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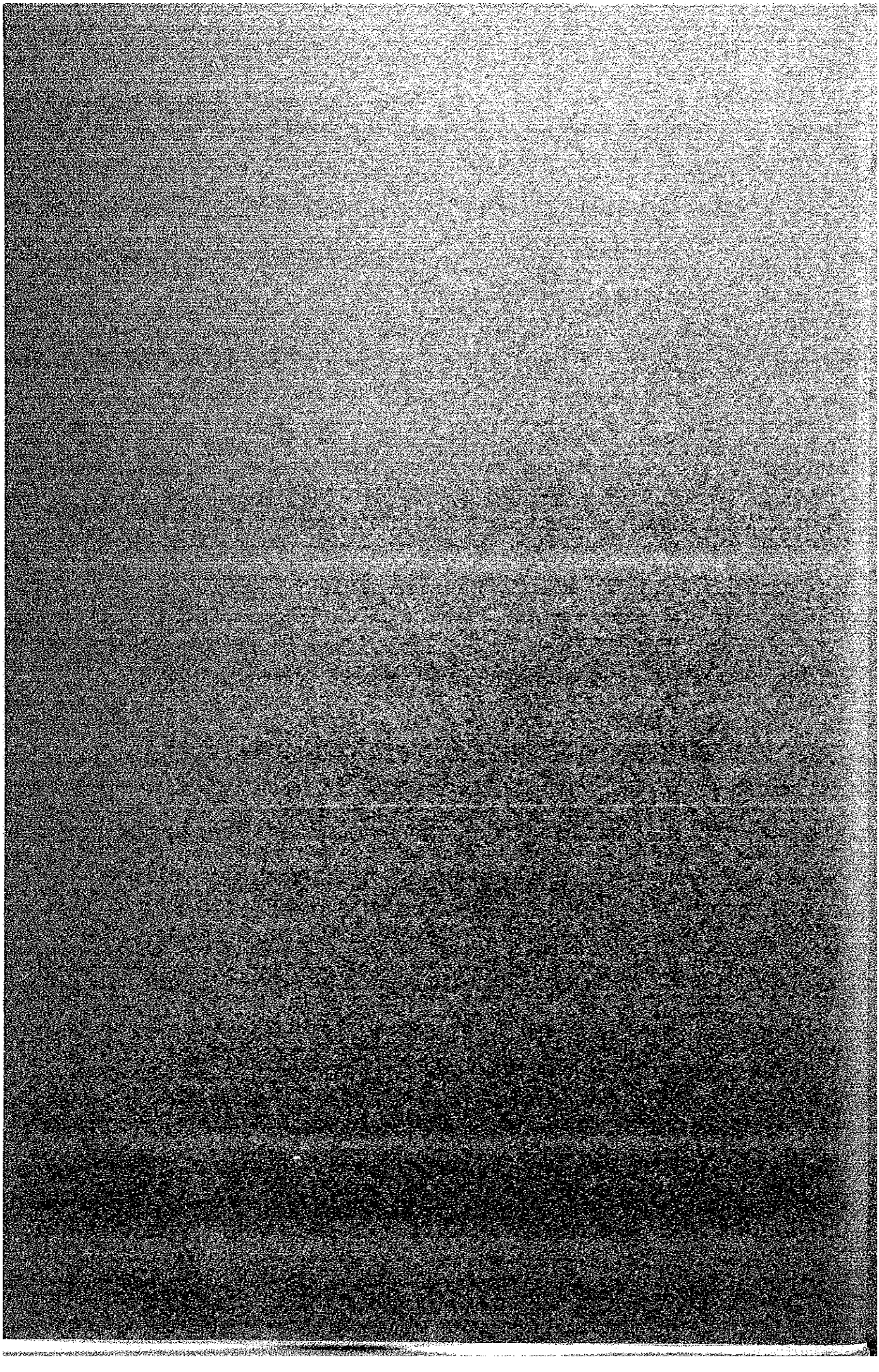

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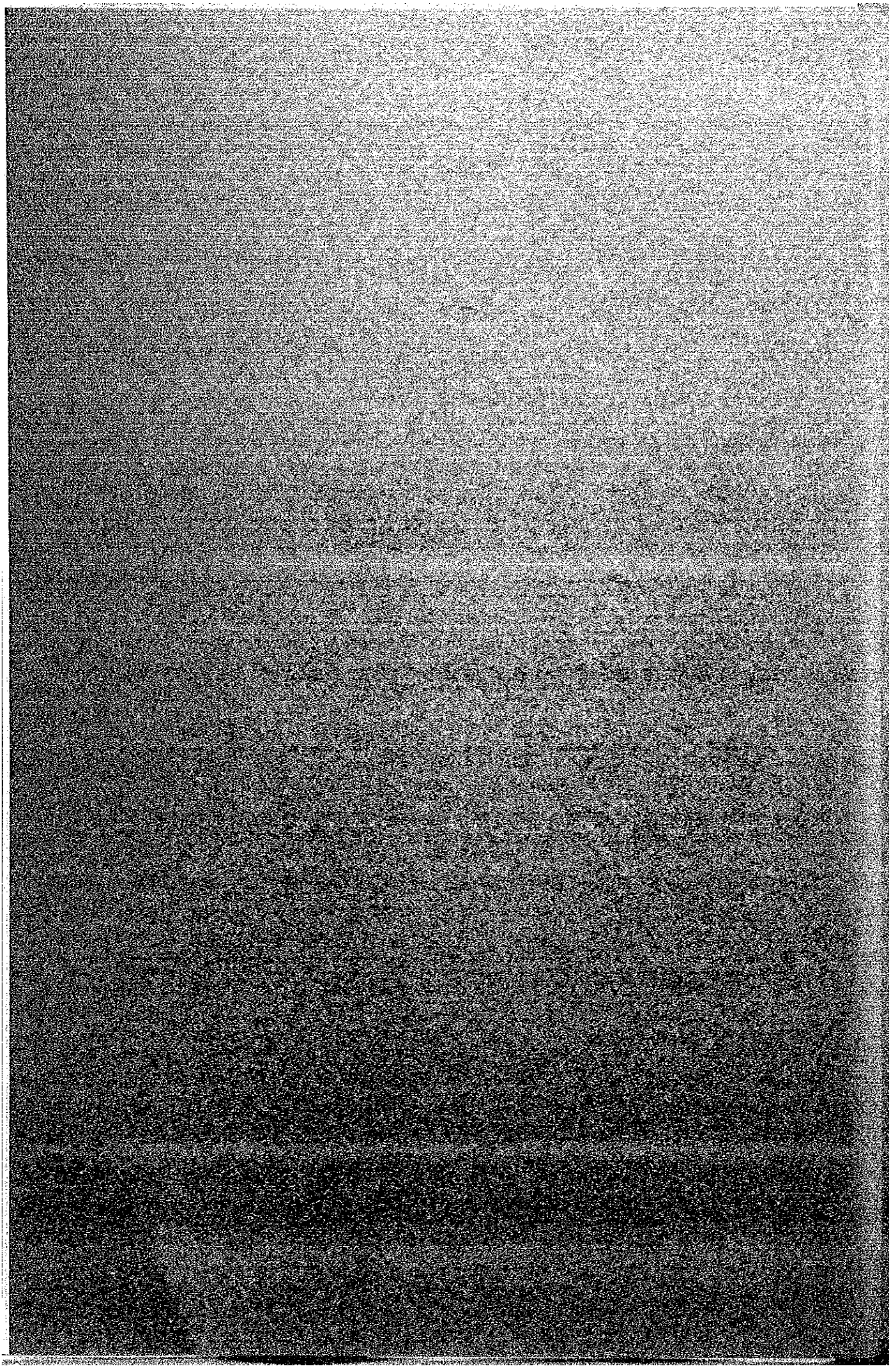

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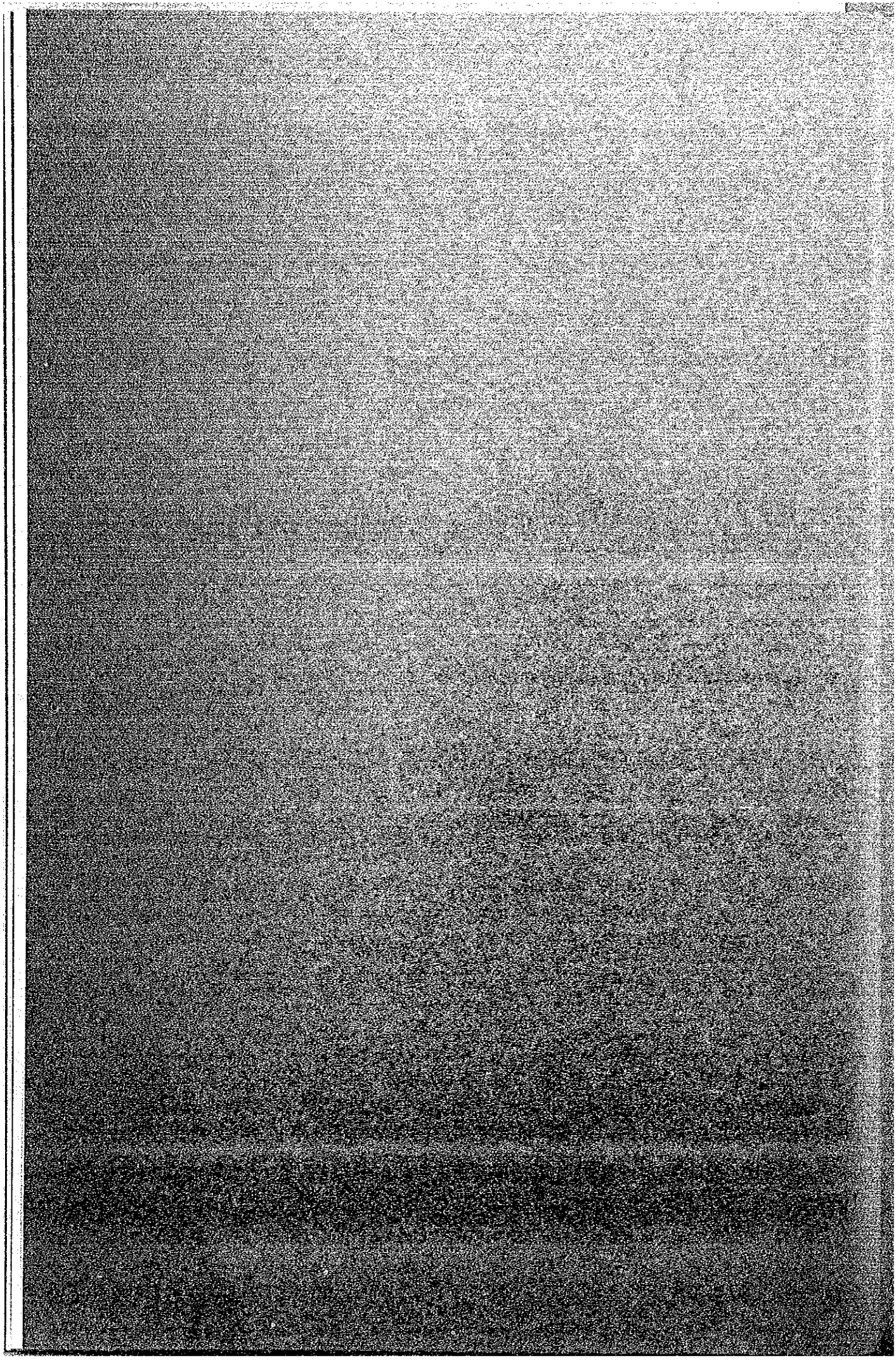
CHAPTER 1 INTRODUCTION



Chapter 1 INTRODUCTION

1.1 Background of The Project

Metro Manila is, by far, the largest single urban area in the Philippines with a population of 6 million. It produces nearly one-third of the nation's Gross National Product, and by value, accounts for close to a half of both secondary activity (manufacturing and construction) and tertiary activity (government, commerce and services). Being the center of activity in the country, it offers better chances for higher education and cultural activities. Metro Manila has been and will continue to be, the main focus of human activities, generating social and economic benefits that have important multiplier effects over the rest of the country.

Bigger opportunities for social and economic advancement in Manila tend to attract rural dwellers to Manila which has doubled and redoubled its population since the post-war. The population increase in Metro Manila indicates a continuing trend towards the intensification of residential development and densities within the main built-up area. Around the fringes of the built-up area and in the rapidly growing suburbs further intensification of development and continued outward expansion can be identified. The areas beyond Epifanio de los Santos Avenue (EDSA or C-4) are increasingly subject to the pressure of urbanization and need to accommodate many of Manila's people in the 1980's and beyond.

The rapid urban expansion in Metro Manila inevitably gives rise to the Philippines greatest concentration of urban problems - employment, housing, flooding, health, education, the delivery of social and utility services, as well as transport which are all exacerbated by growth.

Expansion of the urban area is occurring on all three of the landward sides of Metro Manila - the north, the east and the south. The existing roads south of Metro Manila except for the South Luzon Expressway have almost reached their traffic capacities, causing traffic congestion.

The roads of the Southern Package of the Metro Manila Outer Major Roads Project will not only make up the vital portion of the trunk road network of Metro Manila and reduce traffic congestion but will also allow the land use pattern for the region to be improved. The implementation of the Project must therefore be geared towards the most urgent use of various potentials conceived in the region to attain the optimum economic and social development.

Under these circumstances the Government of the Philippines hereinafter referred to as the "Government", recognizing the need for a feasibility study, requested technical assistance from the Government of Japan for the conduct of the feasibility study for the said major roads under the "Metro Manila Outer Major Roads Package". In Compliance with the request of the Government of the Philippines the Government of Japan has agreed to extend technical cooperation to the Government for the said study.

1.2 Conduct of the Study

The Study was undertaken by the Study Team composed of Japanese consultants and the counterparts of the Ministry of Public Works and Highways (MPWH). The Japanese consultants were assigned by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of technical programs of the Government of Japan in close cooperation with the Government.

The Japanese members of the Study Team dispatched by JICA stayed in Manila from March 15, 1981 to December 25, 1981. Supportive work was done in the head office of Pacific Consultants International in Tokyo using the consultant's electronic computer facilities.

The Supervisory Committee (members of the Japanese Government) held meetings in Tokyo as the need arose, observing the team's progress and providing necessary advice. The representatives of the Supervisory Committee made four separate visits to Manila during the period to discuss directly with the members matters that would support the team, confirming the essential points of decision with the Government.

1.3 Organization of the Project Teams

The Study was carried out jointly by JICA and the MPWH. The Supervisory Committee and the Study Team were organized by JICA, while the Steering Committee and the MPWH Counterpart Team by the MPWH. The staff who directly participated in the Study included the following members:

A. SUPERVISORY COMMITTEE MEMBERS OF THE JAPANESE GOVERNMENT

Takao Okamoto (Chairman)	Tokyo Metropolitan Expressway Public Corporation
Hirohide Konami	Ministry of Construction, Japan
Katsunari Tsuji	Ministry of Construction, Japan
Shigeaki Matsubara	Ministry of Construction, Japan
Takashi Furusho	Ministry of Construction, Japan
Kyojin Mima	Japan International Cooperation Agency
- Predecessors -	
Takehide Miyoshi (Chairman)	Ministry of Construction, Japan
Souichi Kubota	Ministry of Construction, Japan

B. STEERING COMMITTEE MEMBERS OF THE MINISTRY OF PUBLIC WORKS AND HIGHWAYS

Jose F. David	Assistant Secretary for Planning
Teodoro T. Gutierrez	Director, Bureau of Construction
Prudencio F. Baranda	Director, Planning and Project Development Office (PPDO)
Juanito F. Cutay	Executive Director, Special Projects Office (SPO)
Amor C. Cenidoza	Chief Design Engineer, Bureau of Construction
Tateo Ashimi	Consultant, PPDO
Tatsuro Ogihara	Consultant, PPDO (Predecessor)

As a result of the changes in the set-up of the MPWH, the above composition of the Steering Committee was revised to take effect on February 12, 1982. The new committee members are as follows:

Teodoro T. Encarnacion	Assistant Minister for Planning
Exequiel Gumayan	Assistant Director, PPDO
Candelario Patino	Director, Bureau of Construction
Juanito F. Cutay	Executive Director, Special Projects Office
Amor C. Cenidoza	Chief Design Engineer, Bureau of Construction
Tateo Ashimi	Consultant, PPDO

C. JICA Study Team (Pacific Consultants International)

Kunio Teshima	Team Leader
Toshiaki Fujimoto	Traffic Planning/Transportation Economy
Daihachiro Kamimura	Traffic Planning
Kinich Kato	Traffic Survey & Analysis
Yuji Itai	City Planning
Teruhiko Horie	Regional Planning/Economic Analysis
Masashi Hattori	Environmental Assessment
Kengo Ueda	Highway Planning
Yoshimi Takai	Highway Structure Planning
Sakae Takada	Soils and Materials Analysis
Shigeyoshi Kurihara	Hydrology

D. MPWH COUNTERPARTS

Francisco C. Reyes	Project Manager
Elisa P. Joson	Highway Engineer
Linda M. Templo	Environmental Specialist
Malaquias L. Santos	Traffic Planner
Lota V. Contreras	Transportation Economist
Rodolfo Z. Serdena	Construction Specialist

1.4 Study Objectives

The purpose of the Study is to assess the technical and economic viability of the Project Roads of the Metro Manila Outer Major Roads Project, Southern Package, undertaking all components of a feasibility study, including traffic forecast, preliminary engineering, environmental impact, economic analysis and implementation schemes for possible financial assistance from international financing institutions.

With reference to the appended Project Location Map, the road sections and junctions to be covered by the Scope of Work were as follows:

Road Sections:

- Paranaque-Sucat Road (Existing)	7.5 km
- Zapote-Alabang Road (Existing)	10.3 km
- Taguig-Las Pinas-Muntinlupa Loop Road (New)	20.7 km
Total Length: Approximately	38.5 km

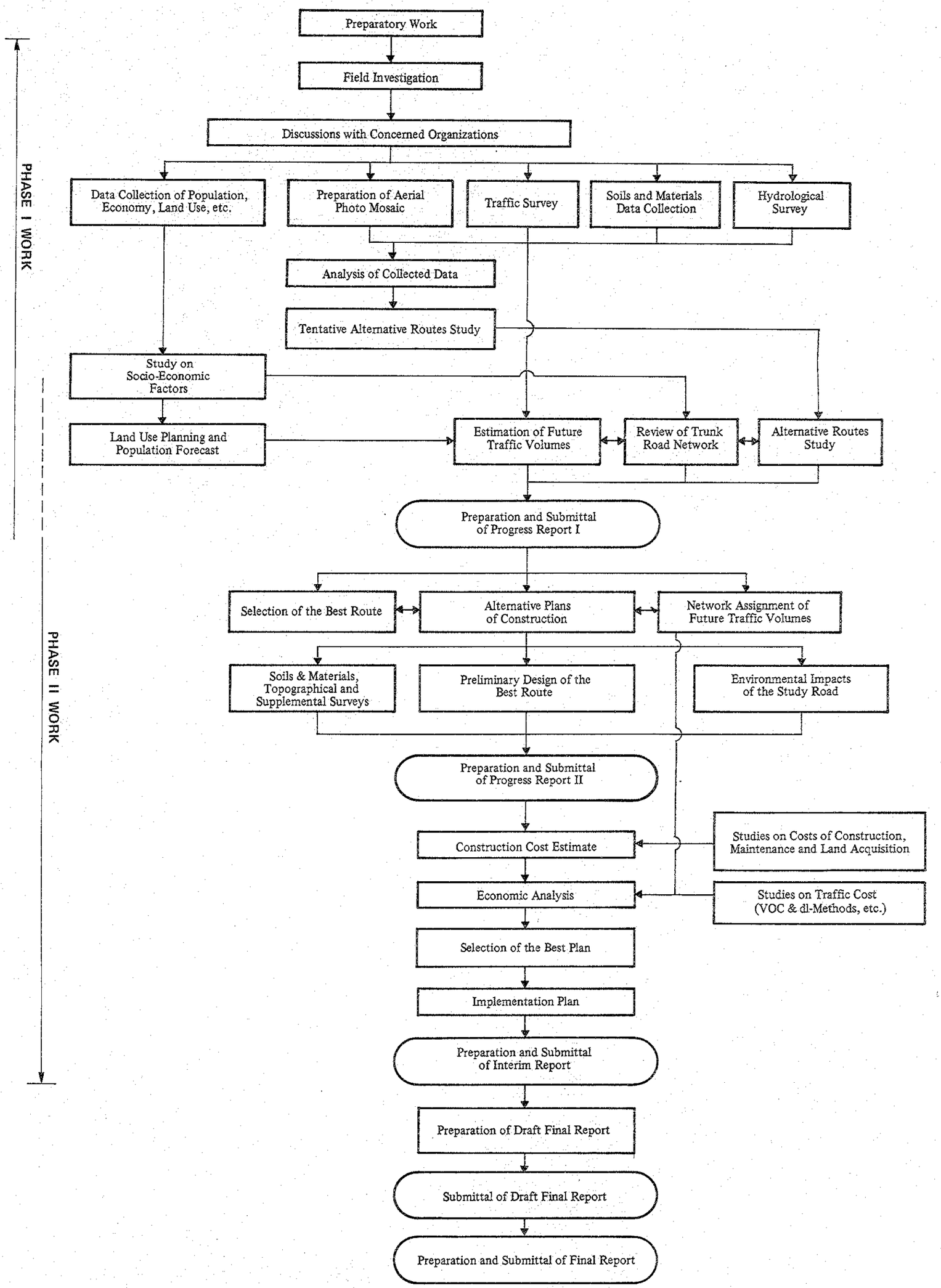
Major Junctions:

- Bicutan Interchange of Manila South Expressway;
- Paranaque-Sucat and Loop Road Intersection;
- Zapote-Alabang and Loop Road Intersection;
- Imelda Avenue Extension and Paranaque-Sucat Road Intersection;
- Zapote Junction along the Manila South Road;
- Paranaque Junction along the Manila South Road; and
- Manila South Road and Loop Road Intersection

1.5 Study Approach

Based on the scope of the Study, the work was carried out in two phases under the headings of Phase I and Phase II. These phases were further subdivided into logical functions as briefly shown in Fig. 1.5-1.

FIG. 1.5-1 BRIEF WORK FLOW OF THE STUDY



The general scope of work for these phases is summarized as follows:

Phase I of the Study consisted of establishment of the essential background information, including the following:

Field investigations, discussions with concerned organizations, data collection, preparation of mosaic aerial photographs, traffic surveys, soils and materials surveys, hydrological survey, primary analysis of collected data, analyses of socio-economic data, land use planning, review of trunk road network, and study of alternative routes.

Phase II of the Study covered:

Population projection, estimate of future traffic volumes, alternative route study, selection of the best routes, soils and materials surveys, topographical survey, supplemental surveys, preliminary design of the best routes, environmental impacts, data collection relative to construction and maintenance, land acquisition costs, construction cost estimates, economic analyses, and implementation plans.

The Study was conducted from March 15, 1981 to December 25, 1981 in close cooperation with the MPWH Counterparts.

At the end of the Phase I work, Progress Report I was prepared containing the results thereof. The comments thereon from the Government and from the Supervisory Committee were incorporated in the Phase II work. Progress Report II was prepared in September 1981 to present the outcome of the work in Phase II, and similarly, the comments thereon were incorporated in the remaining work and in the preparation of the Interim Report.

The Interim Report contained the results of all the work of the Study which the Study Team had completed in the Philippines, summarizing the work for both Phase I and Phase II.

The Draft Final Report was prepared in January 1982 in Japan, incorporating the comments from the MPWH on the study work of the Interim Report. It was discussed with the MPWH for comments, and similarly the comments thereon were incorporated in this Final Report, which is being submitted at the end of March 1982.

1.6 Volumes of the Report

The report on the Feasibility Study for the Metro Manila Outer Major Roads Project - Southern Package - consists of TEXT, APPENDIX and DRAWINGS.

1.7 Abbreviations

A. Authorities and Bodies

ADB	Asian Development Bank
CAA	Civil Aviation Authority
CDCP	Construction and Development Corporation of the Philippines
IBRD	International Bank for Reconstruction and Development
JICA	Japan International Cooperation Agency
MMC	Metro Manila Commission
MPWH	Ministry of Public Works and Highways
NCSO	National Census and Statistics Office
NEDA	National Economic and Development Authority
NEPC	National Environmental Protection Council
NIA	National Irrigation Administration
NPCC	National Pollution Control Commission
PNR	Philippine National Railways
PPDO	Planning and Project Development Office, MPWH
SPO	Special Projects Office, MPWH

B. Other Abbreviations

AADT	Annual Average Daily Traffic
B.	Bus(es)
BC, B/C	Benefit-Cost, Benefit/Cost
B.E.	Bed Elevation
CBD	Central Business District
cm	Centimeter(s)
CO	Car-owning, or Car-owner(s)
Cu.M.	Cubic Meter(s)
dB	Decibel(s)
DIZ	Direct Influence Zone
GDP	Gross Domestic Product
GNP	Gross National Product
ha.	Hectare(s)
H.W.L.	High Water Level
IRR	Internal Rate of Return
J	Jeepney(s)
km^2	Square Kilometer(s)
km/h, KPH	Kilometer(s) per Hour
L.M.	Linear Meter(s)
MIA	Manila International Airport
MMA	Metro Manila Area
MME	Metro Manila Expressway
m, M	Meter(s)
mm	Millimeter(s)
MMETROPLAN	Metro Manila Transport, Land Use and Development Planning Project
m/sec, m/s	Meters per Second
m^3/sec	Cubic Meters per Second
M.T.	Metric Ton(s)
NCO	Non-Car Owning or Non-Car Owner(s)
NCR	National Capital Region

O-D, OD	Origin-Destination
P.C., P.S.C.	Prestressed Concrete
P.C.U.	Passenger Car Unit
PW	Present Worth
Q-V	Quantity-Velocity
R.C.	Reinforced Concrete
ROW	Right-of-Way
S, Sm	Small Vehicle(s)
Sq.M.	Square Meter(s)
T.	Truck(s)
UTSUMMA	Urban Transportation Study in Metropolitan Manila Area
VEH/HR	Vehicles per Hour
VEH/DAY	Vehicles per Day
VOC	Vehicle Operating Cost