Hazardous and Infectious Waste Generated in Metro Manila

Hospital Category	General Waste (m <sup>3</sup> /day)	Hazardous Waste (ton/day)
Tertiary	533.30	8.133
Secondary	42.22	0.450
Primary	20.92	0.079
<b>Total</b>	<b>596.44</b>	<b>662</b>

## 7.6 Findings and Recommendations

Because some hospital personnel were not aware of the survey, the study team had difficulty in securing data, e.g. exact time of waste collection and its frequency.

Hospitals having problems with the acquisition or procurement of yellow plastic bags used black plastic bags or any kind of plastic bag for the storage of infectious and hazardous waste.

Some hospitals were observed to pile garbage within the hospital compound while awaiting the collection services of either the concerned local government unit or the Metro Manila Development Authority (MMDA). For cases like this, the garbage pile should be situated in an enclosure of adequate size relative to the frequency of collection, and the waste storage bags must be color coded and arranged separately by color.

The incineration of infectious and hazardous waste from some of the hospitals that were surveyed are provided by the Integrated Waste Management Inc. (IWMD). While some hospitals have their own incinerators, others use the incinerators of other hospitals for a fee. The high incineration fees (P 40.00/kg) charged by the private company has compelled these hospitals to have their own incineration facility.

Incineration is observed to be the most appropriate method of disposing hospital waste. However, it exposes the operators to contamination or injury during the loading and unloading of the furnace chamber. Great care and attention must be given to the location and protection of storage points, and personnel must be well informed of the health hazards associated with improper waste handling.

The DOH should continue monitoring and inspecting hospital waste management practices, and do these more frequently to ensure compliance to the requirements. DOH should also continue conducting programs that enhance public awareness of the health hazards caused by improper waste disposal, as well as the conduct of training of hospital personnel and housekeepers on proper and effective waste management practices.

A hospital based monitoring program should be formulated to monitor hospital personnel involved in waste management, and determine the effectiveness of the program. Finally, hospital waste management must be made an integral part of the overall hospital operation. Although the provision of a safe and efficient waste management system is the responsibility of hospital administrators or chiefs, the problem has become so big that the national government, particularly the Department of Health, has set the improvement of waste collection, treatment and disposal as one of its highest priorities so as to reduce the risk of disease transmission.

The Department of Health through the Environmental Health Service has developed and distributed manuals and training guides on hospital waste management; conducted trainings to hospital personnel (government and private) in charge of waste management, and has provided logistics and technical assistance to some hospitals.

The Bureau of Licensing and Regulations/DOH proposes to modify the existing Implementing Rules and Regulations of RA 4226 (AO 68-A) as a strategy to incorporate

proper hospital waste management practices in the hospital licensing requirements. Similarly, the DOH through the HOMS is currently involved in the development of the Proposed Philippine-Austrian Incineration Project. The proposal will include provision of incineration facilities, wastewater treatment, pre-treatment equipment, monitoring devices and technical assistance. Beneficiaries of the proposed project are the hospitals of East Avenue Medical Center, Philippine Orthopedic Center, Tondo General Hospital and the Rizal Medical Center.

The MMDA requested NEDA for inclusion in the 1994 RP-France Financial Protocol for possible financial assistance for the installation of a centralized incinerator facility in Metro Manila. The project started off with the preparation of an Environmental Impact Assessment Report.

Recently, an International Workshop on Hospital and Solid Waste Management was conducted through the sponsorship of WASTE (Advisers on Urban Environment and Development, Netherlands under the Urban Waste Expertise Program. (17-18 February 1997).



**Table 7.5: List of Surveyed Hospitals In Metro Manila and their Categories**

	<b>Name of Hospitals</b>	<b>Category</b>	<b>Bed Capacity</b>
1.	MCU-FDT Medical Foundation	3	220
2.	Lung Center of the Philippines	3	272
3.	Quezon City General Hospital	3	250
4.	Philippine Orthopedic Hospital	3	700
5.	Sto. Tomas University Hospital	3	850
6.	United Doctors Medical Center	3	
7.	San Lazaro Hospital	3	900
8.	Dr. Jose Fabella Hospital	3	700
9.	Jose R. Reyes Memorial	3	450
10.	Medical Center Manila	3	250
11.	Quirino Memorial Medical	3	250
12.	St. Lukes Medical Center	3	
13.	Quezon Institute	3	350
14.	National Childrens Hospital	3	250
15.	East Avenue Medical Center	3	400
16.	Quezon City Medical Center	3	
17.	National Kidney Institute	3	250
18.	Makati Medical Center	3	703
19.	Manila Doctors Hospital	3	300
20.	Rizal Medical Center	3	300
21.	Medical City Hospital	3	387
22.	General Malvar Foundation	2	55
23.	Fairview General Hospital	2	34
24.	F.Y. Manalo Memorial Medical	2	50
25.	Sta Lucia General Hospital	2	55
26.	Pascual General Hospital	2	20
27.	Hernandez General Hospital	2	10
28.	Martinez Memorial Hospital	2	100
29.	Our Lady of Grace Hospital	2	28
30.	Ronn-Carmel Hospital	2	25
31.	Las Pinas District Hospital	2	25
32.	D.T. Protacio Hospital	2	30
33.	Ospital ng Sampaloc	2	50
34.	Philippine Air Force General Hospital	2	150
35.	Sta. Rita de Baclaran Hospital	2	25
36.	Ospital ng Tondo	2	50
37.	Amisola Maternity Hospital	2	25
38.	Clinica Arellano	2	50
39.	Villarosa Hospital	2	24
40.	Manila Naval Hospital	2	100
41.	Ospital ng Makati	2	50
42.	Neopoloitian Medical & Maternity	1	15
43.	Franco Clinic	1	15
44.	Clinica Terencio and Hospital	1	15
45.	San Lorenzo Hospital	1	15
46.	Our Lady of Lourdes Hospital	1	15
47.	UP Infirmary	1	25
48.	Holy Mary Family Hospital	1	11
49.	Doña Marta Maternity & Lying-In	1	25
50.	Pagamutang Bayan ng Malabon	1	18
51.	Santos Medical Clinic	1	20
52.	Clinic of the Holy Spirit	1	40

TABLE 7.6 (1) SURVEY ON HOSPITAL WASTE GENERATION - GENERAL WASTES

Name of Hospitals	Automatic Bed Capacity	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Total	
		Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	days of Observations
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>TERTIARY HOSPITALS</b>																	
1. MCU-FDT Med. Fdn. Hospital	220			1.24	247		245	1.39	242	1.11	186	0.95	263	1.25	281	6.88	6
2. Lung Center of the Philippines	272	4.06	139	4.06	174	3.48	116	4.35	157	2.9	153	4.35	166	3.19	183	26.39	7
3. Quezon City General Hospital	250	2.94	108	2.75	83	2.88	101	2.69	107	2.44	113	2.91	128	2.94	127	19.55	7
4. Philippine Orthopedic Center	700									12.5		11.88		12.5		36.88	3
5. Sto. Tomas Univ. Hospital	850	24.3		40.5		36.72		20.52		26.46		28.62		27.54		204.66	7
6. San Lazaro Hospital	900	9	432	9	431	19.2	467	20.4	461	14.4	464	16.8	483	16.2	498	105	7
7. Dr. Jose Fabella	700	24	456	24	449	22.8	452	22.8	435	24	432	22.8	443	22.2	466	140.4	7
8. Jose R. Reyes Hospital	450	19.8	463	18	459	19.8	455	19.2	427	19.2	413	18	411	18	415	132	7
9. Medical Center Manila	250	3.66	159	4.015	150	3.69	150	3.51	134	3.2	123	3.64	122	3.9	131	25.615	7
10. Quirino Mem. Med. Center	250	8.08		12.72		14.82		19.04		6.208		10.912		11.888		83.668	7
11. Quezon Institute	350	2.71	263	2.905	283	2.875	257	2.335	251	3.21	245	3.175	241	2.714	256	19.924	7
12. National Children's Hospital	250	5.332	142	5.504	137	4.644	147	4.186	135	4.988	141	4.472	158	4.644	135	33.77	7
13. East Avenue Med. Center	400	7.05	608	6.35	589	5.85	577	6.2	537	4.3	519	4.55	585	6.6	532	40.9	7
14. National Kidney Institute	250			9.4	269	6.64	280	5.34	245	6.13	197	6.26	265	9.05	323	42.82	6
15. Makati Medical Center	703	4	588	4	613	4	625	4	604	4	624	4	619	4	622	28	7
16. Rizal Medical Center	300	3.64	224	2.665	216	3.185	222	4.095	246	3.315	252	3.9	247	5.005	270	25.805	7
17. Medical City Hospital	387	2.405	304	2.145	312	3.12	330	3.835	309	2.99	296	4.29	310	4.68	316	23.465	7
18. Manila Doctors Hospital	300							2.99	212	4.55	202	5.27	213	4.49	251	2.99	4
T O T A L	7782	117.932		149.44		155.34		144.961		146.046		156.319		139.416		1009.457	117
Generation rate per bed per day (m <sup>3</sup> /b/d)		0.0186		0.022		0.0228		0.02		0.0188		0.02		0.0179			
Average generation rate per bed per day (m <sup>3</sup> /b/d)																0.02	

TABLE 7.6 (2) SURVEY ON HOSPITAL WASTE GENERATION - GENERAL WASTES

Name of Hospitals	Automatic Bed Capacity	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Total	
		Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	days of Observations
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>SECONDARY HOSPITALS</b>																	
1. Gen. Mahar Fdn. Hospital	55	0.13	21	0.12	25	0.07	18	0.1	18	0.1	17	0.13	21	0.14	19	0.79	7
2. Fairview General Hospital	34	0.2	14	0.25	15	0.18	18	0.23	14	0.11	12	0.3	11	0.32	13	1.59	7
3. F.Y. Manalo Mem. Med. Hosp.	50	0.22	16	0.33	14	0.38	12	0.33	17	0.28	17	0.44	19	0.33	17	2.31	7
4. Sta. Lucia General Hospital	55	0.22	14	0.64	14	0.35	11	0.32	12	0.54	32	0.36	16	0.41	14	2.84	7
5. Pascual General Hospital	20	0.06	5	0.04	5	0.15	2	0.12	4	0.03	1	0.06	2	0.06	3	0.52	7
6. Hernandez General Hospital	10							0.06		0.19		0.23		0.27		0.75	4
7. Martinez Memorial Hospital	100	0.65	41	0.52	41	0.65	39	0.65	47	0.52	49	0.52	45	0.65	47	4.16	7
8. Our Lady of Grace Hospital	28	0.26	20	0.1	20	0.28	13	0.31	24	0.17	50	0.2	43	0.23	14	1.55	7
9. Ronn-Carmel Hospital	25	0.17	18	0.08	13	0.11	12	0.11	10	0.06	1	0.28	8	0.01	15	0.82	7
10. Las Pinas Dist. Hospital	25	5.1	18	4	12	3.9	22	3.7	26	2.69	26	2.9	20	3.52	23	25.81	7
11. D.T. Protacio Hospital	30	1.8	15	2.5	16	2.3	13	4	13	1.48	7	1.08	10	1.32	13	14.48	7
12. Ospital ng Sampaloc	50	2.7	30	1.08	14	0.54	22	0.54	13	1.08	10	1.08	6		15	7.02	7
13. Phil. Airforce Gen. Hospital	150	2.25		0.393		0.2		0.23		0.2		0.3		0.2		3.773	7
14. Sta. Rita de Baclaran	25	5.75	7	15	12	1	11	0.65	14	0.5	18	0.3	15	0.44	13	23.64	7
15. Ospital ng Tondo	50	2.78	69	2.92	87	4.616	35	4.432	86	2.322	32	2.51		1.504		21.084	7
16. Amisola Mat. Hospital	25	1.168	15	1.408	17	1.504	25	1.728	26	1.76	34	1.424	24	1.904	56	10.896	7
17. Clinica Arellano	50	0.09	3	0.12	4	0.15	4	0.12	6	0.12	6	0.06	3	0.09	4	0.75	7
18. Villarosa Hospital	24	0.32	14	0.32	16	0.32	16	0.4	18	0.32	18	0.4	20	0.4	18	2.48	7
19. Manila Naval Hospital	100	0.0075	41	0.017	39	0.0155	32	0.0113	42	0.0078	37	0.0205	32	0.0053	38	0.0849	7
20. Ospital ng Makati	50	0.71	114	0.85	112	0.82	111	0.58	108	0.86	98	0.88	110	0.4	110	5.1	7
T O T A L	956	24.5855		30.688		17.536		18.6213		13.3398		13.4745		12.2033		130.4479	137
Generation rate per bed per day (m <sup>3</sup> /b/d)		0.026		0.032		0.018		0.019		0.0139		0.014		0.0127			
Average generation rate per bed per day (m <sup>3</sup> /b/d)																0.02	

TABLE 7.6 (3) SURVEY ON HOSPITAL WASTE GENERATION - GENERAL WASTES

Name of Hospitals	Automatic Bed Capacity	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Total	
		Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	No. of Patients	Vol. (m <sup>3</sup> )	days of Observations
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>PRIMARY HOSPITALS</b>																	
1. Neopolitan Med. & Mat. Hosp.	15	0.36	5	0.18	5	0.23	5	0.13	5	0.04	6	0.36	6	0.18	9	1.48	7
2. Franco Clinic	15	0.01	2	0.01	8	0.04	3	0.08	25	0.05	20	0.04	7	0.04	23	0.27	7
3. Clinica Terencio & Hospital	15	0.06	32	0.06	29	0.06	36	0.06	34	0.06	37	0.06	46	0.06	13	0.42	7
4. San Lorenzo Hospital	15	0.28	34	0.28	34	0.24	46	0.24	45	0.36	21	0.32	41	0.4	55	2.12	7
5. Our Lady of Lourdes Hospital	15	0.03	13	0.01	19	0.03	22	0.07	18	0.08	17	0.1	60	0.07	44	0.39	7
6. UP Infirmary	25	0.19	33	0.25	39	0.19	52	0.12	29	0.06	30	0.22	32	0.19	31	1.22	7
7. Holy Mary Family Hosp.	11	3.3	8	2.8	5	1.99	5	1.9	6	0.75	6	0.68	5	0.8	7	12.22	7
8. Dona Marta Mat. & Lying-in	25	0.058	6	0.0652	14	0.035	10	0.011	16	0.052	15	0.04	9	0.008	4	0.2692	7
9. Pagamutang Bayan Mal.	18	3.316		2.08		2.36		1.99		1.616		1.792		1.232		14.386	7
10. Santos Medical Clinic	20	0.13	2	0.13	1	0.046		0.13	3	0.07	4	0.08	5	0.7	6	1.286	7
11. Clinic of the Holy Spirit	40	0.664	62	0.498	63	0.581	64	0.664	67	0.415	67	0.498	67	0.561	68	3.881	7
<b>T O T A L</b>	138	8.398		6.3632		5.802		5.395		3.553		4.19		4.241		37.9422	63
Generation rate per bed per day (m <sup>3</sup> /b/d)		0.061		0.046		0.042		0.039		0.0257		0.03		0.031			
Average generation rate per bed per day (m <sup>3</sup> /b/d)																0.04	

**TABLE 7.7 (1) SURVEY ON HOSPITAL WASTE GENERATION - INFECTIOUS AND HAZARDOUS WASTES**

Name of Hospitals	Automatic Bed Capacity	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Total	
		Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	Days of Observations
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>TERTIARY HOSPITALS</b>																	
1. MCU-FDT Med. Fdn. Hospital	220			103	230	79	245	108.5	242	102	245	117	263	139	281	648.5	6
2. Lung Center of the Philippines	272	208	137	186	171	166	116	246	177	135	153	147	166	115	142	1203	7
3. Quezon City General Hospital	250	7	108	5.5	83	6.3	101	7.1	107	7.4	113	7.2	128	6.3	127	46.8	7
4. Philippine Orthopedic Hospital	700									57.5	519	121.5	510	53.75	498	232.75	3
5. Sto. Tomas Univ. Hospital	850	89		103.5		85		66.5		117.5		87		73.5		622	7
6. San Lazaro Hospital	900	391	432	376	431	398	467	419.5	461	364	448	385	505	424	498	2757.5	7
7. Dr. Jose Fabella Hospital	700	122	456	90.5	449	155	452	153.5	435	166	432	260	443	202	202	1149	7
8. Jose R. Reyes Hospital	450	135	463	177	459	172	455	115	427	64	413	101	411	150	150	914	7
9. Manila Medical Center	250	68.5	34	107	42	147.5	22	53.52	21	56.5	21	60	19	66	21	559.02	7
10. Quirino Mem. Med. Center	250	216.5		251.5		257		255.5		163.5		199.5		229.5		1573	7
11. Quezon Institute	350	4.4	263	3	283	1.5	257	2.75	251	2	245	1	249	1.5	256	16.15	7
12. National Childrens Hospital	250	20.25	142	21.5	137	18.25	147	13.5	135	13.75	138	15.75	158	16.5	136	119.5	7
13. East Avenue Medical Center	400	144.5	608	153	589	148.5	577	118.5	537	109.5	519	122.5	585	102.5	537	899	7
14. National Kidney Institute	250			150	269	232	280	142	245	45	197	81	265	115	323	765	6
15. Makati Medical Center	703	300	588	300	613	300	625	300	604	300	624	300	619	300	622	1800	7
16. Manila Doctors Hospital	300							63.2		70		73.9		59.5		63.2	4
17. Rizal Medical Center	300	73.5	241	103.25	224	186	147	244	249	112	249	76	247	104	270	898.75	7
18. Medical City Hospital	387	35.25	304	56.5	312	105.25	330	93	309	47.75	296	118.75	310	61	316	517.5	7
<b>T O T A L</b>	7782	1814.9		2187.3		2457.3		2402.1		1933.4		2274.1		2219.1		15288.07	117
Generation rate/bed/day (kg/b/d)																	
Average generation rate/bed/day (kg/b/d)		0.287		0.322		0.362		0.339		0.248		0.292		0.285		0.305	

**TABLE 7.7 (2) SURVEY ON HOSPITAL WASTE GENERATION - INFECTIOUS AND HAZARDOUS WASTES**

Name of Hospitals	Automatic Bed Capacity	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Total	
		Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	Days of Observations
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>SECONDARY HOSPITALS</b>																	
1. Gen. Maivir Fdn. Hospital	55	21	4	25	245	18	275	18	255	17	21	21	21	385	19	104.95	7
2. Fairview General Hospital	34	4.7	14	4.75	15	5.1	18	1.5	14	2.1	12	3.05	11	3.45	13	24.65	7
3. F.Y. Manalo Mem. Med Hosp.	50	13.5	16	10	16	9.25	12	8.3	17	12.95	17	8.75	19	14.3	17	77.05	7
4. Sta. Lucia Gen. Hospital	55	4	14	4	14	1.75	11	1.5	12	2.83	16	8.75		1.75	14	24.58	7
5. Pascual General Hospital	20	4	5	5	1	1.12		1.12		1	1	1.62	2	0.12	3	13.98	7
6. Hernandez General Hospital	10							0.5	8	0	0	0.12		0.12		0.74	3
7. Martinez Memorila Hospital	100	2	41	4.5	41	3.75	38	3.2	47	3.25	49	2.55	47	2.75	43	22	7
8. Our Lady of Grace Hospital	28	6.92	8	7.36	11	7.14	7	4.12	11	1.45	15	1.12	8	3.39	14	31.5	7
9. Romn-Carmel Hospital	25	1.2	18	1.45	13	0.67	12	1	10	0	1	0.45	8	0.67	15	5.44	7
10. Las Pinas District Hospital	25	3.88	18	6.21	17	13.55	21	14.75	23	14.2	26	6.6	20	8.2	23	67.39	7
11. D.T. Protacio Hospital	30	11.02	18	14.01	19	10.93	12	7.41	11	5.4	5	3.5	11	3.7	13	55.97	7
12. Ospital ng Sampaloc	50			4.5	30	3.4	14	13	22	2.5	13	9	10	6	6	38.4	6
13. Phil. Airforce Gen. Hospital	150	2.35	8	1.05	29	3	5	2	2	10.1	7	4.25	3	1.25		24	7
14. Sta. Rita de Baclaran	25	3	9	2	12	1.2	11	0.5	14	1.75	18	2.5	12	3.5	11	14.45	7
15. Ospital ng Tondo	50	20.7	24	31.7	47	34.6	35	27.8	45	31.9	32	35.6	37	38.2	31	220.5	7
16. Amisola Maternity Hospital	25	18.5	15	15.8	16	14.4	25	32.4	26	28.2	34	24.2	29	26.2	59	159.7	7
17. Clinica Arrellano	50	1.3	3	1.5	4	0.3	4	6	6	1	1	0.5	3	1.2	4	11.8	7
18. Villarosa Hospital	24	10	27	4.5	14	6.5	16	6	18	2.5	10	5.5	20	4.5	18	39.5	7
19. Manila Naval Hospital	100	4	55	3.5	32	1.75	32	0.75	42	0.008	38	0.5	34	1	38	11.508	7
20. Ospital ng Makati	50	13	99	14	112	17	111	11	108	2	98	2	110	7	110	66	7
<b>T O T A L</b>	<b>956</b>	<b>145.07</b>		<b>160.83</b>		<b>153.41</b>		<b>160.85</b>		<b>140.14</b>		<b>122.66</b>		<b>131.15</b>		<b>1014.108</b>	<b>135</b>
Generation rate/bed/day (kg/b/d)		0.294		0.31		0.182		0.149		0.237		0.217		0.096			
Average generation rate/bed/day (kg/b/d)																0.213	

**TABLE 7.7 (3) SURVEY ON HOSPITAL WASTE GENERATION - INFECTIOUS AND HAZARDOUS WASTES**

Name of Hospitals	Automatic Bed Capacity	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7		Total	
		Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	No. of Patients	Weight (kg)	Days of Observations
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>PRIMARY HOSPITALS</b>																	
1. Neopolitan Med. & Mat. Hosp.	15	2	2	1	2	0.5	2	0.5		2.25		0	0	0.12		6.37	7
2. Franco Clinic	15	0.2	2	0	8	0.06	3	0.2	25	0	20	0	9	0.1	23	0.56	7
3. Clinica Terencio & Hospital	15	0.2	32	0.8	29	1	36	1.1	34	1.7	37	0.9	46	0.5	13	6.2	7
4. San Lorenzo Hospital	15	1.5	54	3	40	2.5	48	2.75	46	1.25	21	1.75	20	2.75	2.75	15.5	7
5. Our Lady of Lourdes Hospital	15	0.5	3	0.4	3	0.3	1	0.2	1	0	1	0.25	2	0.35	3	2	7
6. UP Infirmary	25	3.62	33	3.25	39	4.85	52	5.62	29	3.12	24	5.75	32	1.8	31	28.01	7
7. Holy Mary Family Hospital	11	12.37	8	10.47	13	3.17	7	1.99	10	3.4	6	2.46	6	0.88	7	34.74	7
8. Dona Marta Mat. & Lying-in	25	14.48	6	16.3	14	8.75	10	2.75	16	13	15	10	9	2.1	4	67.38	7
9. Pagamutang Bayan ng Malabon	18	2.5	78	2.5	124	4	178	5.5	69	8	65	8.7		4.6	41	35.8	7
10. Santos Medical Clinic	20	0.2	2	0.14	1	0		0		0		0		0		0.34	7
11. Clinic of the Holy Spirit	40	0		0		0		0		0		0		0		0	7
<b>TOTAL</b>	<b>138</b>	<b>40.6</b>		<b>42.9</b>		<b>25.1</b>		<b>20.6</b>		<b>32.7</b>		<b>29.9</b>		<b>13.2</b>		<b>288.4</b>	<b>81</b>
Generation rate/bed/day (kg/b/d)		0.153		0.17		0.162		0.168		0.146		0.128		0.137			
Average generation rate/bed/day (kg/b/d)																0.152	

**TABLE 7.8 NUMBER OF METRO MANILA HOSPITALS AND BED CAPACITIES**

LOCATION	TOTAL	PRIMARY	BC	SECONDARY	BC	TERTIARY	BC
CALOOCAN	15	6	75	5	86	4	2,555
LAS PINAS	7	3	26	3	90	1	100
MAKATI	9	1	7	4	196	4	1,464
MALABON	4	3	39	1	15		
MANDALUYONG	5			2	75	3	5,720
MANILA	36	1	20	12	372	23	7,343
MARIKINA	9	2	30	6	144	1	100
MUNTINLUPA	9	1	12	5	129	3	640
NAVOTAS	1	1	6				
PARANAQUE	8	2	31	5	152	1	105
PASAY	8	3	24	2	115	3	480
PASIG	7	3	39	2	105	2	341
QUEZON CITY	40	4	95	14	492	22	7,183
SAN JUAN	3					3	384
TAGUIG	4	3	27	1	50		
VALENZUELA	8	3	92	4	90	1	250
<b>TOTAL</b>	<b>173</b>	<b>36</b>	<b>523</b>	<b>66</b>	<b>2,111</b>	<b>71</b>	<b>26,665</b>
<b>30% SAMPLES</b>		<b>11</b>		<b>20</b>		<b>21</b>	



Table 7.9 List of Hospitals in Metro Manila

NR	NAME	ADDRESS	CATEGORY	BED CAPACITY
1	ST. JUDE HOSPITAL	DIMASALANG, SAMPALOC, MANILA	2	100
2	FAMILY CLINIC	MARIA CLARA ST., STA. CRUZ, MANILA	2	100
3	OLIVAREZ GENERAL HOSPITAL	GEN. SANTOS AVE., PARANAQUE, METRO MANILA	2	50
4	PASAY GENERAL HOSPITAL	P. BURGOS ST., PASAY CITY	2	100
5	CAMP PANOPTIO HOSPITAL	BATANGAS ST., STA. CRUZ, MANILA	0	150
6	GALANG MEDICAL CENTER		2	50
8	CHINESE GENERAL HOSPITAL		3	0
9	INFANT JESUS HOSPITAL	FORBES COR. LAON LAAN ST., SAMPALOC, MANILA	3	140
10	PERPETUAL HELP HOSPITAL	LAON LAAN, MANILA	2	50
11	PAMPLONA MEDICAL CLINIC	46 REAL ST. PAMPLONA, LAS PINAS METRO MANILA	2	15
12	LAS PINAS MEDICAL CLINIC	ALABANG-ZAPOTE RD. TALON LAS PINAS METRO MANILA	1	6
13	LAS PINAS DOCTOR'S HOSPITAL	CRM. AVE., BF HOMES ALMANZA LAS PINAS, METRO MANILA	2	25
14	CALLEJO MEDICAL CLINIC	545-A TALON GARDEN, TALON, LAS PINAS	1	15
15	PERPETUAL HELP MEDICAL CENTER	PAMPLONA, LAS PINAS, METRO MANILA	3	174
16	OSPITAL NG MAYNILA	PRES. QUIRINO AVE., ROXAS BOULEVARD, PASAY CITY	3	300
17	PERPETUAL SUCCOR HOSPITAL	8136 F. CAYCO ST., SAMPALOC, MANILA	3	65
18	MANILA CHILDREN'S & LYING-IN HOSP	PEDRO GIL, TAFT AVE, MANILA	3	60
19	MEDICAL CENTER MANILA	1122 GEN. LUNA ST. ERMITA, MANILA	3	250
20	PHILIPPINE GEN. HOSP. (WARD 7)	TAFT AVENUE, MANILA	3	22
21	STO. TOMAS UNIVERSITY HOSPITAL	ESPANA ST., MANILA	3	850
22	FEU-DR. NICANOR REYES MED. FDTN	NICANOR REYES ST., SAMPALOC, MANILA	3	215
23	FATIMA MEDICAL CENTER	120 MC ARTHUR HIGHWAY, VALENZUELA, METRO MANILA	3	250
24	PARANAQUE COMMUNITY HOSPITAL	QUIRINO AVE., PARANAQUE METRO MANILA	2	85
25	MANILA SANITARIUM	ST. JUAN ST. PASAY CITY	3	150
26	MEDICAL CENTER PARANAQUE	SUCAT ROAD, PARANAQUE	0	100
27	ARISOLA MATERNITY HOSPITAL	1668 HERMOSA ST. MANUGUIT, TONDO, MANILA	2	25
28	ST. RITA HOSPITAL	2407 T. EARNSHAW ST. GAGALANGIN TONDO, MANILA	2	50
29	STA. TERESITA GEN. HOSPITAL	D. TUASON ST./N. ROXAS, QUEZON CITY	3	65
30	F.Y. MANALO MEM. MED. HOSP.	COMMONWEALTH AVENUE COR TANDANG SORA, QUEZON CITY	2	40
31	FAIRVIEW GENERAL HOSPITAL	FAIRVIEW AVENUE, QUEZON CITY	2	30
32	UP INFIRMARY (UP HEALTH SERVICES)	UP CAMPUS, DILIMAN, QUEZON CITY	1	25
33	CAPITOL MEDICAL CENTER	SCOUT MAGBANUA, PANAY AVENUE, QUEZON CITY	3	250
34	UNITED DOCTORS MEDICAL CENTER	290 ESPANA cor. N. RAMIREZ, QUEZON CITY	3	250
35	GEN. M. MALVAR MEDICAL FOUNDATION	531 COMMONWEALTH AVENUE, QUEZON CITY	2	50
36	SEAMAN'S HOSPITAL	CABILDO cor. SAN JOSE ST. INTRAMUROS, MANILA	3	100
37	MARY CHILES GENERAL HOSPITAL	667 GASTAMBIDE ST., SAMPALOC, MANILA	3	150

NR	NAME	ADDRESS	CATEGORY	BED CAPACITY
38	METROPOLITAN HOSPITAL	1357 G. MASANGKAY ST., TONDO, MANILA	3	0
39	CLINICA ARELLANO GEN. HOSPITAL	1430 DOROTEO JOSE ST., STA. CRUZ, MANILA	2	50
40	MARY JOHNSTON HOSPITAL	1221 JUAN LUNA ST., TONDO, MANILA	3	150
41	ST. MARTIN DE PORRES CHARITY HOSP	SAN JUAN, METRO MANILA	3	150
42	P. GONZALEZ MEMORIAL HOSPITAL	45 F. JOSEPH CONCEPCION, MARIKINA	1	15
43	GARCIA GENERAL HOSPITAL	CONCEPCION, MARIKINA	1	24
44	PNP GENERAL HOSPITAL	CAMP CRAME, QUEZON CITY	0	0
45	DE LOS SANTOS		0	0
46	DELGADO MEMORIAL HOSPITAL		2	0
47	V. LUNA HOSPITAL	NORTH AVENUE, QUEZON CITY	3	0
48	VETERANS MEMORIAL MED. CENTER	NORTH AVENUE, DILIMAN, QUEZON CITY	3	0
49	OUR LADY OF LOURDES HOSPITAL	STA. MESA, MANILA	3	200
50	STA. MONICA HOSPITAL	TANONG, MARIKINA	1	25
51	ST. VINCENT HOSPITAL	CONCEPCION, MARIKINA	0	60
52	STO. NIÑO DE SAN ANTONIO	PASIG, METRO MANILA	0	89
53	F & P HERNANDEZ MATERNITY CLINIC	17 MC ARTHUR HIGHWAY, MARULAS, VALENZUELA, METRO MANILA	1	6
54	PASOLO MATERNITY & MEDICAL CLINIC	152 PASOLO ST. VALENZUELA, METRO MANILA	1	7
55	SANTISSIMO ROSARIO GENERAL HOSP.	2 ESPIRITU ST., MARULAS, VALENZUELA, METRO MANILA	2	15
56	CARLOZ CLINIC	85 PALASAN, VALENZUELA, METRO MANILA	1	7
57	CALALANG GENERAL HOSPITAL	16R VALENZUELA ST., METRO MANILA	2	35
58	CARDINAL SANTOS MEDICAL CENTER	21 WILSON ST., GREENHILLS, SAN JUAN, METRO MANILA	3	245
59	UNCIANO GENERAL HOSPITAL	BONI AVENUE, MANDALUYONG CITY	2	25
60	POLYMEDIC GENERAL HOSPITAL	163 EDSA, MANDALUYONG CITY	3	200
61	PHILIPPINE HEART CENTER	EAST AVENUE, QUEZON CITY	3	263
62	DR. JOSE N. RODRIGUEZ MEM. HOSP.	TALA, KALOOKAN, METRO MANILA	3	200
63	AMANG RODRIGUEZ MED. CENTER	SUMULONG HIGHWAY, STO. NIÑO, MARIKINA CITY	3	150
64	JOSE R. REYES MEM. MED. CENTER	SAN LAZARO COMPOUND, STA. CRUZ, MANILA	3	450
65	NATIONAL KIDNEY & TRANSPLANT INST	EAST AVENUE, QUEZON CITY	3	250
66	RITM	ALABANG, MUNTINLUPA CITY	3	50
67	TONDO MEDICAL CENTER	H. LOPEZ ST. BALUT, TONDO, MANILA	3	200
68	DR. JOSE N. RODRIGUEZ MEM. HOSP.	TALA, KALOOKAN CITY, METRO MANILA	3	0
69	QUIRINO MEMORIAL MEDICAL CENTER	PROJECT 4, QUEZON CITY	3	250
70	NATIONAL CENTER FOR MENTAL HEALTH	9 DE FEBRERO, MANDALUYONG CITY	3	2000
71	EAST AVENUE MEDICAL CENTER	EAST AVENUE, DILIMAN, QUEZON CITY	3	400
72	RIZAL MEDICAL CENTER	PASIG BOULEVARD, PASIG CITY	3	300
73	VALLARTA MEDICAL CLINIC	1175 SAN ANDRES, MALATE, MANILA	0	0
74	DE OCAMPO MEMORIAL MEDICAL CENTER	2921 NAGTAHAN ST., STA. MESA, MANILA	3	100
75	SANTOS MEDICAL CLINIC & GEN. HOSP	2564 TOMAS MAPUA ST., STA. CRUZ, MANILA	1	20
76	MANILA DOCTOR'S HOSPITAL	667 UN AVENUE, MANILA	3	300

NR	NAME	ADDRESS	CATEGORY	BED CAPACITY
77	PHYSICIAN'S DXTIC SERVICES CENTER	533 UN AVE. 4/F PHYSICIAN TOWER, ERMITA, MANILA	2	8
78	FRANCO CLINIC	107 LETRE ROAD, TONSUYA, MALABON	1	15
79	A.P. CRUZ COMMUNITY HOSPITAL	520 M.H. DEL PILAR ST., SANTOLAN, MALABON	2	20
80	PAGAMUTANG BAYAN NG MALABON	DAGAT-DAGATAN COR. MAYA-MAYA STS., TONDO, MANILA	1	18
81	OUR LADY OF GRACE HOSPITAL	8TH AVENUE, WEST COR. ROXAS STS., GRACE PARK, KAL. CITY	2	28
82	CLINICA TERCENCIO & HOSPITAL	185 J.P. RIZAL ST., MAY PAJO, KALOOKKAN CITY	1	15
83	MARTINEZ MEMORIAL HOSPITAL	198-A MABINI ST., KALOOKKAN CITY	2	100
84	JOHN PAUL HOSPITAL	26 M. PONCE ST., KALOOKKAN CITY	2	15
85	RONN-CARMEL HOSPITAL	115 MARIANO PONCE ST., KALOOKKAN CITY	2	25
86	BAESA ADVENT POLYCLINIC&GEN.HOSP.	238 REPARO ST., BAESA, KALOOKKAN CITY	1	10
87	Q.C. ST. AGNES GENERAL HOSPITAL	241 ROOSEVELT AVE., Q.C.	3	50
88	HERNANDEZ GENERAL HOSPITAL	1372 RIZAL AVE. EXT., GRACE PARK, KALOOKKAN CITY	2	10
89	ARNAIZ HOSPITAL	131 MALOLOS AVE., BAGONG BARRIO, KALOOKKAN CITY	1	15
90	MCU-FDT MEDICAL FOUNDATION HOSP.	EDSA, KALOOKKAN CITY	3	220
91	FAIRVIEW POLYMEDIC HOSPITAL	1041 QUIRINO HIGHWAY, NOVALICHES	2	15
92	NEOPOLITAN MED & MATERNITY CLINIC	LAGRO, NOVALICHES, Q.C.	1	12
93	PASCUAL GENERAL HOSPITAL	130 QUIRINO HIGHWAY, BAESA, NOVALICHES, Q.C.	2	30
94	CASAUL GENERAL HOSPITAL	16 TANDANG SORA AVE., NOVALICHES	3	85
95	RAMONES GENERAL HOSPITAL	39 TANDANG SORA, BRGY. CULIAT, QUEZON CITY	2	10
96	ST. LOUIS GENERAL HOSPITAL	MARISSITO ST., NOVALICHES, QUEZON CITY	2	16
97	CRUZ DALIDA MATERNITY HOSPITAL	1025 F. SALVADOR, JORDAN PLAINES, NOVALICHES	1	8
98	BERNARDINO GENERAL HOSPITAL	SN. BARTOLOME, QUIRINO HIGHWAY, NOVALICHES, QUEZON CITY	2	23
99	STA. LUCIA GENERAL HOSPITAL	797 QUIRINO HIGHWAY, NOVALICHES, QUEZON CITY	2	65
100	BAGBAGUIN FAMILY HOSPITAL	GEN. LUNA ST. BAGBAGUIN, KALOOKKAN CITY	1	8
101	J.P. SIOSON GENERAL HOSPITAL	75 BUKIDNON ST., BAGOBANTAY, QUEZON CITY	2	80
102	CRUZ-RABE MATERNITY & GEN. HOSP.	BAGONGBAYAN, TAGUIG, METRO MANILA	2	50
103	STA. ANA MEDICAL CLINIC		0	0
104	TAGUIG DOCTOR'S HOSPITAL	BLK. 9 LOT 1 VILLA CAROLINA SUBD. MUNTINLUPA, MM	1	8
105	BEATO CLINIC MATERNITY HOSPITAL	91 NATIONAL ROAD, MUNTINLUPA CITY	1	10
106	MUNTINLUPA DISTRICT HOSPITAL	338 NATIONAL ROAD, PUTATAN MUNTINLUPA CITY	2	25
107	MUNTINLUPA MEDICAL CENTER	297 MONTILLANO, ALABANG, MUNTINLUPA CITY	3	90
108	ALABANG MEDICAL CLINIC	249 MONTILLANO ST., ALABANG MUNTINLUPA CITY	2	30
109	SAN ROQUE MEDICAL CLINIC	2272 ROXAS BOULEVARD, PASAY CITY	1	12
110	SAN JUAN DED DIOS EDUC. FNDD.	KM. 23 WEST SERVICE ROAD, ALABANG, MUNTINLUPA CITY	0	2
111	HILLSIDE GENERAL HOSPITAL	2017 F. B. HARRISON ST., PASAY CITY	2	28
112	MIRACULOUS MEDAL HOSPITAL	#11 SALALLILA ST., PROJECT 4, QUEZON CITY	2	15
113	VILLAROSA HOSPITAL	#20 11TH ST., NEW MANILA, QUEZON CITY	2	24
114	SUNRISE HILL THERAPEUTIC COM.	#11 BANAWES ST., QUEZON CITY	1	50
115	CHILDREN'S MED. CTR. PHILS., INC.		3	113

NR	NAME	ADDRESS	CATEGORY	BED CAPACITY
116	QUEZON CITY MEDICAL CENTER	960 AURORA BOULEVARD, QUEZON CITY	3	275
117	IMMACULATE CONCEPTION HOSPITAL	KATIPUNAN AVENUE, CONCEPCION, MARIKINA CITY	2	15
118	ST. VICTORIA HOSPITAL	444 J.P. RIZAL ST. LAMUAIN, MARIKINA CITY	0	0
119	LUNG CENTER OF THE PHILIPPINES	QUEZON AVENUE EXT., QUEZON CITY	3	270
120	DR. JOSE FABELLA MEMORIAL HOSP. LO	LOPE DE VEGA ST., FELIX HUERTAS ST., STA. CRUZ, MANILA	3	700
121	SAN LAZARO HOSPITAL	QUIRICADA ST., STA., CRUZ, MANILA	3	900
122	VALENZUELA GENERAL HOSPITAL	PALO, VALENZUELA, METRO MANILA	2	25
123	LAS PIÑAS DISTRICT HOSPITAL	P. DIEGO CERA AVENUE, LAS PIÑAS, METRO MANILA	2	25
124	PHILIPPINE ORTHOPEDIC CENTER	MARIA CLARA ST., QUEZON CITY	3	700
125	NATIONAL CHILDREN'S HOSPITAL	E. RODRIGUEZ AVENUE, QUEZON CITY	3	250
126	QUEZON CITY GENERAL HOSPITAL	EDSA, QUEZON CITY	3	250
127	COL. SALVADOR T. VILLA MEM. HOSP.	CAIMITO ROAD, KALOOKAN CITY	3	50
128	OSPITAL NG TONDO	JOSE ABAD SANTOS, TONDO, MANILA	2	50
129	OSPITAL NG SAMPALOC	677 GERONIMO ST., SAMPALOC, MANILA	2	50
130	NEW BILIBID PRISON HOSPITAL	BUREAU OF CORRECTIONS, MUNTINLUPA CITY	2	500
131	SAN LAZARO HOSPITAL	SUSANO ROAD, DEPARO ST., KALOOKAN CITY	1	15
132	KAYBIGA COMMUNITY HOSPITAL	133 GEN. LUIS ST., KAYBIGA, KALOOKAN CITY	1	15
133	MA. LOURDES MATERNITY HOSPITAL	1075 PASONG TAMO, MAKATI CITY	2	20
134	FORT BONIFACIO GENERAL HOSPITAL	FORT BONIFACIO, MAKATI CITY	3	500
135	JOSE VIRAY MEMORIAL HOSPITAL	3525 MOLA ST., MAKATI CITY	0	0
136	OSPITAL NG MAKATI	MALUGAY, ST., MAKATI	2	50
137	MANILA NAVAL HOSPITAL	FORT BONIFACIO, MAKATI CITY	2	100
138	PHILIPPINE AIR FORCE GEN. HOSP.	VILLAMOR AIRBASE, PASAY CITY	2	150
139	MAKATI PERPETUAL HELP MAT. HOSP.	575 J.P. TIZAL ST., MAKATI CITY	1	10
140	HEALTHKARD CENTER	104 HERRERA ST., LEGASPI VILLAGE, MAKATI	0	0
141	MAKATI MEDICAL CENTER	2 AMORSOLO ST., MAKATI CITY	3	703
142	ASTHMA TREATMENT CENTER HOSPITAL	9821 KAMAGONG, SAV, MAKATI CITY	1	10
143	CLINICA ESTRERA	789 J.P. RIZAL ST., MAKATI CITY	1	0
144	ST. CLAIRE'S MEDICAL CENTER	1838 DIAN ST., MAKATI	0	0
145	QUEZON INSTITUTE	E. RODRIGUEZ AVE., QUEZON CITY	3	350
146	MEDICAL CITY	ORTIGAS COMPLEX, MANDALUYONG CITY	3	387
147	J.F. COTTON HOSPITAL (MERALCO)	ORTIGAS AVE., PASIG CITY	3	40
148	UERM MMC	AURORA BLVD., QUEZON CITY	3	0
149	ST. LUKE'S MEDICAL CENTER	279 E. RODRIGUEZ SR., Q.C.	3	650
150	PASIG MEDICAL & MATERNITY CLINIC	79 A. RODRIGUEZ AVE., ROSARIO, PASIG CITY	1	6
151	SABATER HOSPITAL	CARUNCHO AVE., PASIG CITY	2	15
152	PASIG CITY GENERAL HOSPITAL	F. LEGASPI EXT., MAYBUNGA, PASIG CITY	1	50
153	CLINIC OF THE HOLY SPIRIT	4 LOS ANGELES, CUBAO, QUEZON CITY	1	40
154	STO. NINO DE CEBU MAT. HOSP.	BRGY. SAN ISIDRO, DR. A. SANTOS AVE., SUCAT RD., PRQE.	1	6

NR	NAME	ADDRESS	CATEGORY	BED CAPACITY
155	SOUTH SUPERHIGHWAY MEDICAL CENTER	KM. 17 WEST SERVICE RD., SOUTH SUPERHI-WAY, PRQE.	3	50
156	HOLY MARY FAMILY HOSPITAL	34 BAGUMBAYAN, TAGUIG, METRO MANILA	1	11
157	D.T. PROTACIO HOSPITAL	484 QUIRINO AVE., TAMBO, PARANAQUE	2	30
158	STA. RITA DE BACLARAN HOSPITAL	95 GG CRUZ ST., BACLARAN	2	25
159	DONA MARTA MATERNITY & LYING-IN HOS	37 DON CARLOS RIVILLA ST., PASAY CITY	1	25