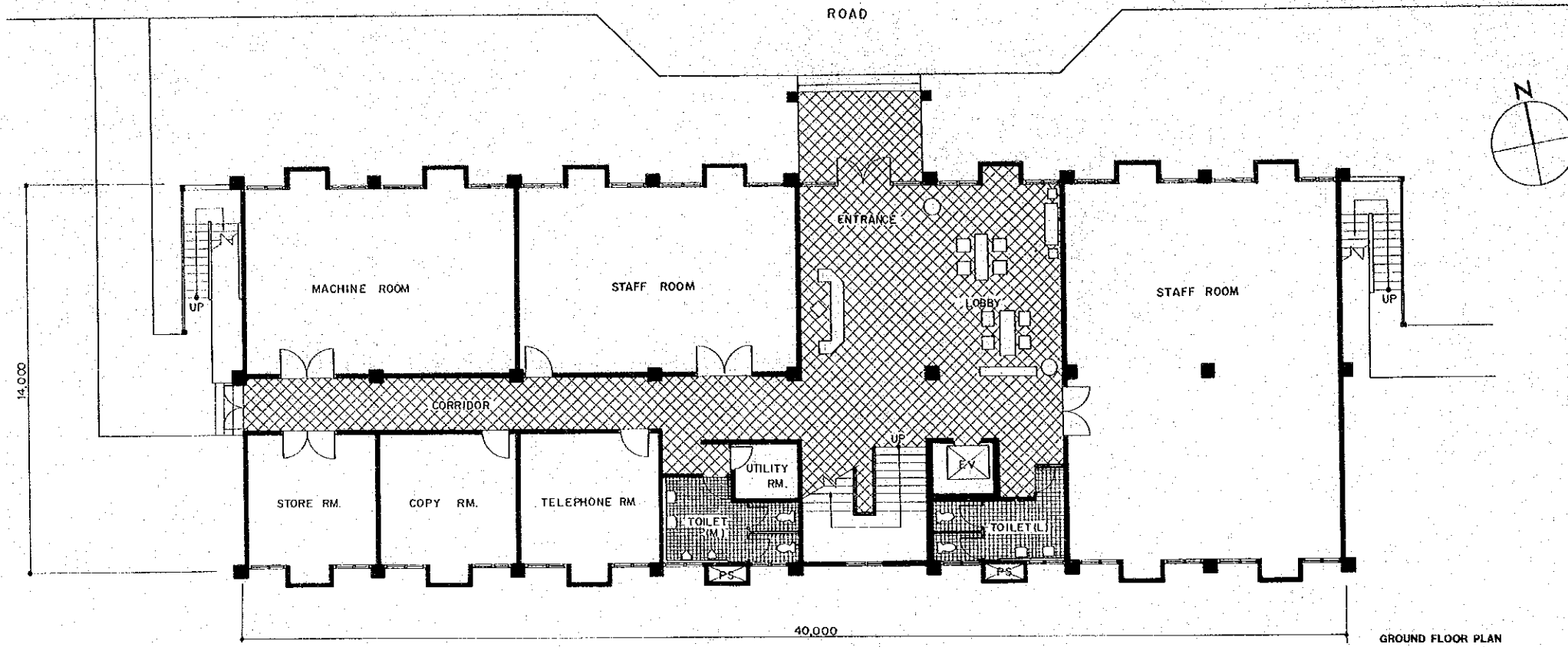


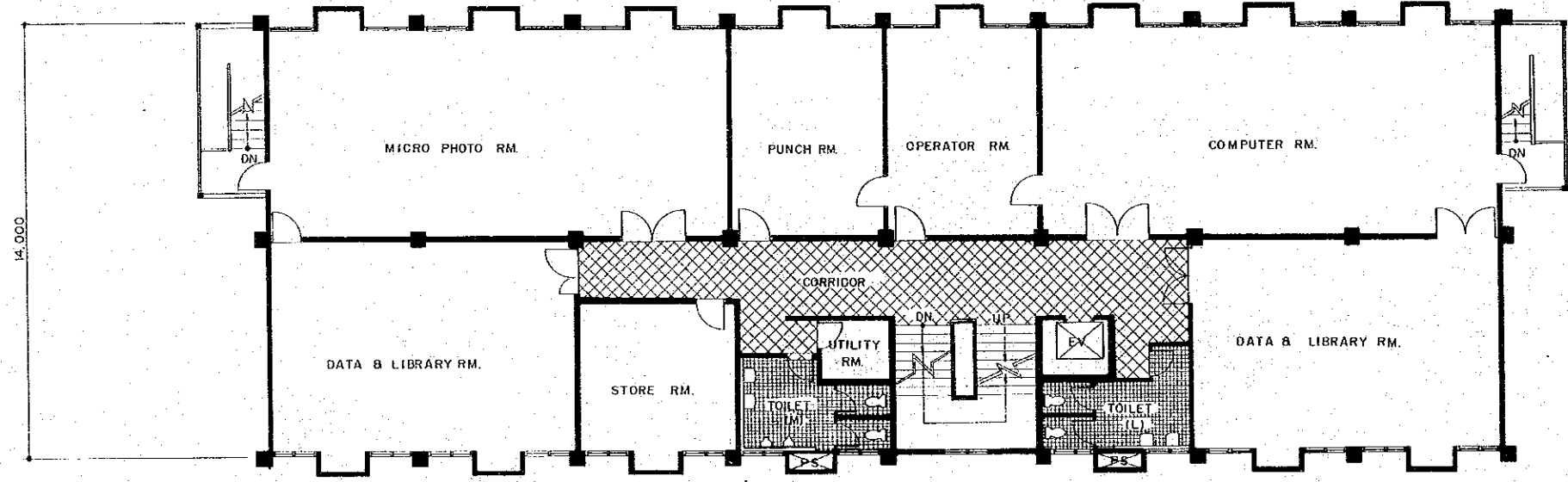
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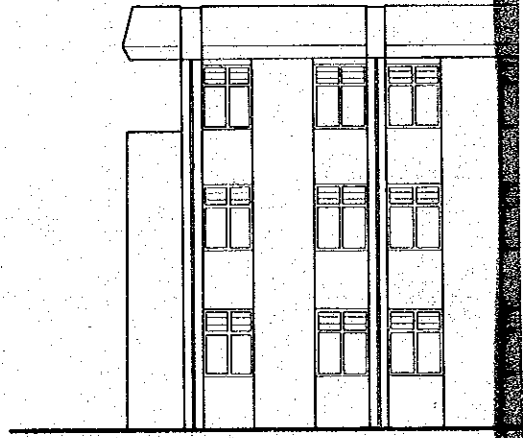
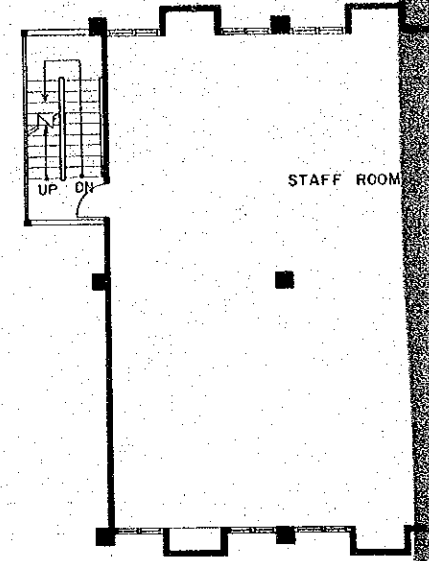
GROUND FLOOR PLAN

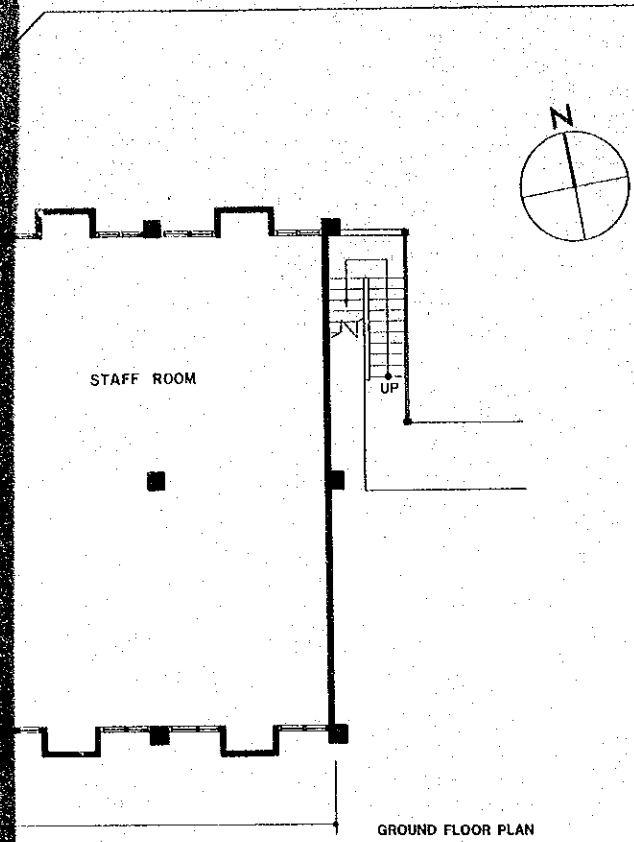
INFORMATION CENTER

Floor Area	
G.F.	560.0M ²
1 F.	.
2 F.	.
R.F.	55.8
	1735.8

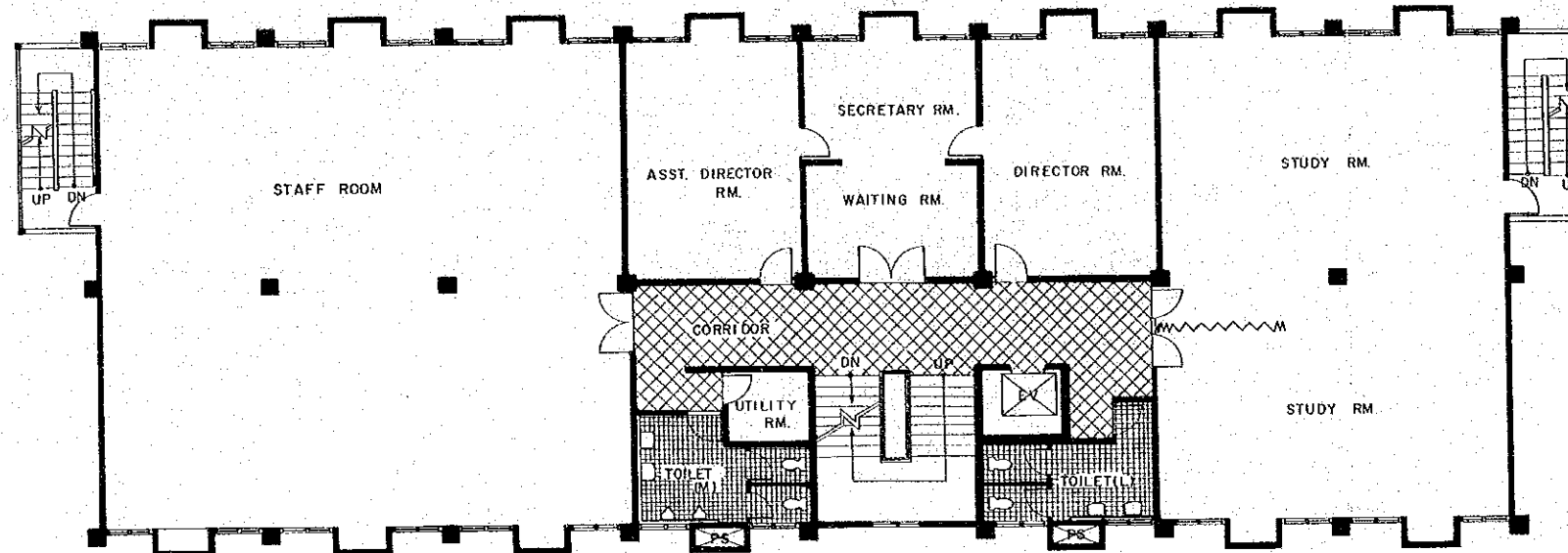
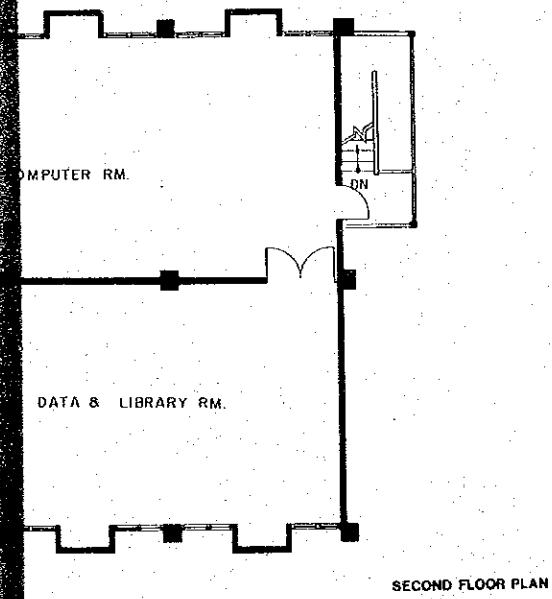


SECOND FLOOR PLAN

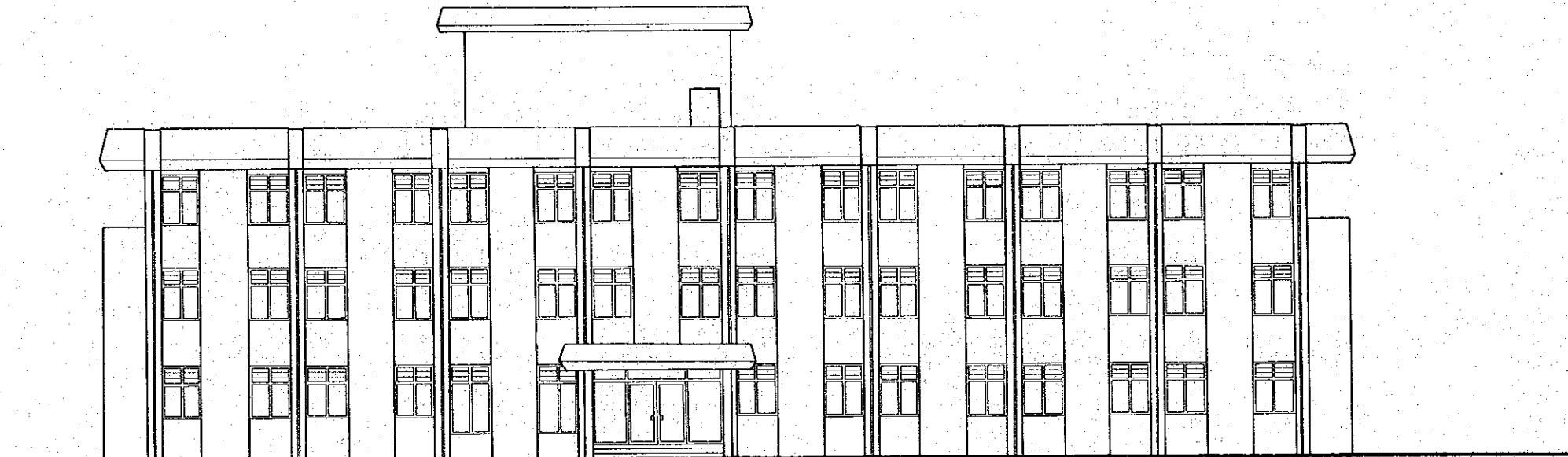




560.0m²
 .
 .
 55.8
 1735.8

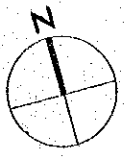
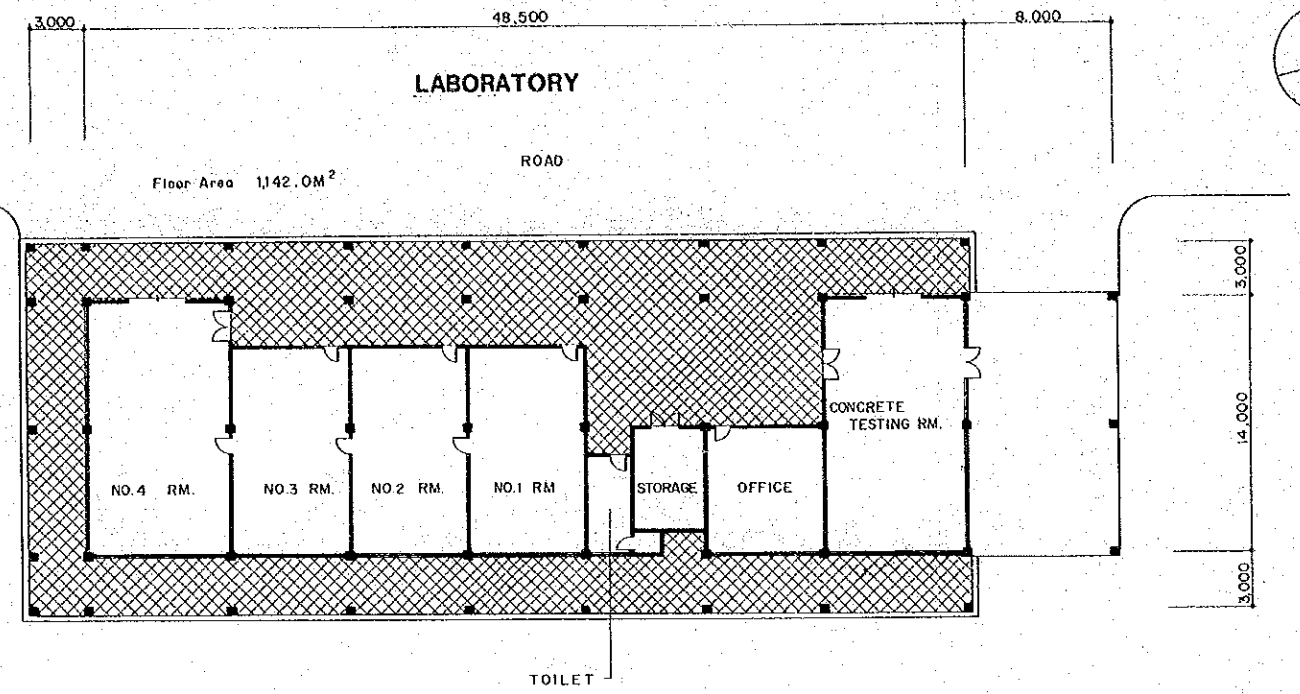
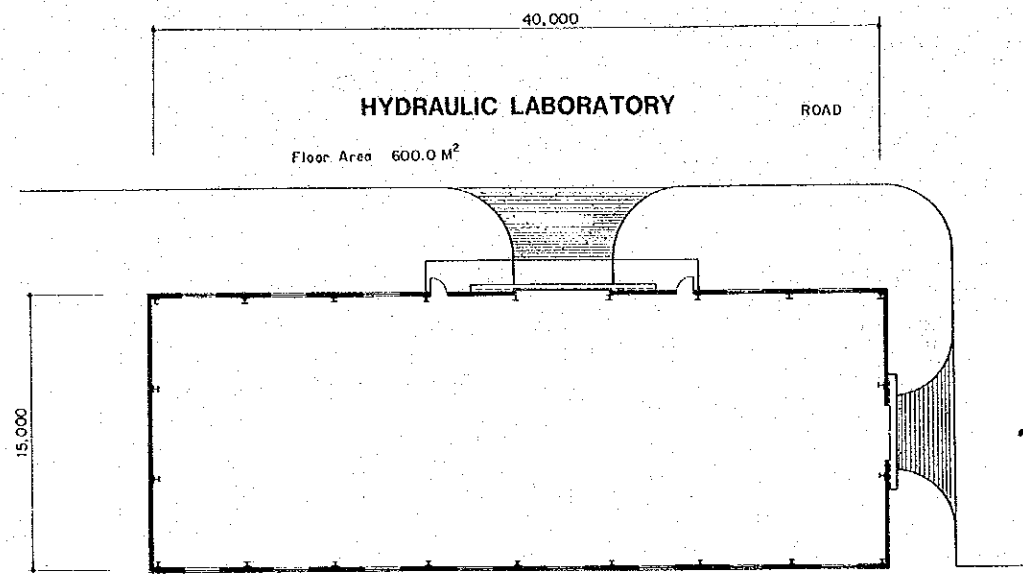


FIRST FLOOR PLAN

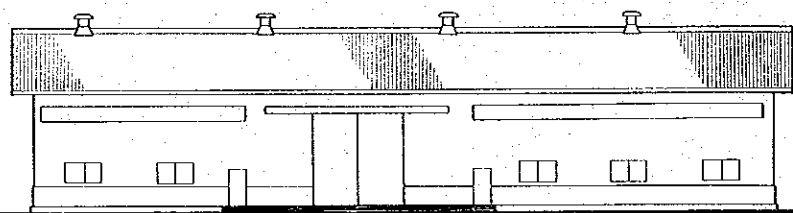


NORTH ELEVATION

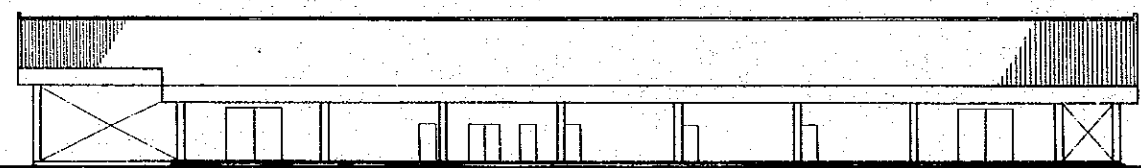
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PLAN

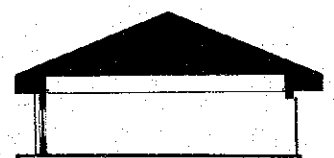


HYDRAULIC LABORATORY

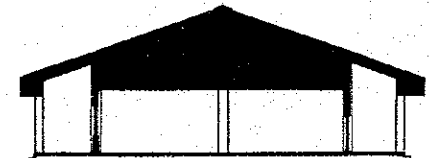


LABORATORY

NORTH

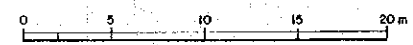


HYDRAULIC LABORATORY

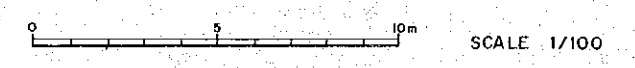
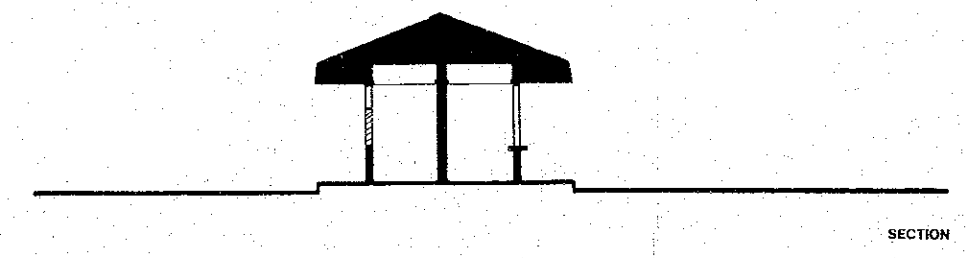
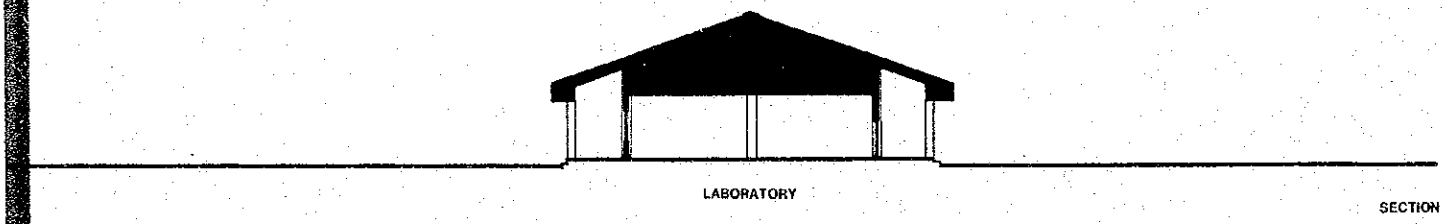
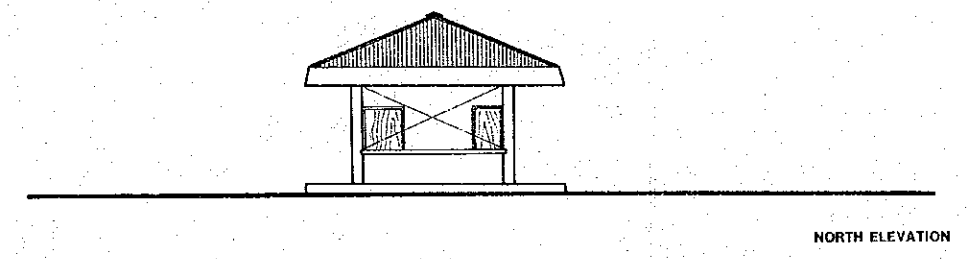
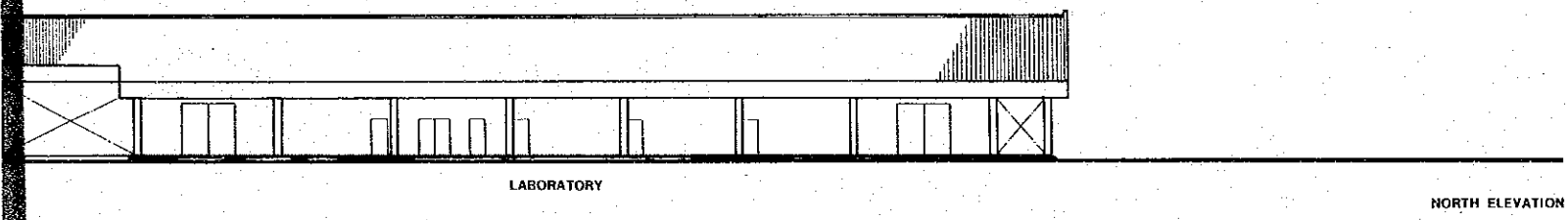
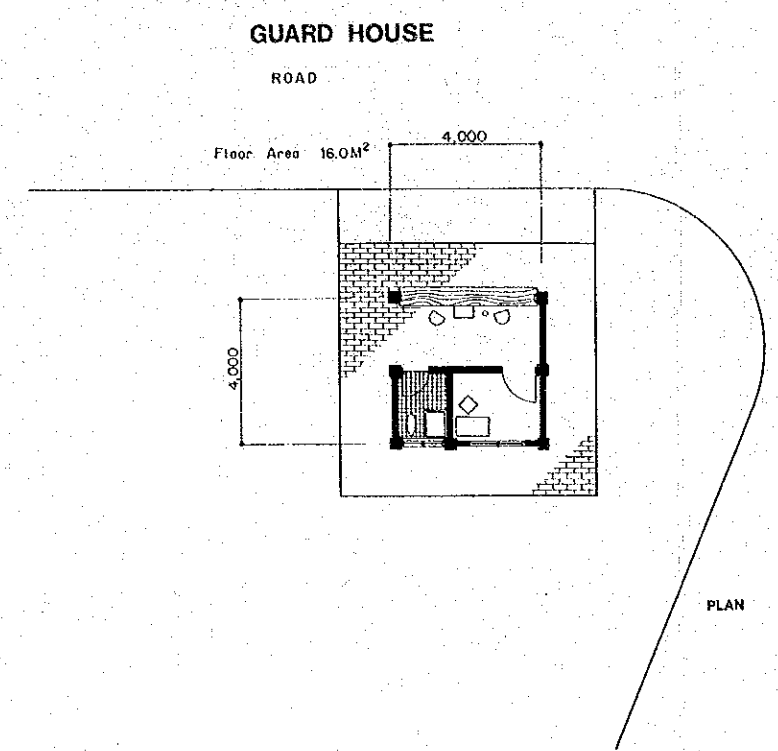
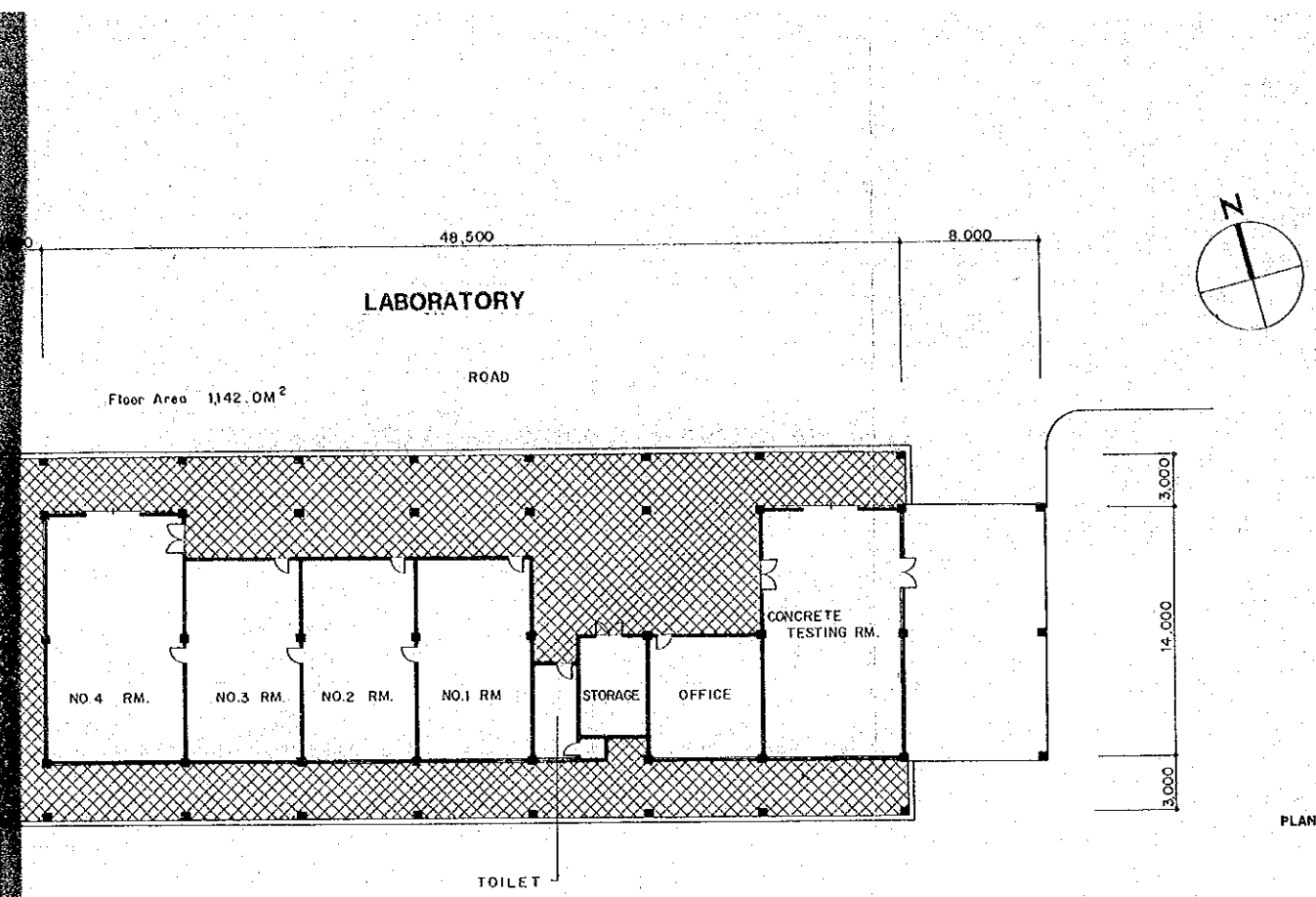


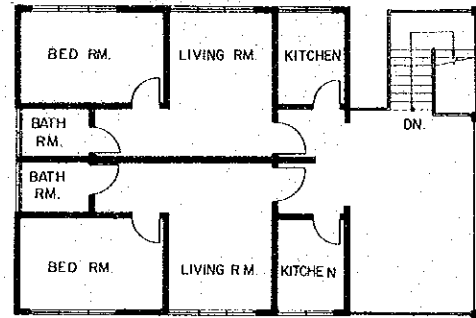
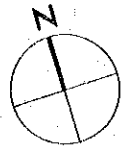
LABORATORY

SECTION

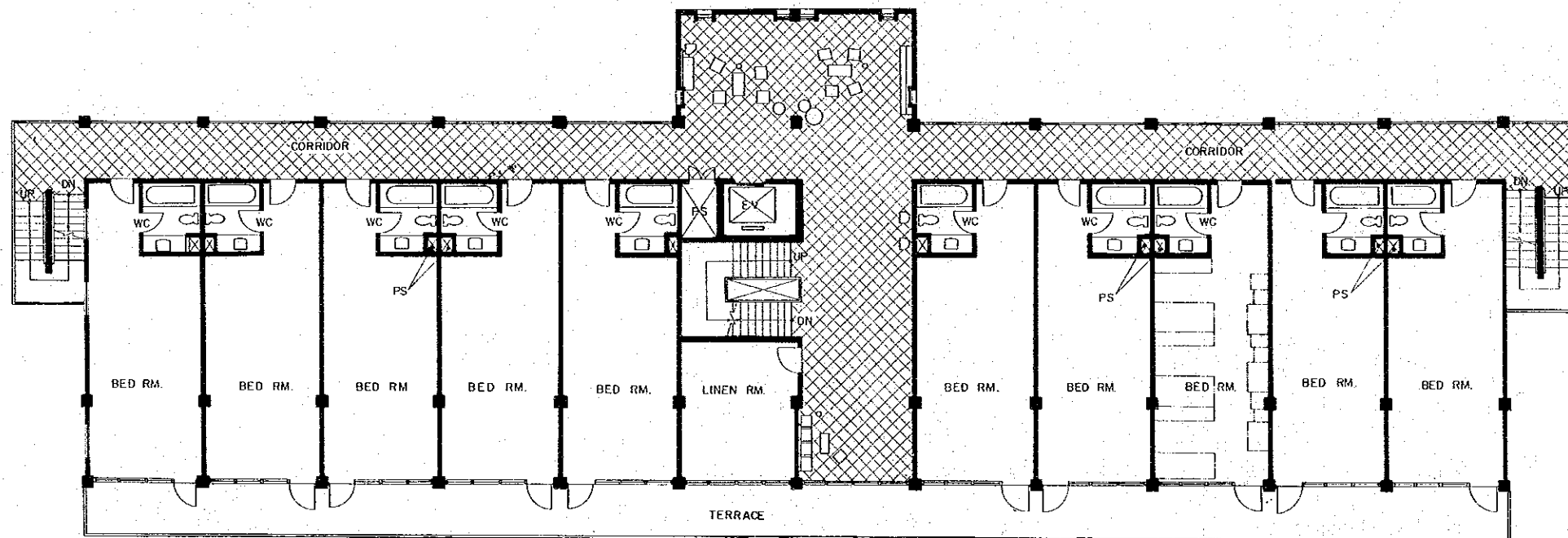
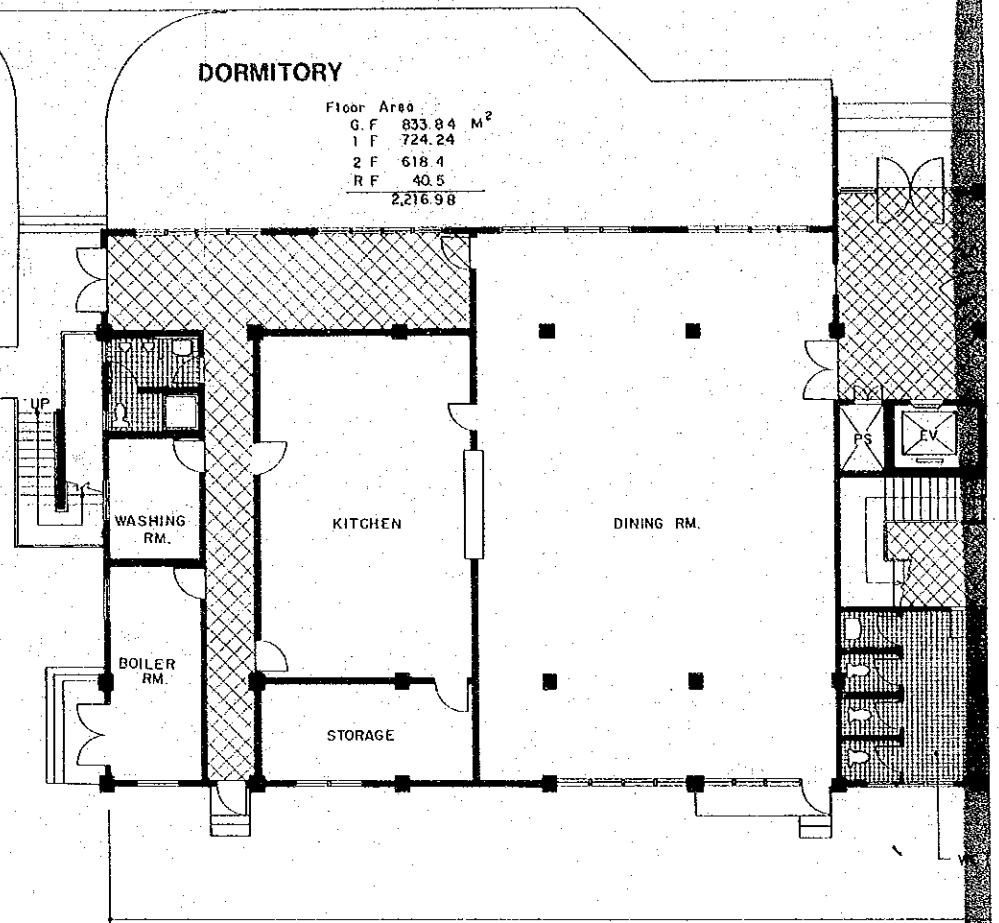
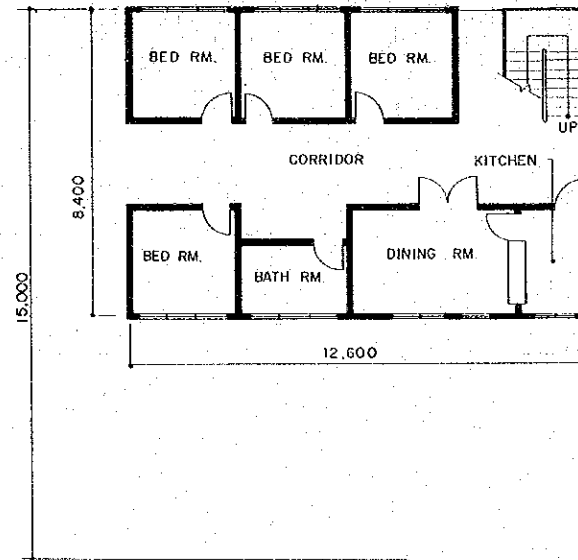


SCALE 1/200

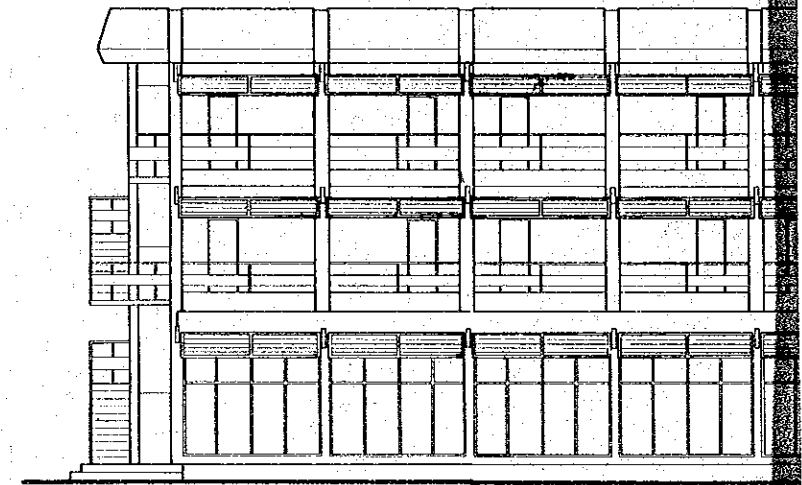


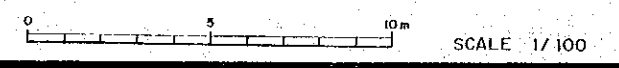
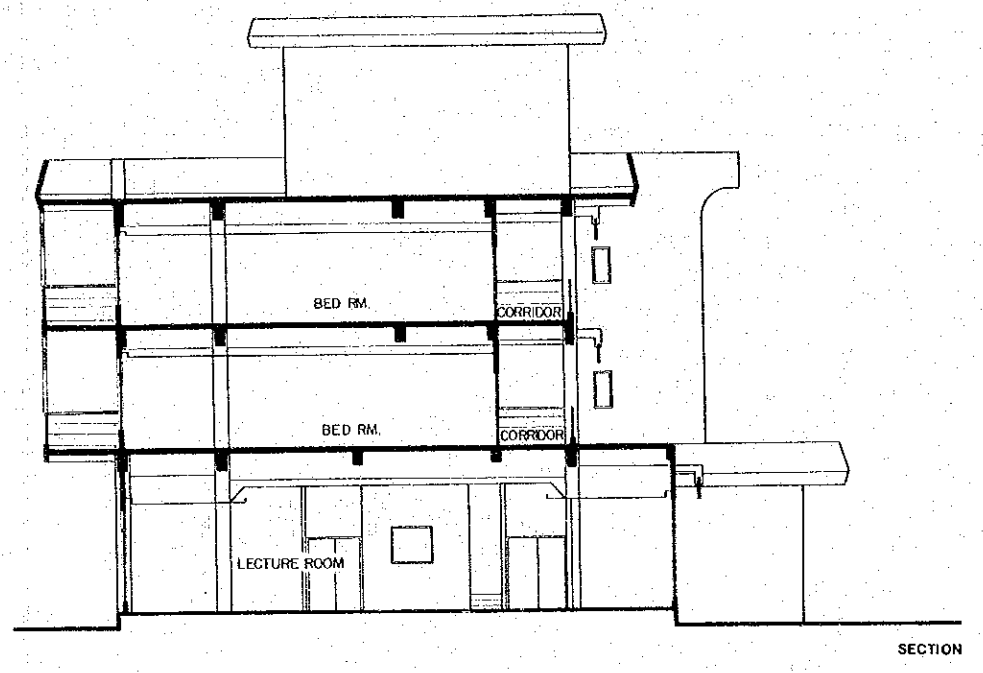
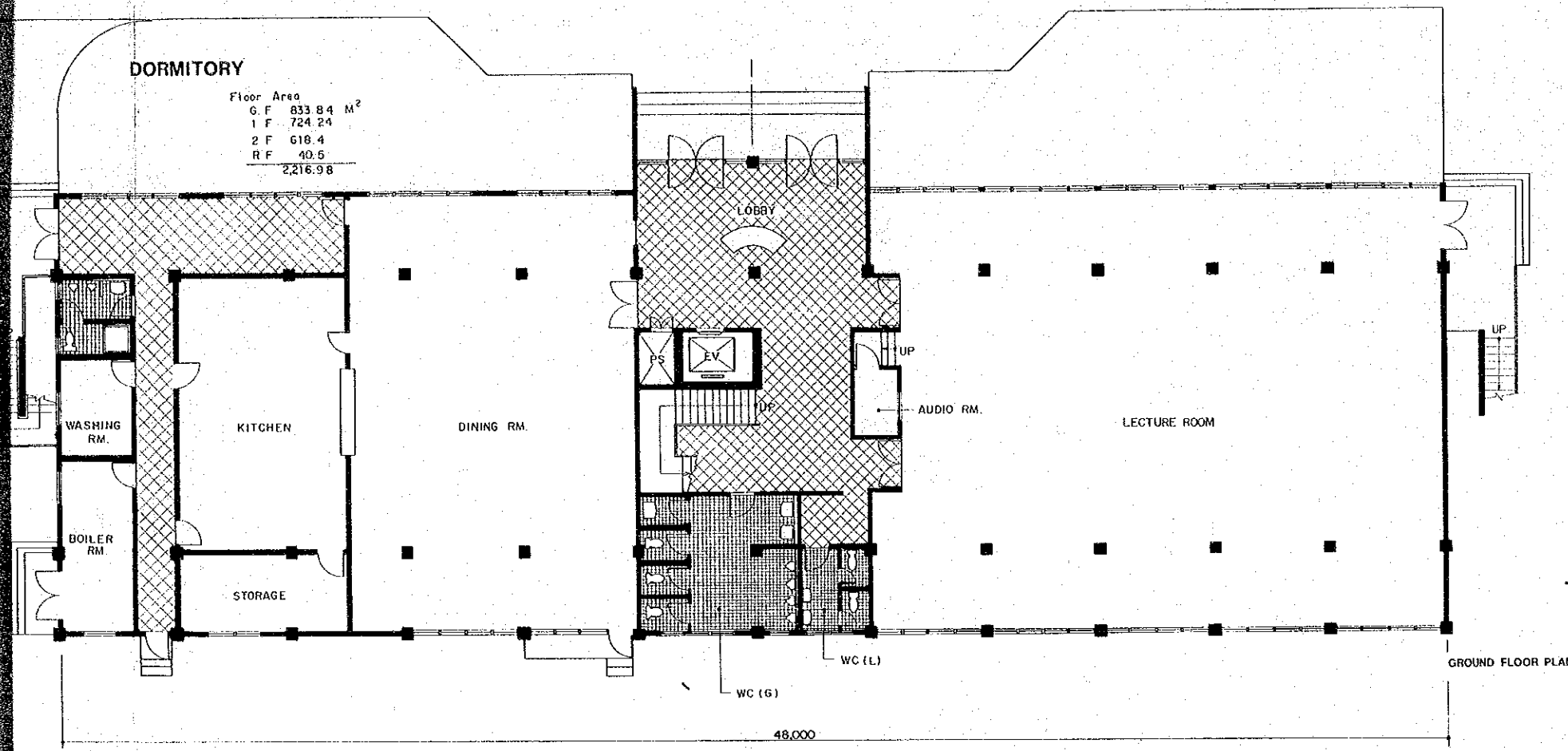


FIRST FLOOR PLAN

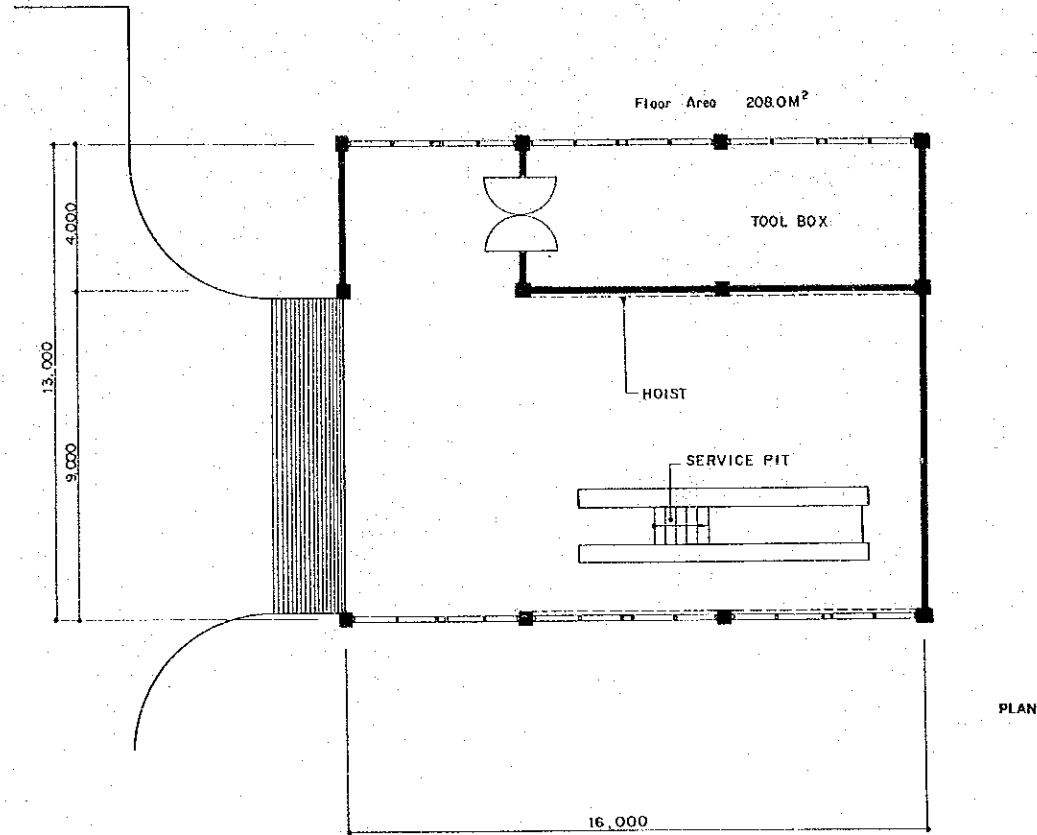


FIRST & SECOND FLOOR PLAN



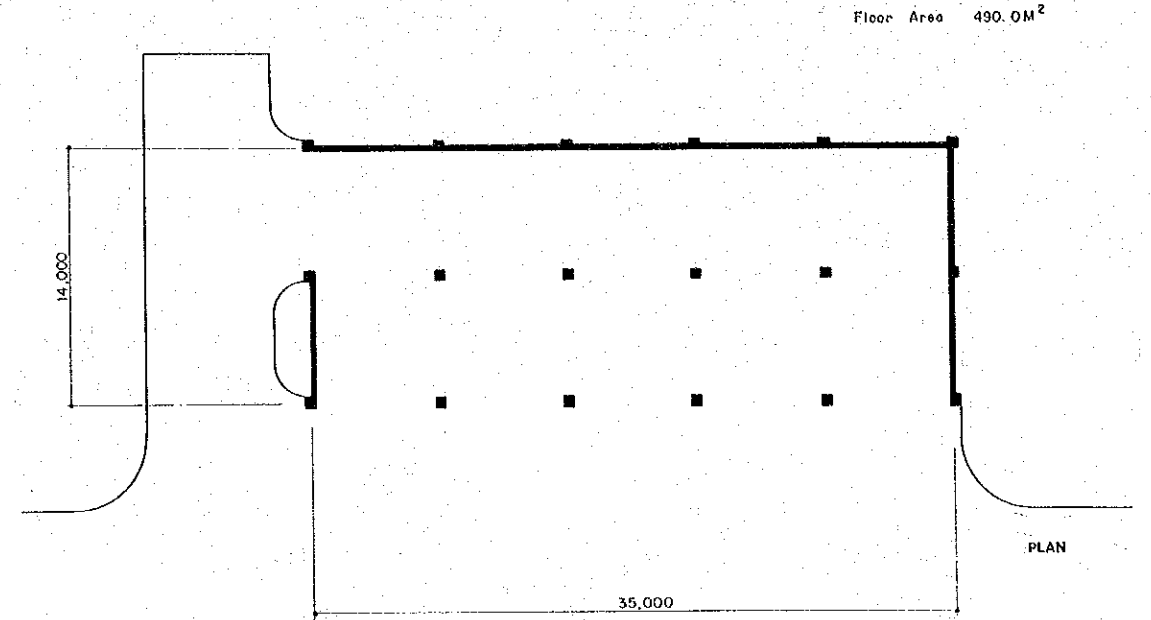


REPAIR TRAINING SHOP

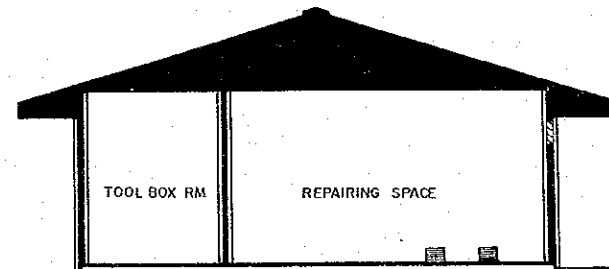


PLAN

GARAGE FOR CONSTRUCTION EQUIPMENT



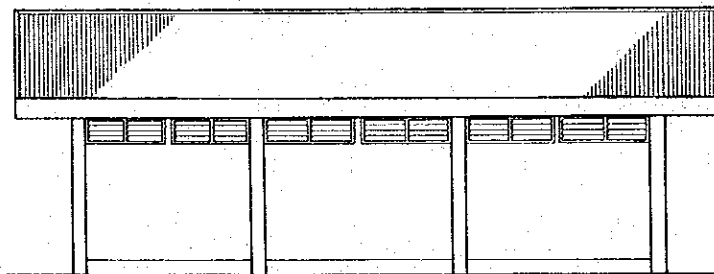
PLAN



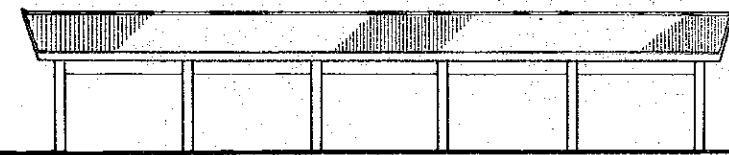
REPAIR TRAINING SHOP



GARAGE FOR CONSTRUCTION EQUIPMENT



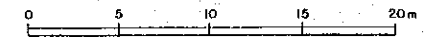
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GARAGE FOR CONSTRUCTION EQUIPMENT



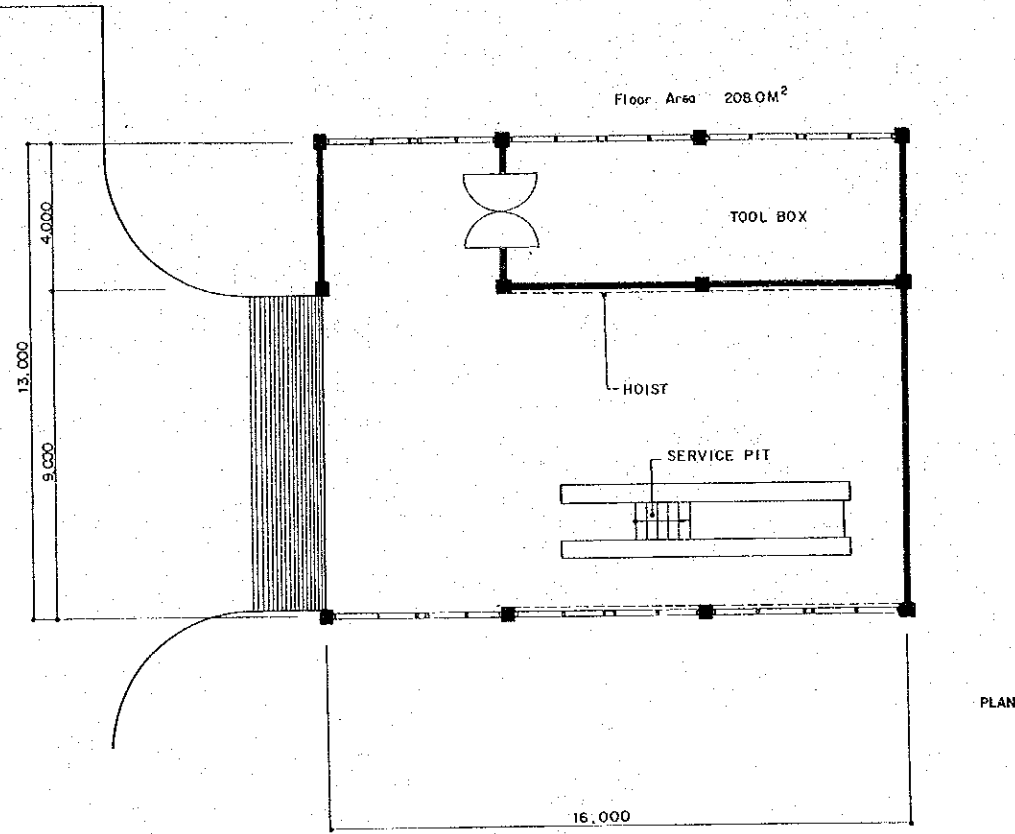
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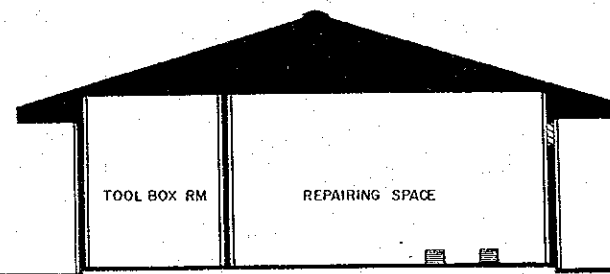
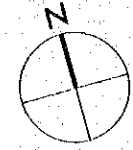
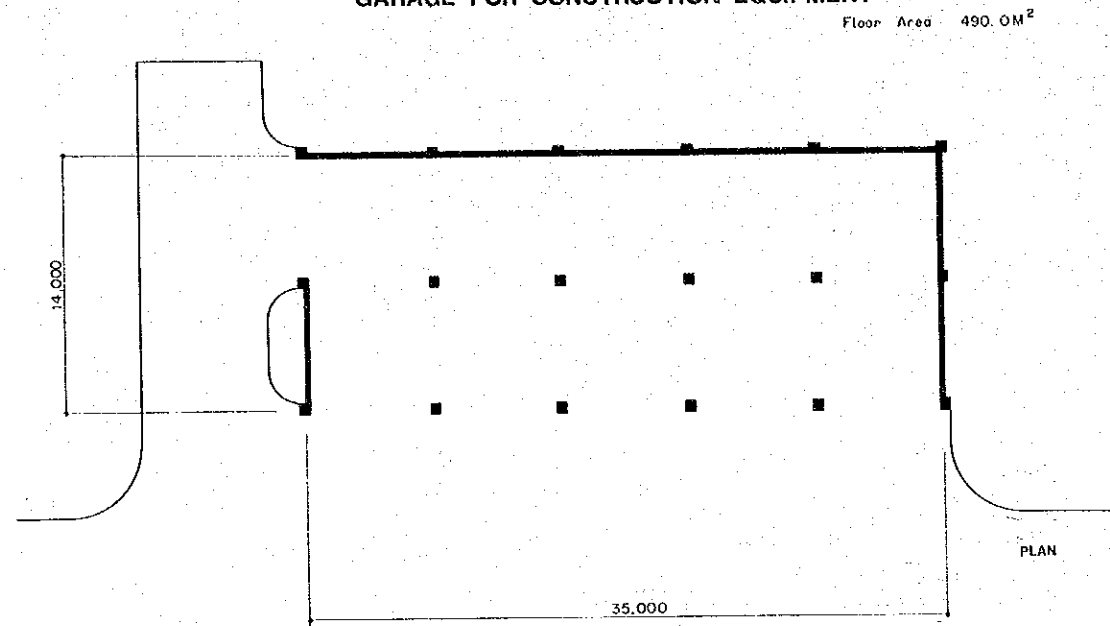
SCALE 1/200

REPAIR TRAINING SHOP / GARAGE FOR CONSTRUCTION EQUIP

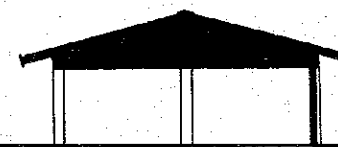
REPAIR TRAINING SHOP



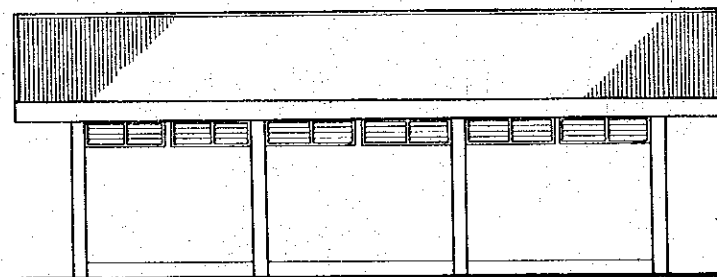
GARAGE FOR CONSTRUCTION EQUIPMENT



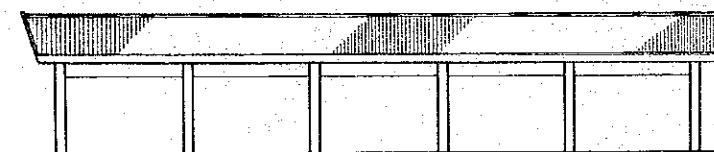
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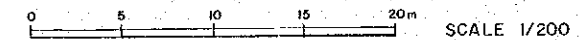
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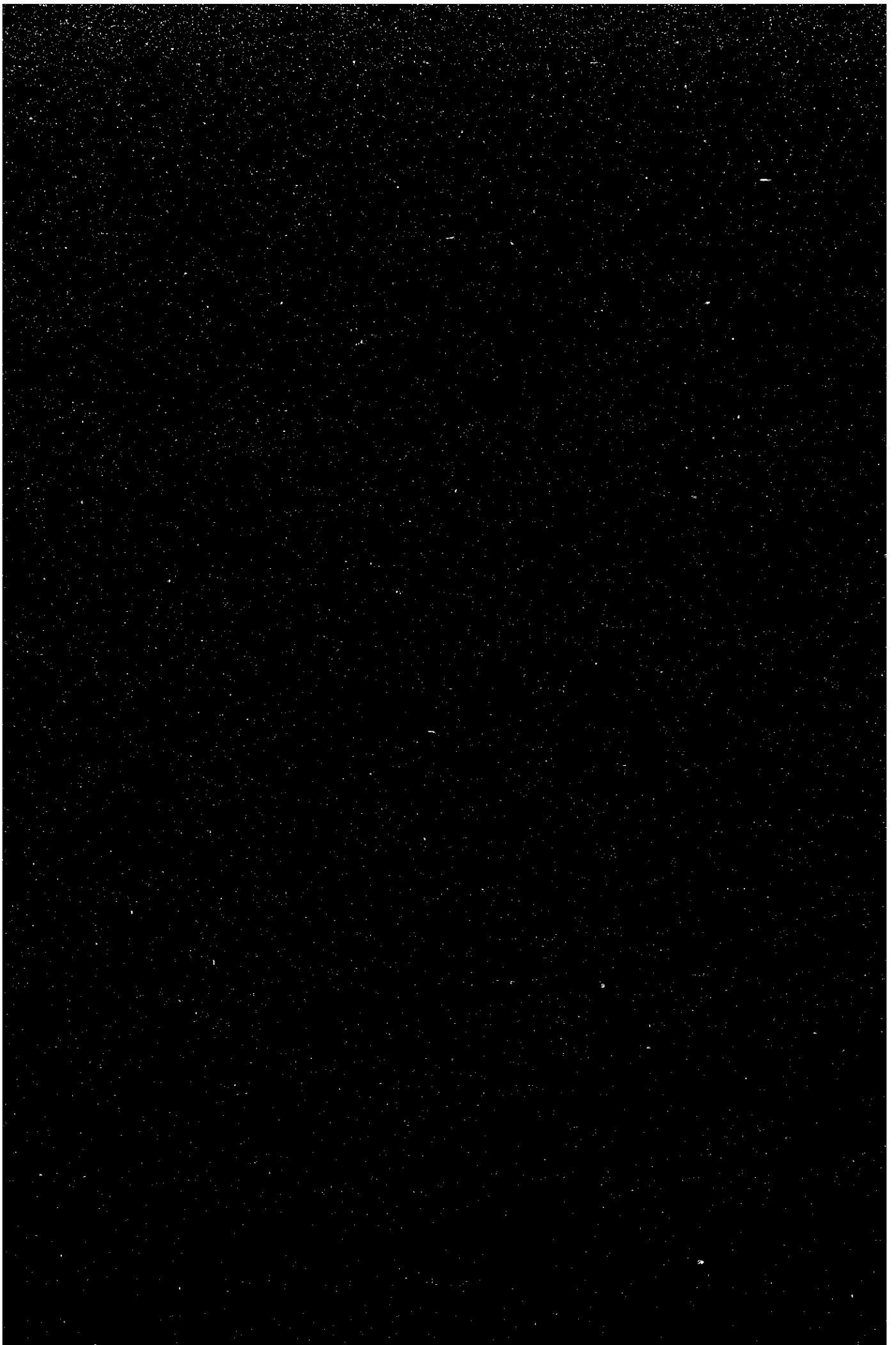
GARAGE FOR CONSTRUCTION EQUIPMENT



SCALE 1/100



SCALE 1/200



APPENDICES

APPENDIX-I ADMINISTRATIVE ORGANIZATION OF IRRIGATION/ DRAINAGE UNDERTAKING

I-1 ORGANIZATION CHART OF MINISTRY OF PUBLIC
WORKS, INDONESIA

I-2 ORGANIZATION CHART OF DIRECTORATE GENERAL
OF WATER RESOURCES DEVELOPMENT, INDONESIA

APPENDIX-II LOCAL CONDITIONS

II-1 LAW, CODE, STANDARD, ETC.

II-2 CONSTRUCTION MATERIALS

II-3 CONSTRUCTION COSTS

II-4 LOCAL CONSTRUCTION COMPANIES

APPENDIX-III METEOROLOGICAL AND GEOLOGICAL DATA ETC.

III-1 TEMPERATURE AND RELATIVE HUMIDITY

III-2 RAINFALL AND SUNSHINE

III-3 DUTCH-CONE PENETRATION TEST DATA

III-4 SITE VICINITY MAP

APPENDIX-IV LIST OF REFERENCES OBTAINED

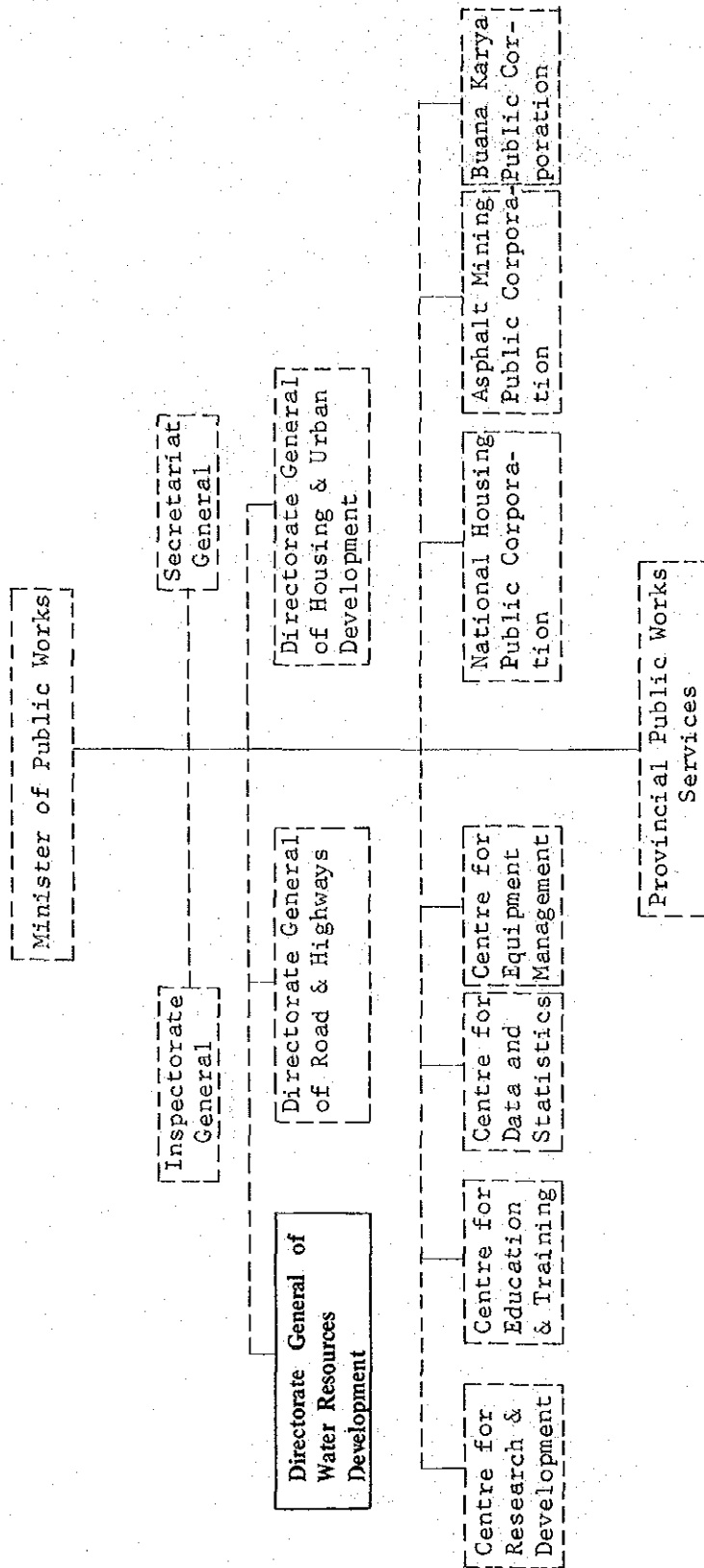
APPENDIX-V EXPLANATION ON BASIC DESIGN REPORT

**APPENDIX-I ADMINISTRATIVE ORGANIZATION OF IRRIGATION/
DRAINAGE UNDERTAKING**

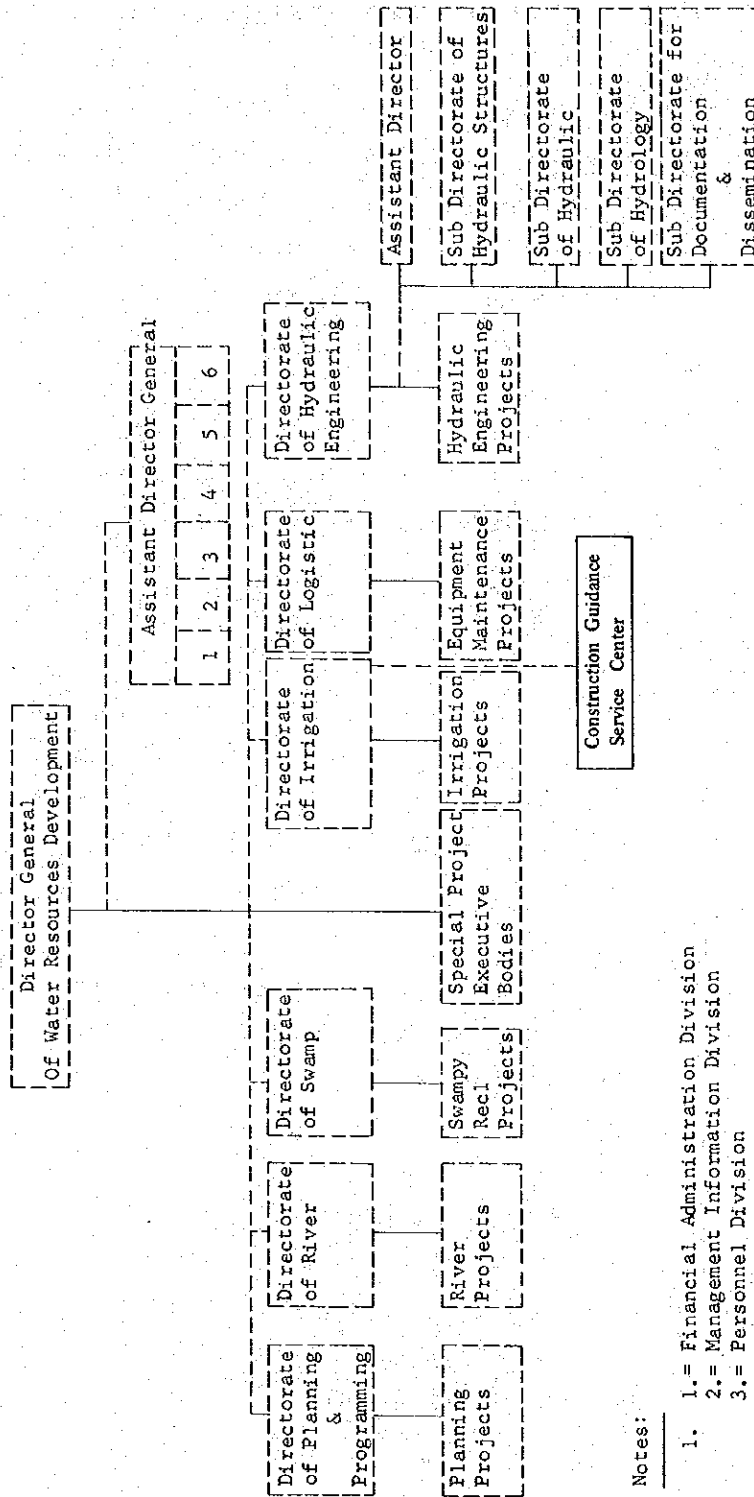
**I-1 ORGANIZATION CHART OF MINISTRY OF PUBLIC
WORKS, INDONESIA**

**I-2 ORGANIZATION CHART OF DIRECTORATE GENERAL
OF WATER RESOURCES DEVELOPMENT, INDONESIA**

MINISTRY OF PUBLIC WORKS



DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT



Notes:

1. 1.= Financial Administration Division
 2.= Management Information Division
 3.= Personnel Division
 4.= Legal Division
 5.= Foreign Assistance Administration Division
 6.= General Affairs Division
2. The Directorates are organized on the same pattern, consisting of:
 - a. A Staff, headed by an Assistant Director;
 - b. Sub Directorates;

APPENDIX - II LOCAL CONDITIONS

II-1 LAW, CODE, STANDARD, ETC.

Industrial standard in Indonesia is Dana Normalisasi Indonesia which was established after her independence based mainly on that of Holland. It is not yet applied mandatorily unless otherwise directed by the government but widely used as a basis for manufacture.

Regarding the engineering code or standard for civil engineering, there is not yet a comprehensive ones but engineering guidance books are compiled for case by case and distributed through governmental offices. Based upon these guidelines, civil engineering are practiced.

In case foreign consultants participate in designing, they mostly make design based upon their own standards taking into account of local conditions.

Building permit is applied to municipal offices except for large national project. Details of procedure is yet to be investigated.

Construction materials have hitherto been manufactured complying with the above mentioned Indonesian standard. Besides, foreign standards such as JIS or ASTM have come to be widely applied lately which is attributable to the activities of foreign joint ventures.

II-2 CONSTRUCTION MATERIALS

As most of the construction materials except for large scaled or special ones are available locally, constraints in construction in this aspects are small. However local procurement is not necessarily advantageous considering the cost or delivery term, and especially in this project due consideration should be made since custom duties are not imposed on the imported goods from Japan.

Supply capacity for major construction materials such as cement, reinforcement bars, timber, brick etc. is sufficient and therefore construction will not be affected by the shortage of them.

Following are the availability of major construction materials and equipment in local market:

Materials and Equipment	Yes	No	Remarks
H-shape steels	o		Max. 350 mm
Asphalt built-up roofing		o	
Aluminium door	o		
Tinted glass		o	
Wired glass		o	
Plate glass	o		
Rockwool acoustic tile	o		
Metal ceiling suspension frame	o		
Vinyl asbestos tile	o		2 mm thick
Aluminium framed jalousie window	o		Max. width 800 mm
Waterproof cement mortar	o		
Aluminium handrail	o		
Accordion door	o		
Exterior wall spray finish	o		
Chain-link mesh fence	o		
Excelsior board	o		
Steel rolling door	o		
Metal spandrel	o		
Transformer, over 75 KVA	o		Local made
Cubicle type switch gears		o	
Switch gears	o		
Mercury lamp 300 W	o		
Harddrawn copper conductor	o		
CV cable		o	
GVV cable	o		
Concrete electric pole		o	
Strain type insulator	o		
Telephone exchanger	o		
Elevator 9 persons	o		Otis, Mitsubishi, Hitachi
PVC pipe	o		PRALON

Materials and Equipment	Yes	No	Remarks
Cast iron soil pipe		o	
Cast iron manhole cover		o	
Instantaneous gas water heater	o		
Boiler	o		
Glasswool insulator	o		
Water pump	o		Ebara, Fairbank
Packaged air conditioner	o		Sanyo, Carrier, Hitachi, Mitsubishi
Cooling tower	o		
Copper tube	o		
Hydrant	o		
Deepwell pump	o		
Ventilation fan	o		
Air diffuser, register		o	
Brick	o		55 x 110 x 220 mm
Timber	o		Borneo, Kampur, Muranti, Lati
Finish wood plank	o		Teak
Plywood	o		6, 9, 12 mm thick
Corrugated asbestos sheet	o		6 mm thick
Corrugated galv. iron sheet	o		Colored one not available
Wood roof tile	o		Kaju sirap
Terrazzo tile	o		300, 400 mm square
Cement tile	o		200, 300, 400 mm square
Aluminium window	o		Raw materials from Singapore
Ceramic wall tile	o		108 mm square
Stair nosing	o		Metal not available

II-3 CONSTRUCTION COSTS

(a) Devaluation of Rupiah

Indonesian government devalued Rupiah currency by as much as 50% in November, 1978, i.e. exchange rate to U.S. dollar has been changed to 625 Rp/against that of 415 Rp/hitherto and transferred to floating system.

As a result, some of joint ventures with foreign capital who rely on importation of raw materials for their products by foreign currency are facing a shortage of capital and are forced to raise the price of their products. However, the government so far has not allowed price hike and at the same time is keeping a close eye on any opportunistic price hike in the market.

It is therefore unable at this moment to forecast the construction cost in the near future. What can be predicted is that local labor costs and local products will not go up so much, on the other hand imported goods and products of joint venture who rely on imported raw materials will inevitably be hiked. All in all overall cost-up of the construction cost can be assumed to be around 30% from that before the devaluation. It is noted that construction cost increase in the past two to three years has been 6 to 7%.

(b) Unit Construction Cost

To compare the proportion of labor and materials costs comprising the construction cost in Indonesia, it is roughly in a ratio of 3:7 due to low labor wages as seen hereafter.

However the construction works are very labor intensive due to inefficiency of the labor which is around 1/5 compared to that of Japan. Unit cost of building construction per floor area is about 1/2 of that of Japan.

Following are the unit construction cost of major building trades (Direct construction cost only, as per Oct., 1978).

Work Item	Unit	Unit Cost (Rp)
Form for concrete	m ²	2,200
Reinforcement	ton	142,000
Brick 1B	m ²	4,500
Concrete masonry unit	m ²	4,500
Structural steel	ton	380,000
Corrugated asbestos sheet	m ²	2,800
Waterproofing	m ²	7,000
Rough carpentry	m ³	101,000
Cement mortar plastering	m ²	650
Terrazzo tile	m ²	4,800
Cement tile	m ²	2,500
Aluminium window	m ²	20,000
Steel window	m ²	30,000
Wood door	m ²	15,000
Rockwool acoustic tile	m ²	5,000
Vinyl emulsion paint	m ²	600
Oil enamel paint	m ²	650
Ceramic wall tile	m ²	3,500
Motor driven rolling door	m ²	53,000
Sheet glass 3 mm	m ²	5,500
Excavation	m ³	350
Concrete 1 : 2 : 4	m ³	19,000

(c) Labor Cost

Trade	Daily wage (Rp)	Trade	Daily wage (Rp)
Common labor	850	Welder	1,500
Foreman	2,500	Plumber	2,600 - 3,400
Earth worker	850	Mechanic	2,600 - 3,400
Carpenter	1,500	Electrician	2,600 - 3,400
Mason	1,200	Machine operator	2,000
Plasterer	1,200	Asphalt worker	1,000
Rigger	1,500	Well digger	1,500
Painter	1,000	Driver	2,000
Joiner	1,500		
Steel bar worker	1,200		

Trade	Monthly wage (Rp)
Drafter	85,000
Office clerk	75,000
Typist	60,000
Boy	15,000
Maid	13,000
Janiter	40,000

II-4 CONSTRUCTION COMPANIES IN INDONESIA

In Indonesia, soon after her independence, construction companies were established under the auspices of the government due to lack of private capital. Given subsidies by the government, they have since grown to big enterprises and come to be called State Contractors. Afterwards they have gradually been transferred to private management and among other companies the following have grown so large as to be called the Big Five.

P.T. PEMBAGUNAN POERMAHAN

P.T. HUTAMA KARYA

P.T. NINDYA KARYA

P.T. WASIKITA KARYA

P.T. ADHI KARYA

The output and construction capacity of these are considerably large and have been engaged in large public and private projects.

On the other hand Japanese construction companies established joint ventures with local companies and have been contributed to technical transfer. The following are the major joint ventures:

P.P. Taisei

Jaya Obayashi

Hutama Takenaka

Wasikita Kajuma

DeKSTAM Shimizu

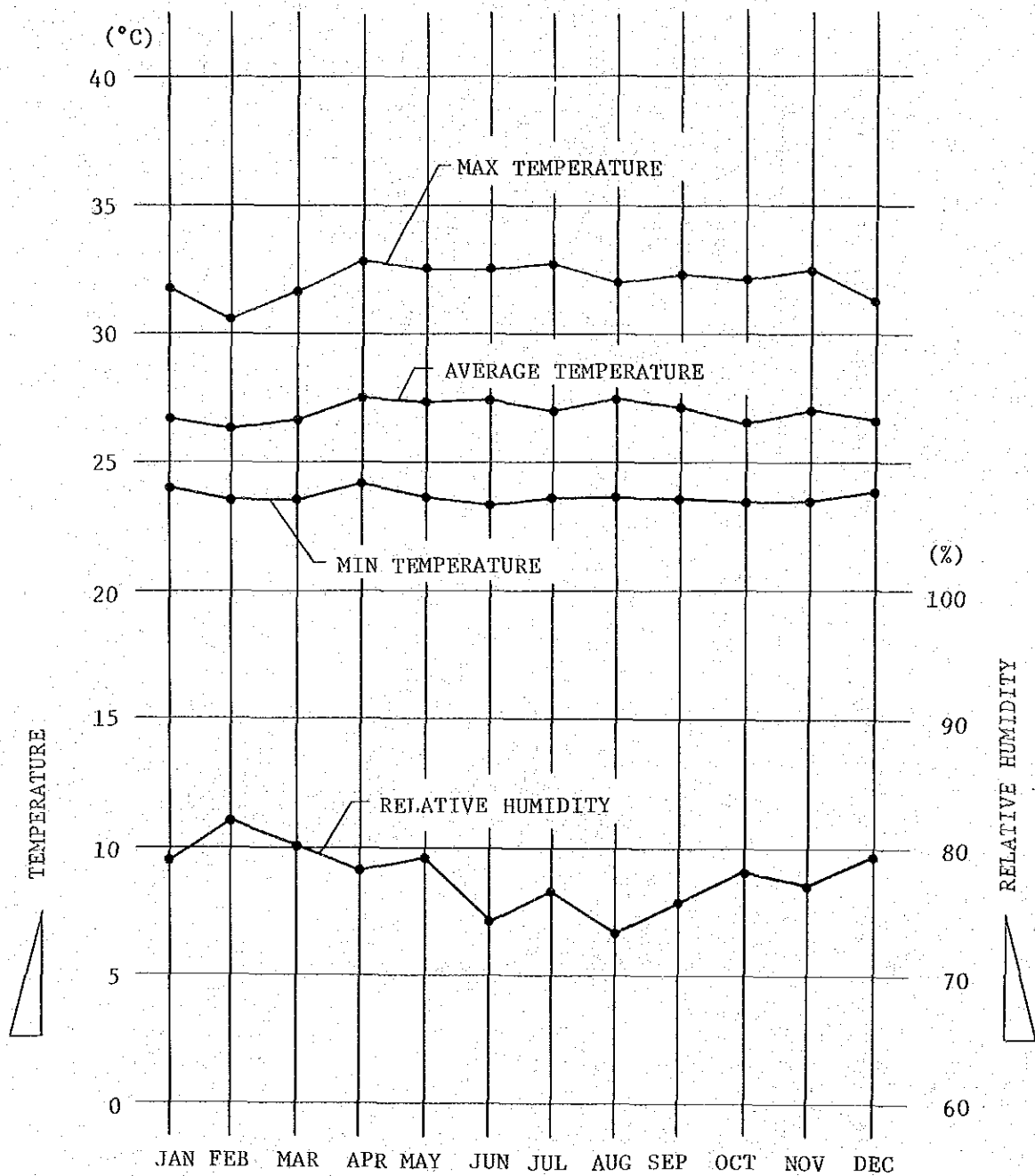
APPENDIX-III METEOROLOGICAL AND GEOLOGICAL DATA ETC.

III-1 TEMPERATURE AND RELATIVE HUMIDITY

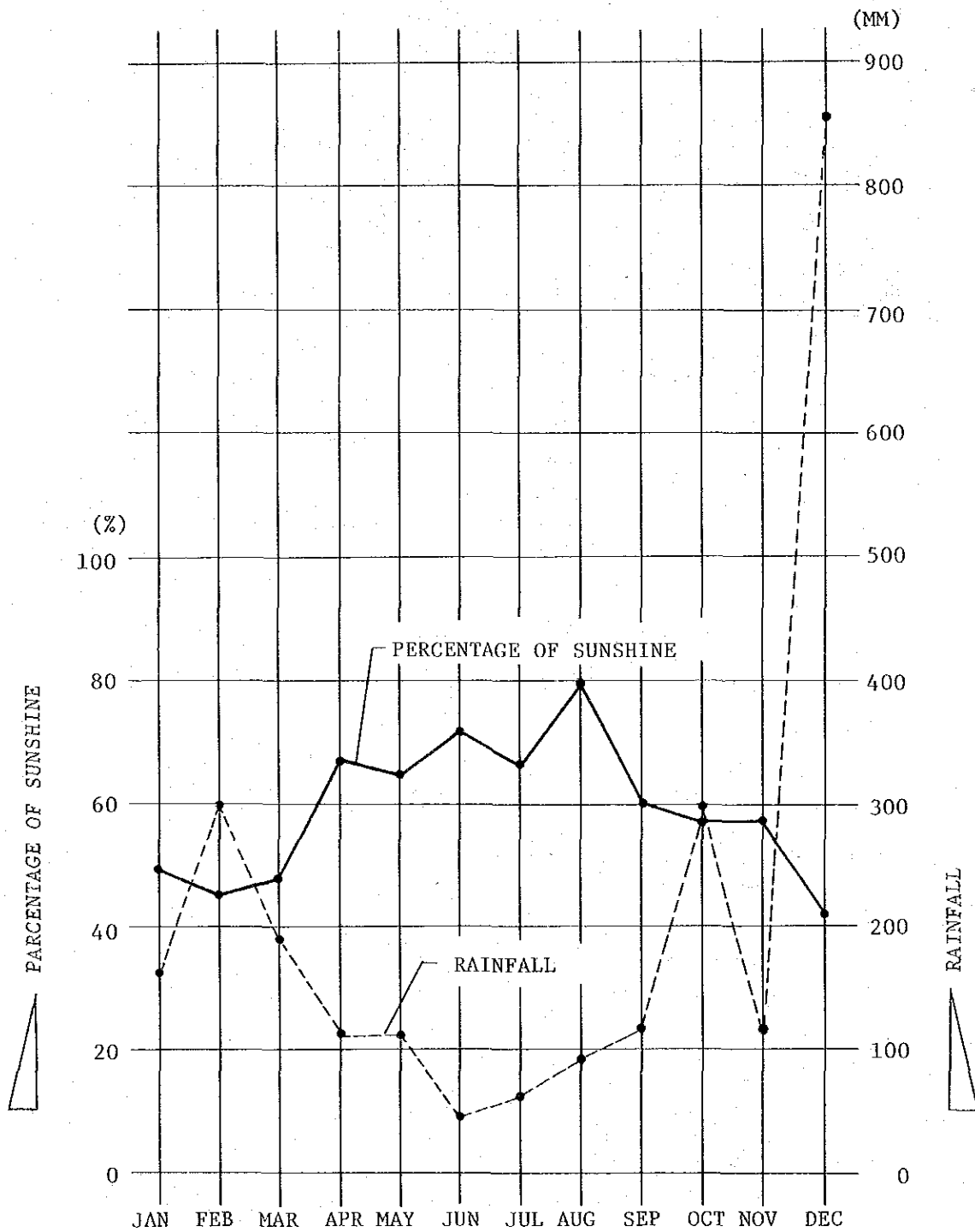
III-2 RAINFALL AND SUNSHINE

III-3 DUTCH-CONE PENETRATION TEST (Test data at northeast corner of the site for construction of a bridge on Bekasi Bypass crossing the irrigation canal)

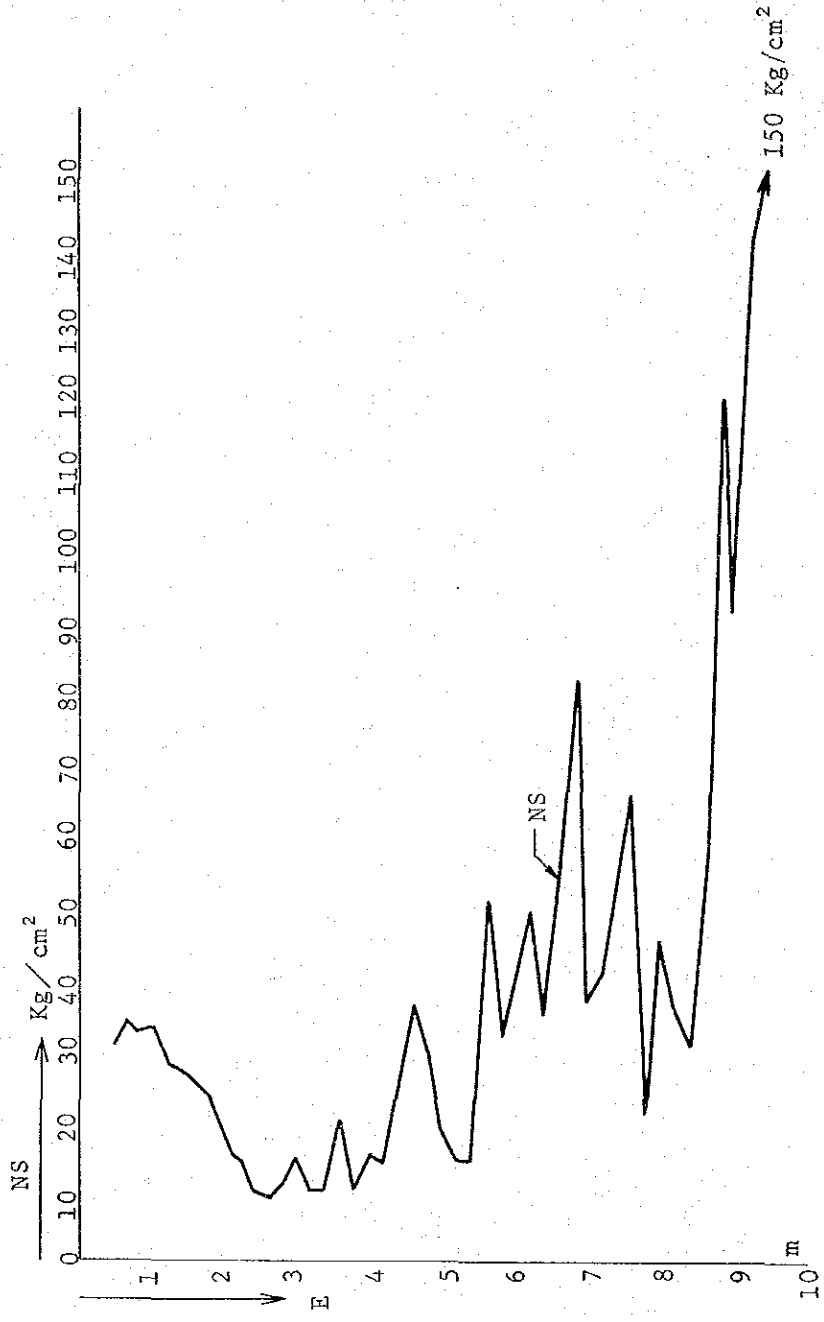
III-4 SITE VICINITY MAP



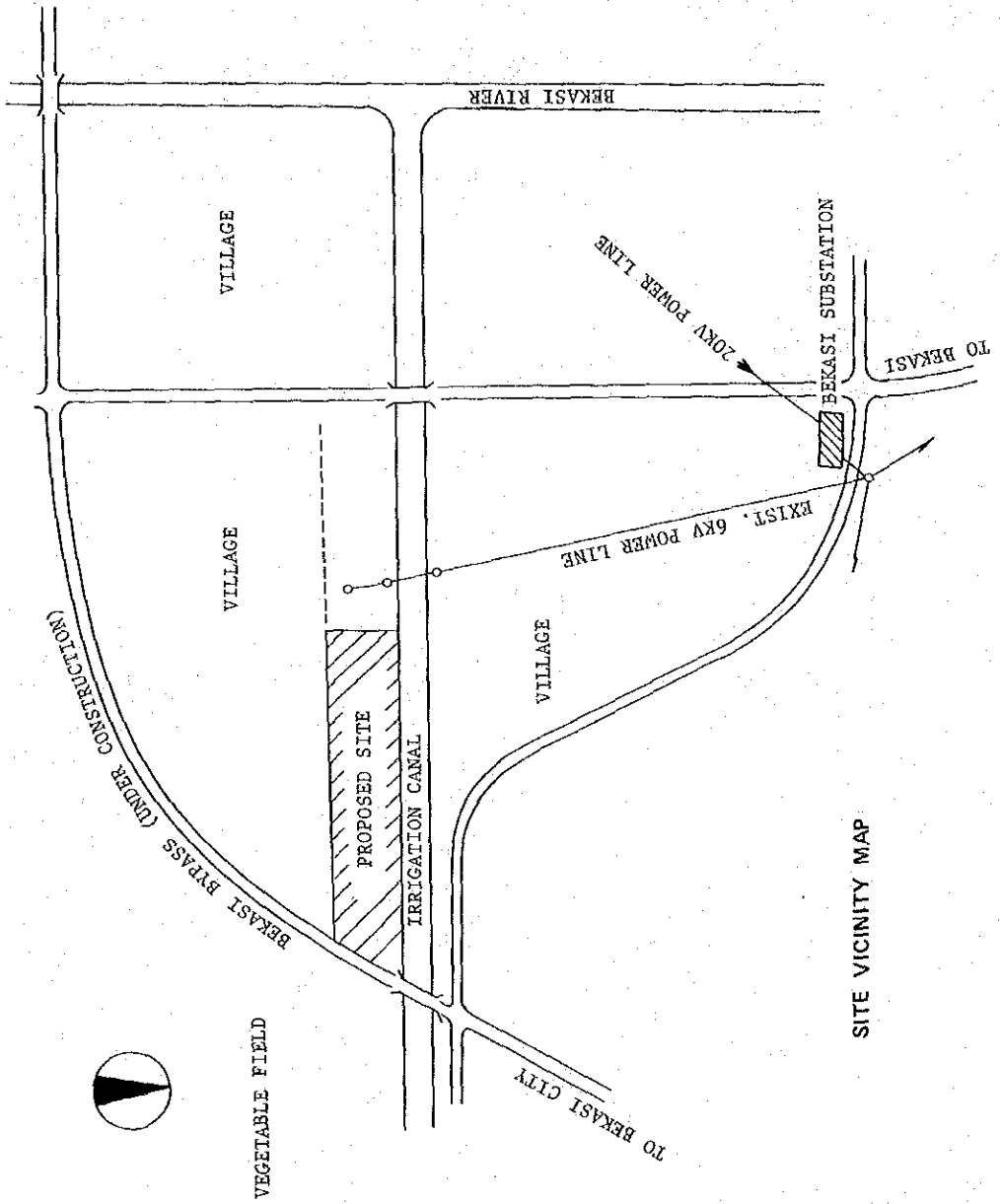
TEMPERATURE & RELATIVE HUMIDITY



RAINFALL & SUNSHINE



DUTCH-CONE PENETRATION TEST



SITE VICINITY MAP

APPENDIX – IV LIST OF REFERENCES OBTAINED

- (a) Statistik Indonesia 1976.
- (b) Directorate General of Water Resources Development
(Brochure)
- (c) A Brief Outline of Seismicity and Earthquake-
Engineering Problems in Indonesia
- (d) Standard Arsitektur Di Bidang Perumahan
- (e) Directorate Penyelidikan Masalah Air

APPENDIX-V EXPLANATION ON DRAFT OF BASIC DESIGN REPORT

V-1 PURPOSE OF MISSION

Japan International Cooperation Agency dispatched another mission with the purpose of explaining scope of facilities incorporated in a Basic Design Report on the Center prepared by the Basic Design Survey Team based on the discussions with the concerned Indonesian and Japanese officials and information obtained.

V-2 MEMBER OF MISSION

Leader - Nobuo Fusayama

Director of Kyoto Agricultural Engineering Laboratory, Ministry of Agriculture, Forestry & Fisheries

Member - Shinya Osumi

Architectural Department,
Nippon Koei Co., Ltd.

V-3 ITINERARY OF MISSION

<u>Date</u>	<u>Day</u>	<u>Activities</u>
5 Mar 1979	Monday	Tokyo to Jakarta Discussion on itinerary and brief explanation on Basic Design Report with Messrs. Yamashita (expert) and Noda (expert)
6 Mar	Tuesday	Courtesy call to D.G.W.R.D. Submittal of draft of Basic Design Report for review. Call and report to Japanese Embassy and JICA office
7 Mar	Wednesday	Explanation and discussion on draft of Basic Design Report with officials of D.G.W.R.D.

<u>Date</u>	<u>Day</u>	<u>Activities</u>
8 Mar	Thursday	Preparation of memorandum Survey of local buildings
9 Mar	Friday	Exchange of memorandum with D.G.W.R. Call and report to Japanese Embassy and JICA office Dinner party with concerned Indonesian and Japanese officials
10 Mar	Saturday	Depart Jakarta to Tokyo

V-4 MEMORANDUM

After the Mission's explanation on the draft of the Basic Design Report to the concerned officials of D.G.W. R.D and discussions followed, both parties exchanged a memorandum summarizing the talk as attached hereafter.

BASIC DESIGN REPORT (DRAFT)
ON
CONSTRUCTION GUIDANCE SERVICE CENTER

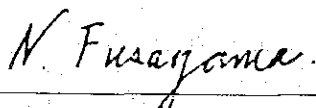
The Japanese Basic Design Survey Team for Construction Guidance Service Center dispatched by the Japanese government through Japan International Cooperation Agency from March 5, 1979 for 6 days submitted a draft of Basic Design Report on Construction Guidance Service Center and explained the contents therein.

The Indonesian government officials concerned expressed concurrence on the contents explained while emphasizing their great concern on a suitable and early implementation of the Grant Aid by the Japanese government. Incidentally, they requested a kind cooperation of the Japanese side on detailed design stage as well to fulfill the service intended at the Center based on the Report.

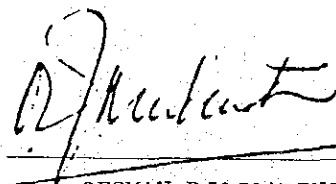
To a further inquiry by the Japanese team on preparation for the Grant Aid on the Indonesian part, the Indonesian side made clear their readiness therefor.

The Japanese team further confirmed that products imported from abroad for the Center shall be of Japanese manufacture including an electronic computer system, to which the Indonesian side expressed full understanding.

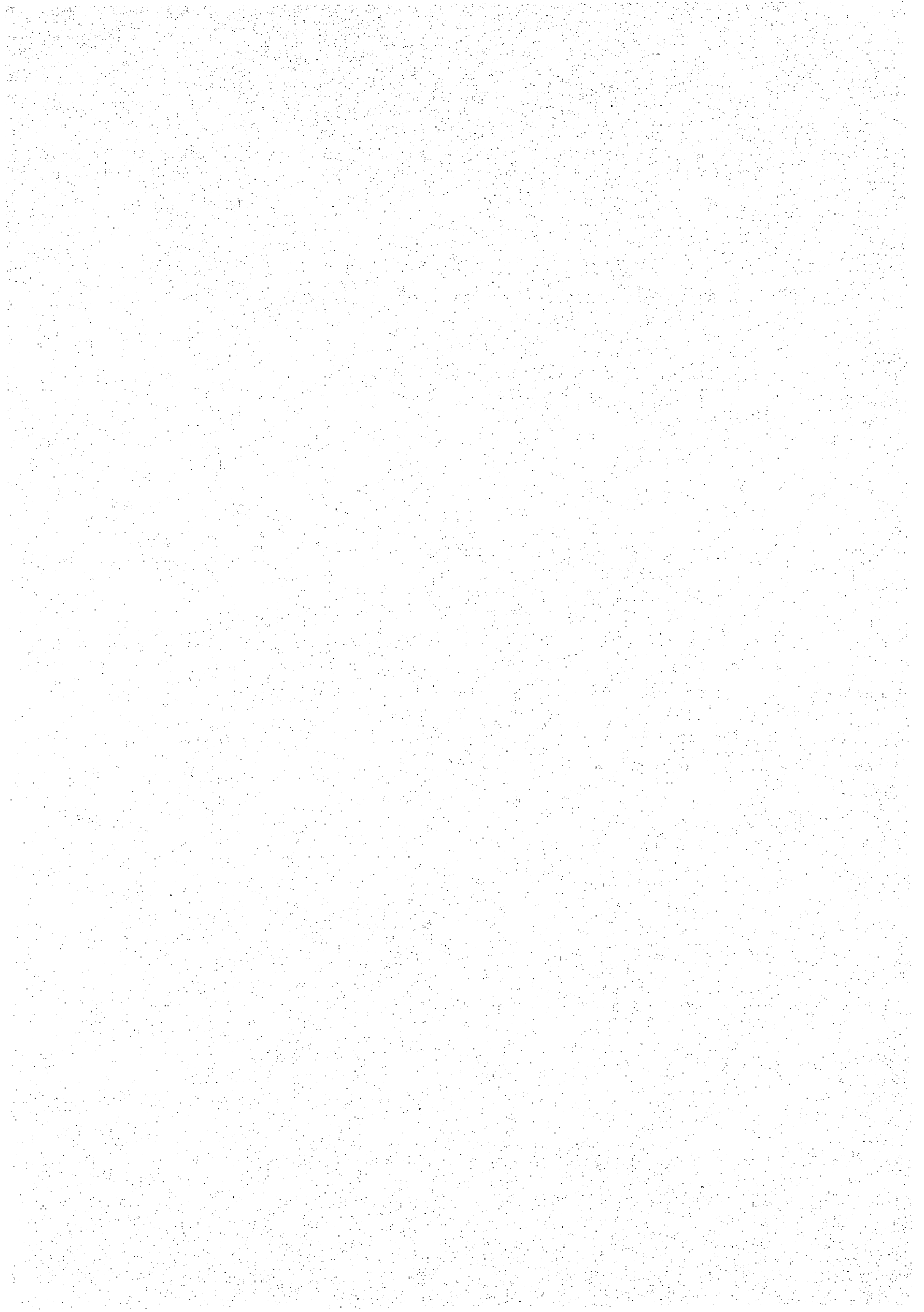
March 9, 1979



NOBUO FUSAYAMA
Leader of Japanese
Basic Design Survey Team



OESMAN DJOJOADINOTO
Director of Irrigation
D.G.W.R.D



JICA