

Appendix 6 Master Plan of New Rangsit Campus of Thammasat University

At present, the campus of Thammasat University is located in the midtown of Bangkok, near the Royal Place, alongshore of the Chao Phraya River. Although there is an urgent need of the extension of facilities in the present campus due to the increase of students, it is impossible to construct any more new facilities on the campus: it is already very much crowded with facilities. For the above reason as well as the University's plan to add the faculties of science, applied science and medicine, the University has made a master plan in cooperation with Department of Public Works to develop a new campus in Rangsit, and the construction has already started. The contents of the master plan are described below.

1. Campus Site

(1) Location

The campus site is located about 45 km north of Bangkok in the Rangsit area of the Pathumthani Province and faces National Highway Route No. 1 on the east and the national railway, running northward from Bangkok, on the west. Opposite to the site along the road on the north is the Asian Institute of Technology.

(2) Campus Site

The campus site, previously a paddy field, is about 2,300 m long in the east-west direction and about 1,000 m wide in the south-north direction, has an area of about 1,500 Rai (240 ha). At present, the ground surface level of the campus site is about 2.2 m lower than the surface level of the surrounding roads and the whole site is flat. In the near future the site will be filled 70 cm by the Government of Thailand. The base layers of the campus main roads as well as the Khlongs for drainage have been prepared.

(3) Faculties

At present, the University has seven faculties and one independent department, namely, the Faculties of Laws, Commerce and Accountancy, Political Science, Economics, Social Administration, Liberal Arts, Journalism and Mass Communication, and the Department of Sociology and Anthropology. It is envisaged that by adding four new faculties, namely the Faculties of Science, Applied Science, Medicine and Pharmacology, the University will become an integrated university having 12 faculties and 10,000 students. The present campus will remain there as it is and become a graduate school.

2. Master Plan

As shown in the following pages, Thammasat University, in corporation with Department of Public Works, formed a master plan for the development of the new campus in land use, layout of facilities, construction phasing, and the development of infrastructures.

(1) Land Use Plan

The new campus is zoned as follows:

a) Academic zone

Central section consisting of administration, faculty, and library buildings

b) Housing zone for staff

West section consisting of staff housing

c) Dormitory zone

South section consisting of dormitory buildings for 5,000 students

d) Sports zone

Northeast section

e) Primary school zone

Northwest section

f) Hospital zone

Southeast section

(2) Layout Plan

The layout of the campus shows that most of the buildings are arranged with the building axes in the east-west direction for better natural ventilation of buildings. Internal roads will be basically of separate type (vehicle-pedestrian). Pedestrian ways connecting buildings will be shaded with roofs to protect pedestrians from direct sun radiation and rain, and conduits for power and water supplies will be installed below the roof. The main internal roads will be 15-20 m wide and constructed along the periphery of each zone. From the internal main roads branch off approach roads to the buildings. There will be a network of the Kulongs throughout the campus for drainage and ponds will be incorporated into the network at each zone to create a pleasant landscape with water.

(3) Phasing Plan

In accordance with the master plan, in addition to the construction of the main roads, building facilities for administration, faculties, library, staff housing, dormitories, sport, pumping station, etc., will be constructed by 1986.

(4) Development of Infrastructures

The plan for the development of infrastructures is as follows:

a) Water supply

Water will be obtained from deep wells, dug in the campus, stored in an elevated water tank, constructed in the south corner of the campus, and distributed through water supply pipes.

b) Wastewater system

Wastewater from the facilities will be piped to a wastewater treatment plant in the southwest corner of the campus where wastewater is treated and discharged to the outside.

c) Rainwater drainage

Rainwater will be drained to the Kulongs around and in the campus.

d) Power Supply

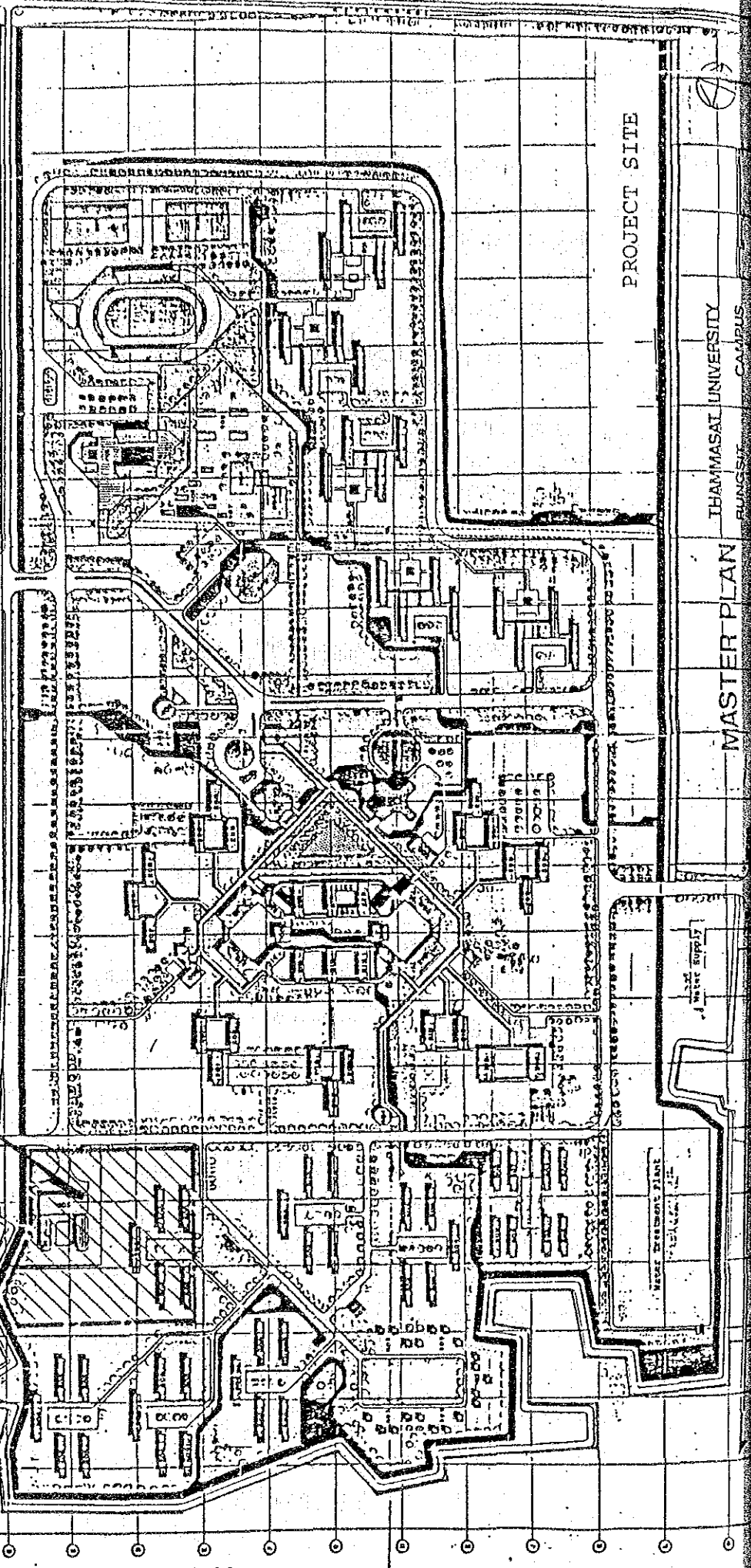
Campus power systems will be connected to the main 3-phase 50 HZ 22kv power line which is installed along National Highway Route No.1.

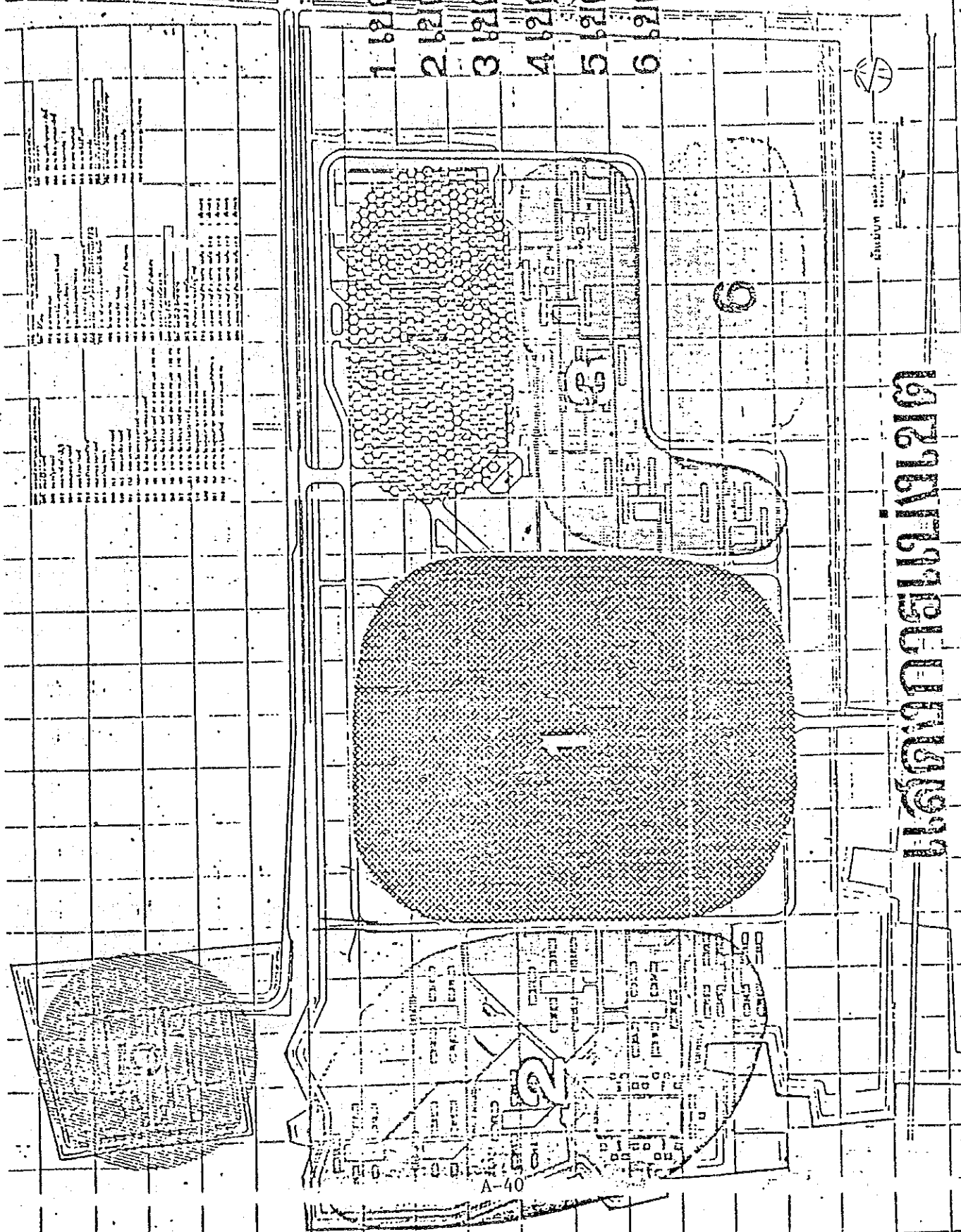
- 200 Faculty Group
- 201 Faculty of Law
- 202 Faculty of Political Science
- 203 Faculty of Commerce and Accountancy
- 204 Faculty of Economics
- 205 Faculty of Liberal Arts
- 206 Faculty of Medical Administration
- 207 Faculty of Journalism and Mass Communication
- 208 Faculty of Sociology and Anthropology
- 209 (A) Faculty of Science
- 210 (B) Faculty of Pharmacy
- 211 (C) Faculty of Medicine
- 212 (D) Faculty of Engineering
- 213 (E) Work Shop of Engineering
- 214 (C) Class-room of Liberal Arts 30 P. 204 P.
- 215 (C) Class-room of Liberal Arts 50 P.
- 216 (C) Class-room of Liberal Arts 100 P. 110 P.
- 217 (C) Class-room of Liberal Arts 300 P. 300 P.
- 218 (C) Class-room of Science
- 219 (C) Class-room of Language-Center 70 P. 50 P.
- 220 (A) Class-room of Language-Center 30 P.
- 221 (A) Class-room of Language-Center 50 and office
- 222 (A) Audio Visual Center 30 P. 50 P.

JAPANESE STUDIES INSTITUTE
 (SITE AREA: APPR. 80,000 SQ.M)

- 300 Administration and Service Building Group
- 301 Base Building (Administration Building)
- 302 Library Building
- 303 Research and Computer Building
- 304 Audio Visual Center
- 305 Teaching Equipment Support Center
- 306 Work Shop
- 400 Health and Sports Group
- 401 Student Activities and Services Section
- 402 Canteen
- 403 In-door Sport Building
- 404 Teachers and Officials Club
- 405 Peligton Building
- 406 Store
- 407 Locker Room + Club House
- 408 Bus Stop
- 500 Residential Section
- 501 Male-Dormitory (Students)
- 502 Female-Dormitory (Students)
- 503 Faculty Residence
- 504 Staff Apartment Level 7 - 2 bed-room
- 505 Staff Apartment Level 3-6 1 bed-room
- 506 Staff Apartment Level 3-8 2 bed-room
- 507 Staff Apartment Level 1-2 1 bed-room
- 508 Staff Apartment Level 1-2 2 bed-room

- 600 Alter Building Group
- 601 Swimming-Pool
- 602 Football-Lobby-Ground (Competition)
- 603 Football-Lobby-Ground (Training)
- 604 Tennis Courts
- 605 Baseball Ground
- 606 Volleyball Ground
- 607 Track and Ground
- 700 Primary-High School Section
- 701 Library Building
- 702 Primary School Building
- 703 Secondary School Building
- 704 High School Building
- 705 Auditorium and Dining Room
- 800 Training Institute
- 801 Japanese Study Institute





- 1 เขตการศึกษา
- 2 เขตที่พักอาจารย์
- 3 เขตที่พักนักศึกษา
- 4 เขตกีฬา
- 5 เขตส.ส.ประอม.มธ
- 6 เขตโรงพยาบาล

- 1. ACADEMIC ZONE
- 2. STAFF HOUSING ZONE
- 3. STUDENT HOUSING ZONE
- 4. SPORTS ZONE
- 5. PRIMARY SCHOOL
- 6. HOSPITAL

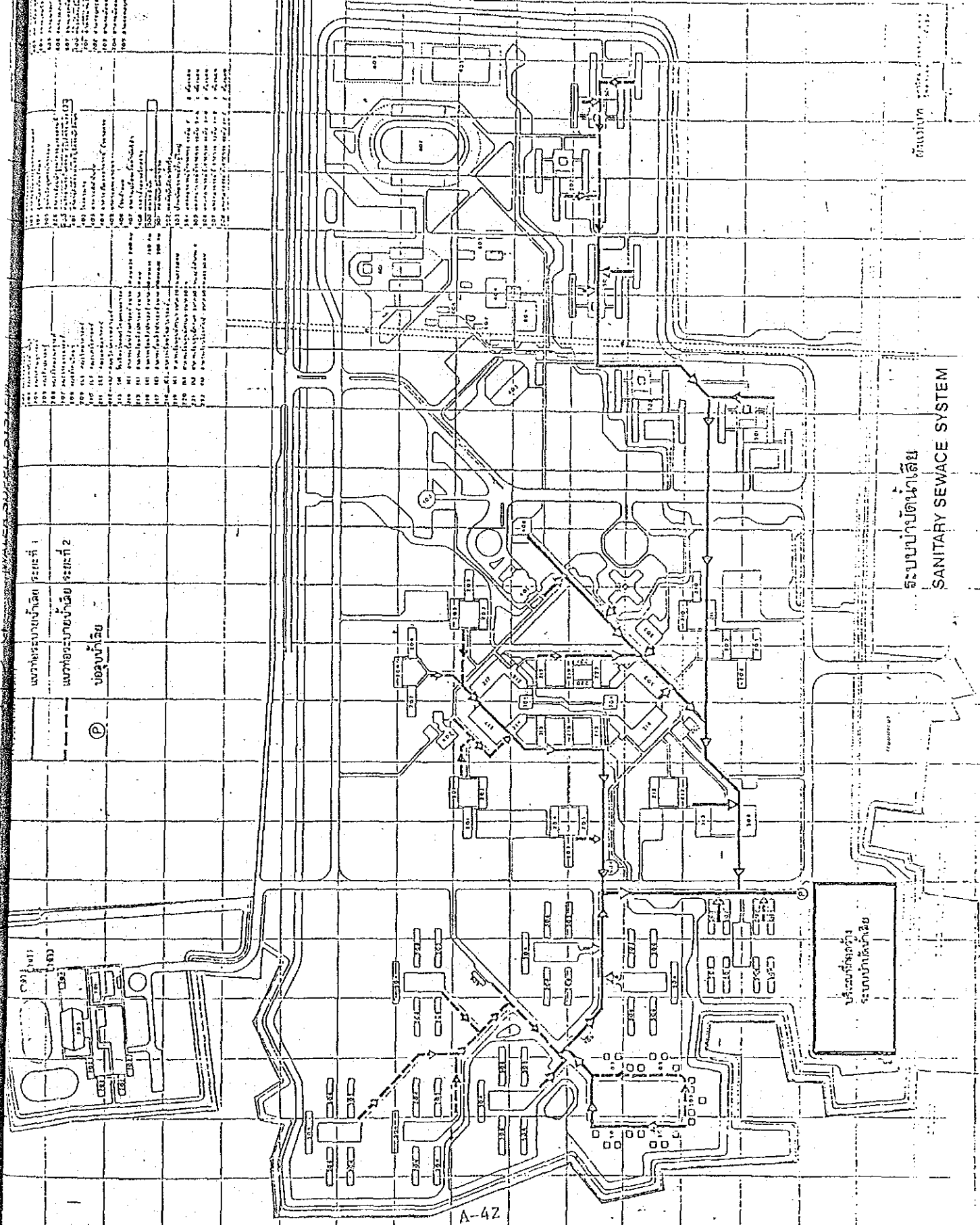
LAND USE PLAN

แผนผังการใช้ที่ดิน

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แผนที่ระบบน้ำดื่ม ระยะที่ 1
 แผนที่ระบบน้ำดื่ม ระยะที่ 2
 ขอบพื้นที่

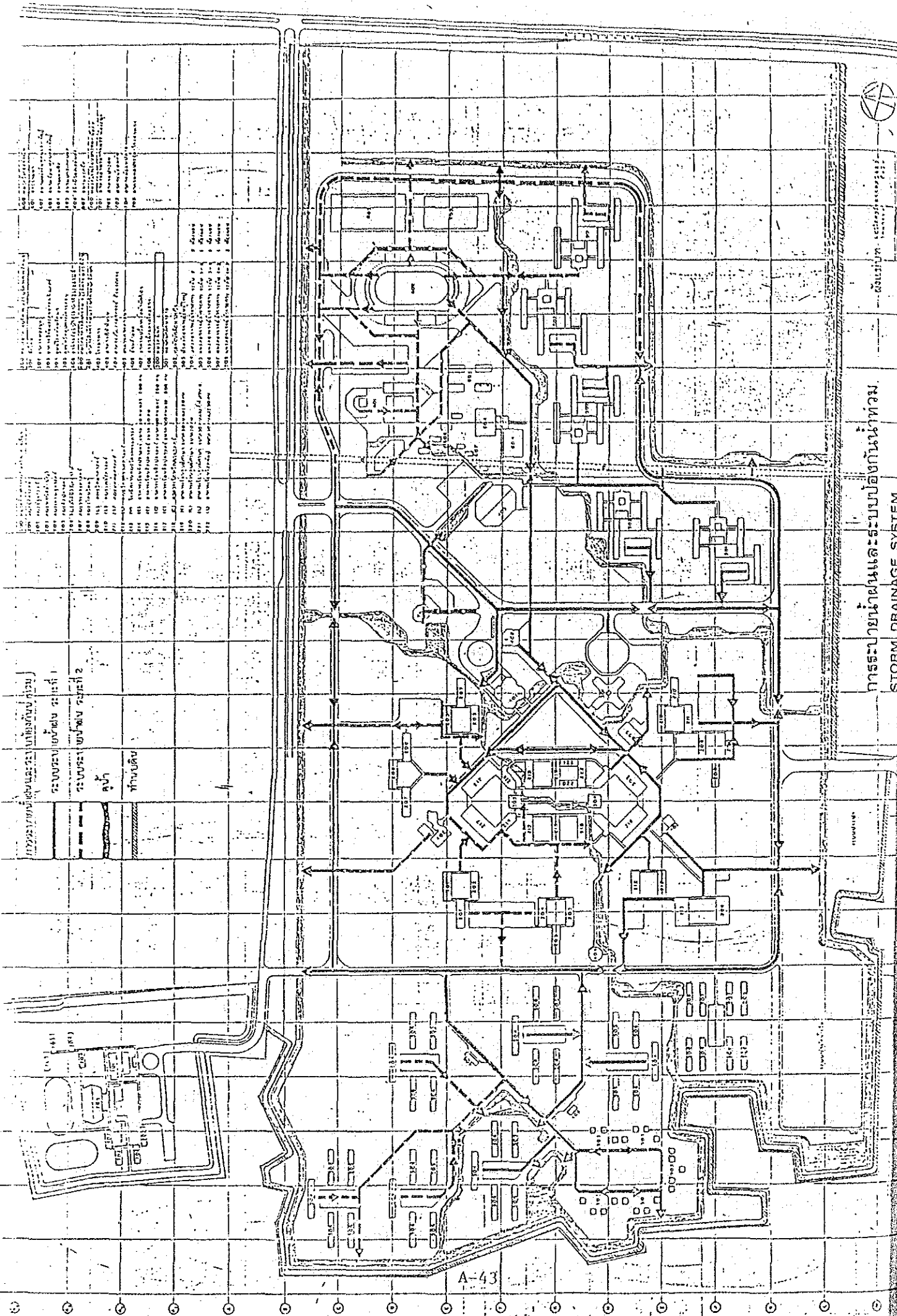
(P)



ระบบบำบัดน้ำเสีย
 SANITARY SEWAGE SYSTEM

พื้นที่ก่อสร้าง
 ระบบบำบัดน้ำเสีย

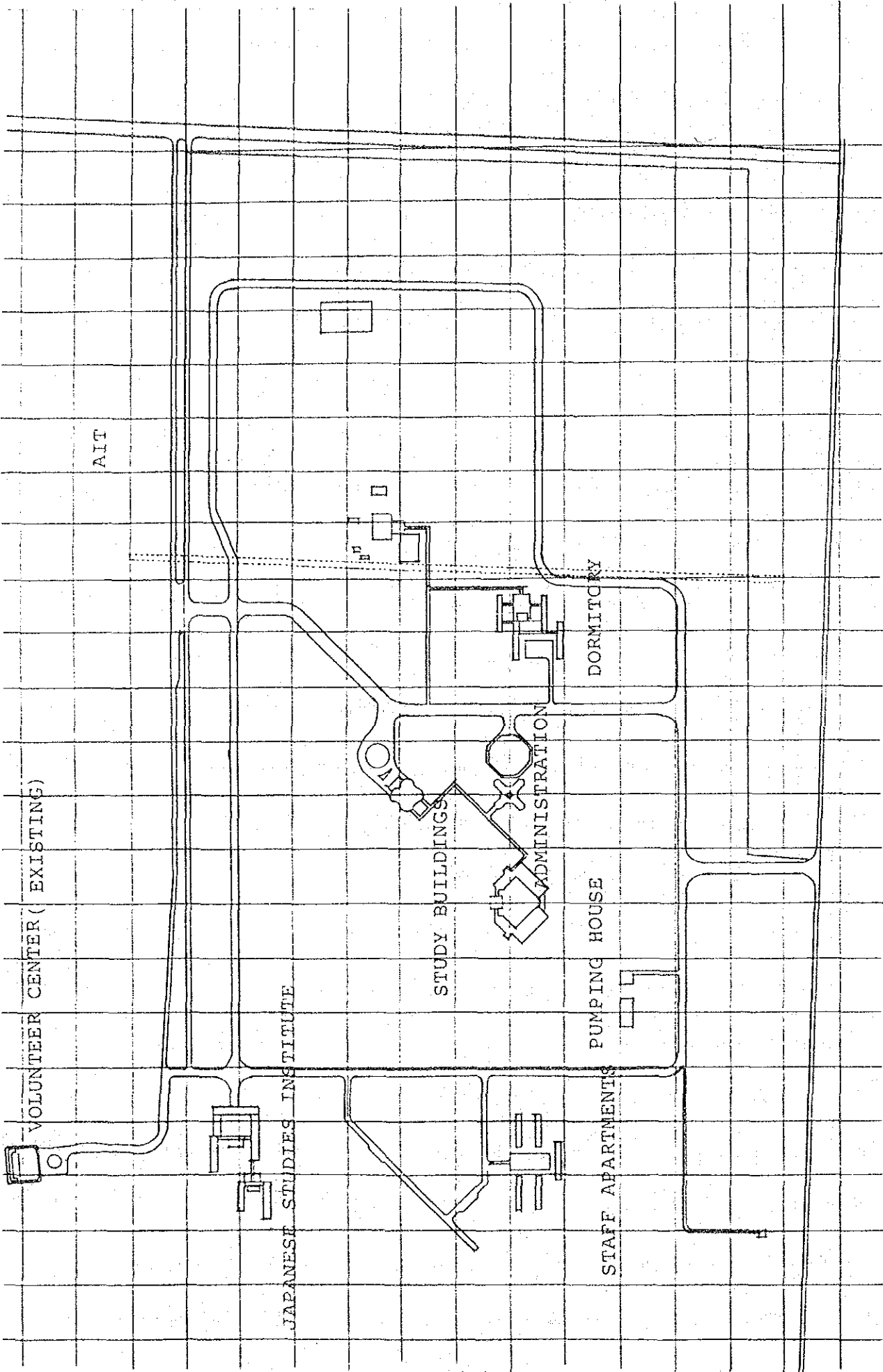
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การระบายน้ำและระบบป้องกันน้ำท่วม
STORM DRAINAGE SYSTEM

บริเวณที่ระบายน้ำและระบบป้องกันน้ำท่วม
ระบบระบายน้ำและระบบป้องกันน้ำท่วม
ระบบระบายน้ำและระบบป้องกันน้ำท่วม
คูน้ำ
ทำนบดิน

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FACILITIES TO BE CONSTRUCTED BY 1986

“ แผนที่จะสร้างสิ่งต่าง ๆ ”

Appendix 7 Boring Data

SOIL REPORT

Proposed New Thammasat Univ.
Located at Klongloun
Phaholyothin Road
Pratumthani Province

SOIL TESTING SIAM CO., LTD.
CONSULTING SOIL AND FOUNDATION ENGINEERING

218/8 PRADIPAT ROAD, BANGKOK.
TEL. 2780332 2785650

FOUNDATION BORINGS AND TESTING
FOUNDATION ANALYSES AND REPORTS
FOUNDATION PROTECTION QUALITY CONTROL
FOUNDATION INSPECTION SUPERVISION
FOUNDATION SURVEYING

TELEPHONE : 278-0332
278-5650

บริษัท ซอยล์เทสตั้งสยาม จำกัด
SOIL TESTING SIAM CO., LTD.
218/8 ถนนประดิพัทธ์ กรุงเทพฯ 4,
218/8 PATIPAT ROAD, BANGKOK 4

November 26, 1979

Thamasat University
Thaprachan, Bangkok

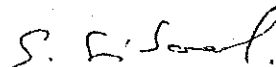
Attn: Khun Uruporn Indhabhandhu

Ref: Subsurface Investigation for proposed New Thamasat University
located at Kloung District, Phaholyothin Road,
Prathomthane Province.

We are submitting herewith the result of our Geotechnical
Investigation performed at the above site.

We would welcome the opportunity to performed any herein
recommendation inspection service for you. If there are any question
regarding this report or if we can be of further service to you in
anyway, please do not hesitate to contact us.

Very truly yours,
SOIL TESTING SIAM CO., LTD.



Somboon Songpaibool
Managing Director

SS/put.

STS Job No 512

November 23, 1979.

INTRODUCTION

The Subsurface Investigation for proposed New Thammasat University Buildings and Dike around the campus region located at Klongloun, Phaholyothin Road, Prathoomthane Province closed to A.I.T.

Five (5) soil borings were required to perform at the site as located by planner at location diagram which is enclosed in the appendix of this report.

A visual inspection of proposed location revealed to be flat area and still flood at the time of investigation, the average water level was vary from 0.10 to 0.30 m. above the existing ground surface. East of the site is Phaholyothin road, North of the site is A.I.T. campus. West of the site there is a railway route to Bangkok.

The purpose of this report is to describe the soil condition encounter at the site, to analyze and evaluate the test data obtained. Recommendation regarding to the foundation, and dike design criteria are presented.

SUBSURFACE INVESTIGATION PROCEDURES

General:

The drilling was performed with skid mounted drilling rig. The bore holes were advanced by power auger and wash boring method depends on soil conditions are encountered. A 4 in.I.D. pipe casings were used to protect throughout the upper soft stratum of each bore hole.

Soil Sampling:

All soil samples were collected at 1.50 meters intervals or at changes of soil strata.

Undisturbed Sampling:

Undisturbed sampling utilized standard 3" I.D. thin wall seamless tubes with sharp cutting edge that were pushed hydraulically into cohesive soil in accordance with ASTM specification D 1587 - 63 T

Disturbed Sampling:

A standard split spoon sampler was used where cohesionless and hard soil strata were encountered by driving a 2 in O.D. split barrel sampler into very stiff to hard clay or the cohesionless stratum with a 140 lbs. hammer falling through a distance of 30 in. The number of blows per foot of penetration was taken as the standard penetration resistance (N) value which give an indication of the relative density of the soil in place. The disturbed soil samplers in the split spoon were collected for soil type classification.

Field Vane Shear Test:

The field vane shear test were conduct at 3.0 m intervals at B-1 and B-2 by a retangular standard size 3"x6" vane blade (Acker made). The vane was pushed into the soft soil. The torque was applied slowly through the drill rod at rate of approximately 6 degrees per minute, the maximum force to cause the soil failure to registered on the proving ring dial gauge. The strength was computed from the maximum torque that produced failure on a cylindrical surface around the vane. The remold shear strength was obtained by rapidly rotating the vane blade 2 revolutions after the undisturbed vane shear strength determination; the test procedure was then repeated until the peak torque was evaluated.

TESTING PROGRAM

The laboratory testing program consist of the following:

Natural Water Content

Unit Weight

SOIL TESTING SIAM CO., LTD.

Atterberg Limits

Unconfined Compression Test

Specific Gravity

Consolidation Test

Consolidated Undrained Direct Shear Test

Sieve Analysis

as the requested of testing program.

SOIL CONDITIONS

The generalized profile of the subsoil conditions at these five (5) borings can be described briefly as beginning with top soil of clay, grass and roots of existing rice paddy field to the depth of 0.50 m. This top soil was immediately underlain by the following strata.

Very soft of clay trace of very fine sand was found to the depth ranging from 7.0 to 12.0 m. below the existing ground surface. It becomes deeper at middle of land.

Medium Dense of clayey sand, was found under the above layer to the depth ranging from 9.0 to 15.0 meters, and no any deposited at area of B-1 & B-2.

Stiff to very stiff of silty clay trace to some fine sand was found below the above layer to the depth ranging from 13.0 to 18.0 m at location of B-4 and B-5 was found medium dense of clayey sand to the depth of 15.0 to 18.0 m respectively.

Dense of fine to medium sand was found below the above stratum to the depth ranging from 23.0 to 26.0 m.

Very dense of sand and gravel was found under the above layer to the end of boring of 30.0 m.

GROUND WATER CONDITIONS

The ground water level measurements obtained while the borings were performed to be at the depth ranging from + 0.30 to + 0.10 above the existing ground surface, and were - 1.10 to - 2.0 m below the existing ground surface after 24 hours reading. It is our opinion that the water table could extend as high as possibility of 1.0 m above the existing ground surface in high water level season.

Significant fluctuation in the location of ground water table should be anticipated throughout the year, depending upon the amount of precipitation, evaporation and surface runoff.

RECOMMENDATIONS

Based upon the available information and the soil conditions were encountered. It is recommended that long pile end bearing type foundation be employed to support all the building structures. The tip of concrete pile should be seated in the dense of fine to medium sand at the depth ranging from 15.0 to 18.0 m depends on the location of the building.

Pile Foundation:

For example if we use pile size of 0.35x0.35x16.0 m where pile top is at 2.0 m below the existing ground surface, and pile tip is at 18.0 m below the existing ground surface; at location of B-5 from Fig. 2 shown that the ultimate of pile capacity is 64 tons per pile, if factor of safety of 2.0 is used, the allowable of pile capacity is 32 tons per pile. (This is the worse condition at the site.)

Exbankment of Dike:

It is understood that the designer plan to build the dike around all the proposed campus. From our experience and soil properties, it is

recommended that dike - channel combinations are the most economical way to build, but care should be exercised for bank protection by installations of rock riprap or grassing along side slopes, and the dike should be placed at a proper distance back from the channel stability of fills and slopes should be designed by the engineer by use of soil properties as shown in the appendix of this report.

GENERAL

The analysis and recommendations submitted in this report are based on available information. Since significant variations in soil conditions may occur between the boring locations, it is recommended that footing excavation and pile driving operations be inspected by an experienced soil engineer to assure that the bearing capacity conforms with the design and specifications.

This report has been prepared in order to aid in the evaluation of the site condition and only to assist the engineers in the design of the project, based on our understanding of the design details, criteria & utilization of the project as outlined herein. Also, if our understanding of the design and utilization is not correct, we should be promptly informed of the correct data so that we may revise our recommendations as appropriate.

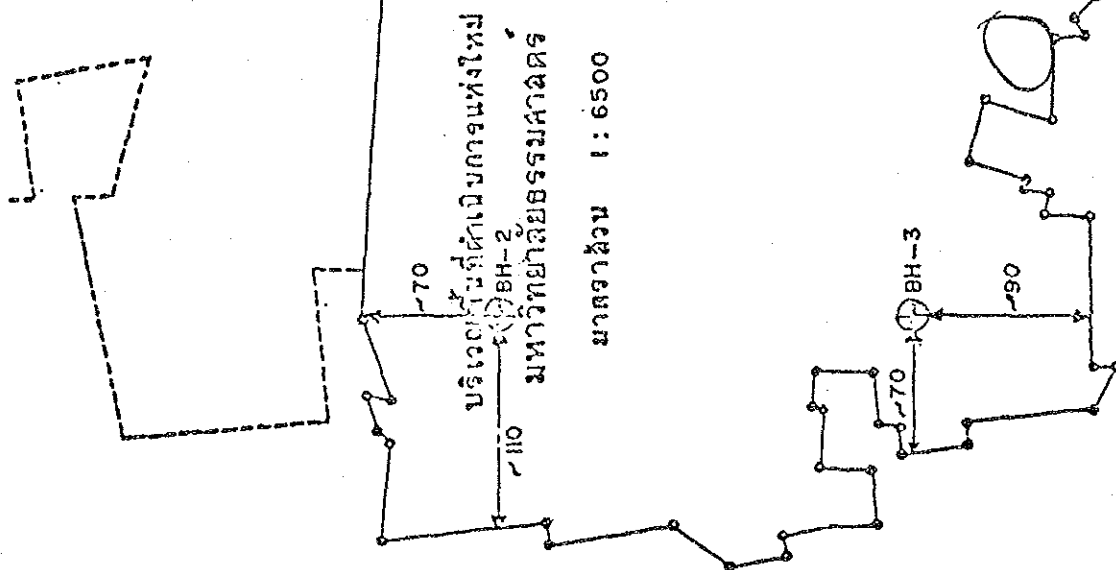
LOCATION DIAGRAM

OF
BORE HOLES

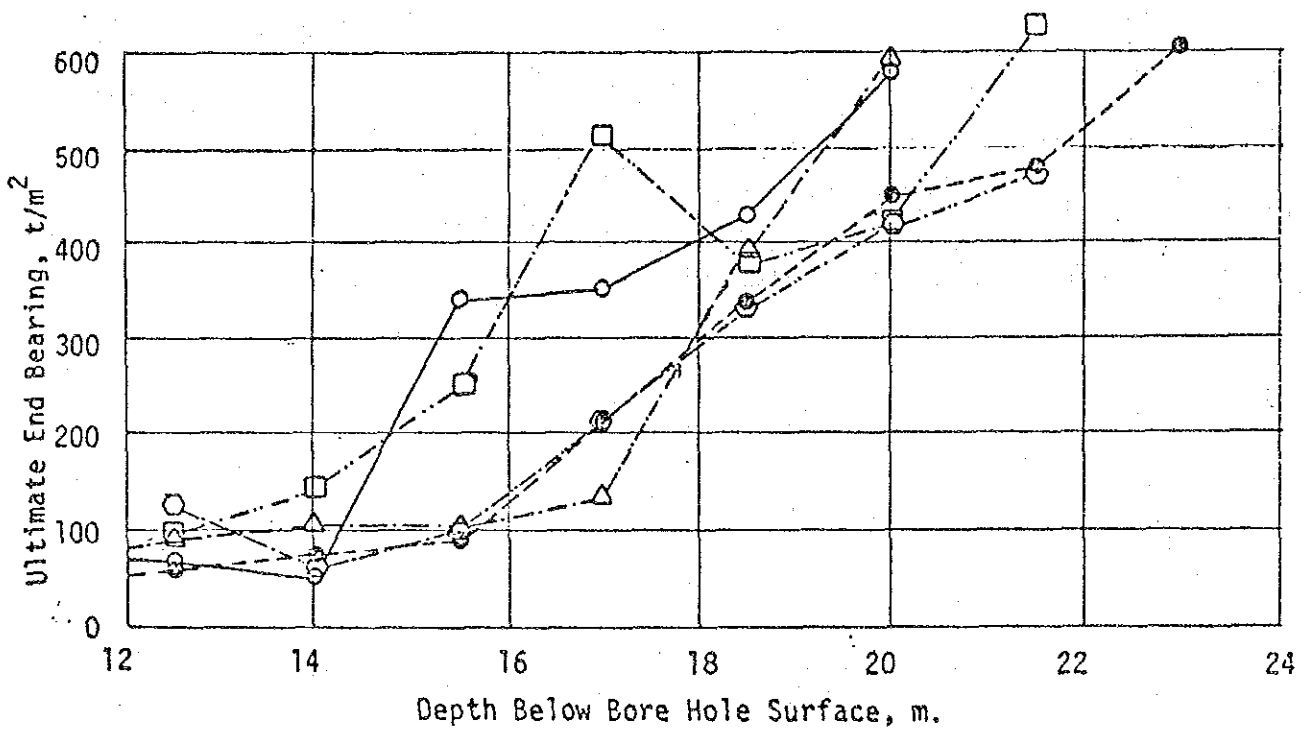
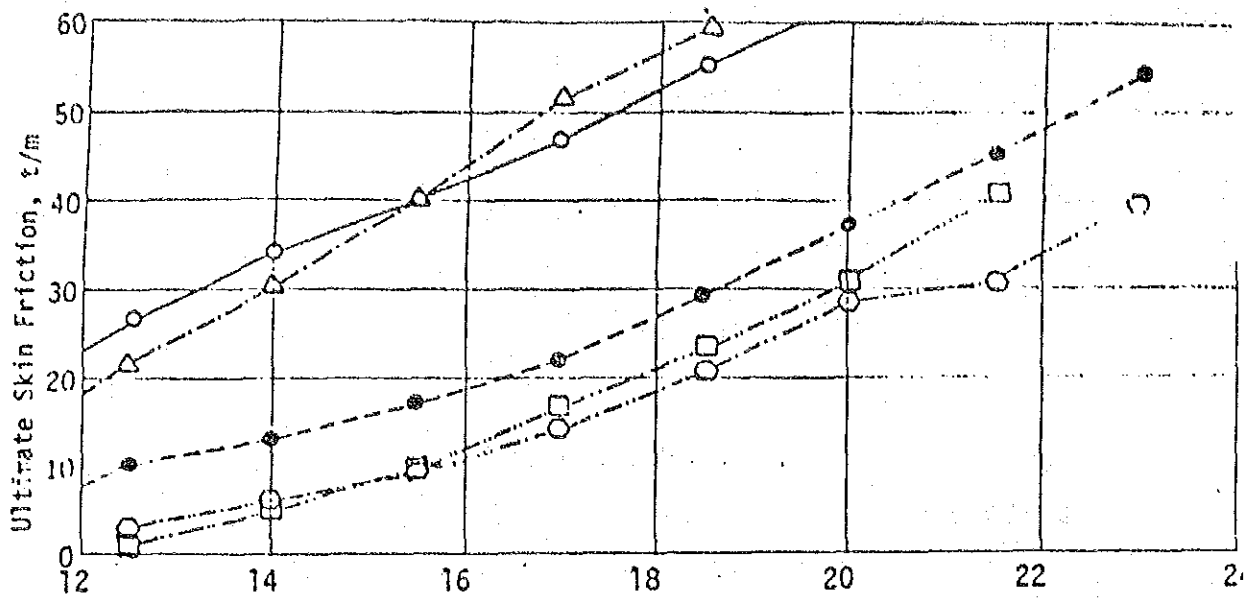
AT

New Thamasat University
Klongloug, Prathoomthane

A. I. T.



โครงการ กอ



- — B-1
- - - B-2
- △ - - B-3
- - - B-4
- - - B-5

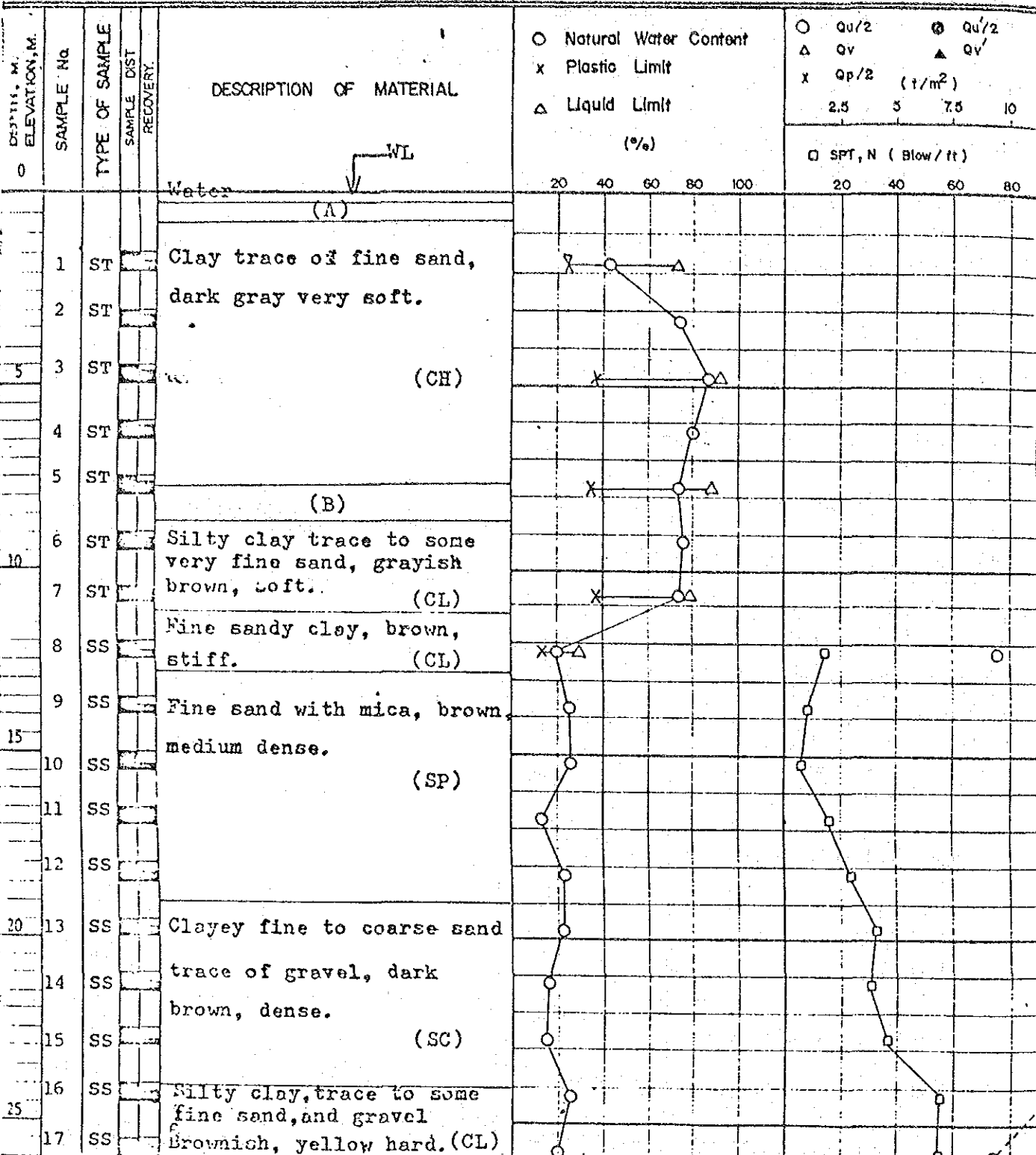
Fig. 2 : Suggested Ultimate End Bearing and Skin Friction Capacity

SOIL TESTING SIAM CO., LTD.
SUMMARY OF TEST RESULTS

PROJECT NEW THAMASAT UNIVERSITY (RUNGSIT)		LOCATION: RUNGSI, PATHUNTHANI											
DATE: Nov. 8, 1979		BORING No. B-2	JOB No. 514										
SAMPLE #	DEPTH M.		WET UNIT WEIGHT γ _w / t	ATTERBERG LIMIT %			SOIL CLASSIFICATION	UNDRAGED SHEAR STRENGTH 1/m ²				STANDARD PENETRATION(N)	
	FROM	TO		LL	PL	PI		UNCONFINED SHEAR	FIELD VANE SHEAR		POCKET PENETRATION		
								Qu/2	Qu/2	Qv	Qv	Qp	
ST-1	1.50	2.00	41.6	73.0	24.2	48.8	CH	-	-	1.24	0.53	0.5	
ST-2	3.00	3.50	74.9				CH	-	-			-	
ST-3	4.50	5.00	88.2	90.4	35.6	54.8	CH	-	-	0.30	0.10	0.1	
ST-4	6.00	6.50	80.3				CH	-	-			0.1	
ST-5	7.50	8.00	74.2	89.8	34.3	55.5	CH	-	-	0.35	0.12	0.1	
ST-6	9.00	9.45	78.2				CL	-	-			1.0	
ST-7	10.50	11.00	76.3	78.8	37.2	41.6	CL	-	-			7.5	
SS-8	12.00	12.45	20.9	30.7	17.7	13.0	CL	9.55				8.7	15
SS-9	13.50	13.95	25.1		NP		SP	-	-			-	8
SS-10	15.00	15.45	26.3				SP	-	-			-	7
SS-11	16.50	16.95	13.0				SP	-	-			-	17
SS-12	18.00	18.45	23.3				SP	-	-			-	25
SS-13	19.50	19.95	21.6				SC	-	-			-	33
SS-14	21.00	21.45	18.9				SC	-	-			-	32
SS-15	22.50	22.95	16.4				SC	-	-			-	38
SS-16	24.00	24.45	27.3				CL	15.50				16.2	56
SS-17	25.50	25.95	20.4				CL	9.30				12.5	55
SS-18	27.00	27.45	14.6				SM-GP	-	-			-	48
SS-19	28.50	28.95	-				SM-GP	-	-			-	59
SS-20	30.00	30.45	-				SM-GP	-	-			-	56

LOG OF BORING No. B - 2

PROJECT NAME. THAMMASAT UNIVERSITY	LOCATION. RUNGSIT , PATHUMTHANI
OWNER THAMMASAT UNIVERSITY	CONTRACTOR.



WATER LEVEL OBSERVATIONS		SOIL TESTING SIAM CO., LTD. BANGKOK.	BORING STARTED. Oct. 23/79	
W.L. + 0.10 m. W.S. OR W.D.			BORING COMPLETED. Oct. 24/79	
W.L. B.C.R. A.C.R.			RIG. J-2	FOREMAN. SK
W.L. - 2.00 24 HRS. AFTER BORING.			DRAWN. SRP	APPROVED.
			JOB No. 514	SHEET. 1/2

LOG OF BORING No. B - 2

PROJECT NAME. THAMMASAT UNIVERSITY	LOCATION. RUNGSIT , PATHUMTHANI
OWNER THAMMASAT UNIVERSITY	CONTRACTOR. -

DEPTH, M ELEVATION, M	SAMPLE No	TYPE OF SAMPLE	SAMPLE DIST	RECOVERY	DESCRIPTION OF MATERIAL	<input type="checkbox"/> Natural Water Content <input checked="" type="checkbox"/> Plastic Limit <input type="checkbox"/> Liquid Limit (%)	<input type="checkbox"/> Qu/2 <input type="checkbox"/> Qv <input checked="" type="checkbox"/> Qp/2 (1/m ²)	<input checked="" type="checkbox"/> Qu/2 <input type="checkbox"/> Qv (1/m ²)	<input type="checkbox"/> SPT, N (Blow/ft)
35									
17	17	SS			Coarse sand and gravel, brown, very dense.				
18	18	SS							
19	19	SS							
20	20	SS							
					↗ END OF BORING				
					(A) Clay with some roots and glass. (Top-Soil)				
					(B) Clay with pocket of sand, brown, soft. (CH)				

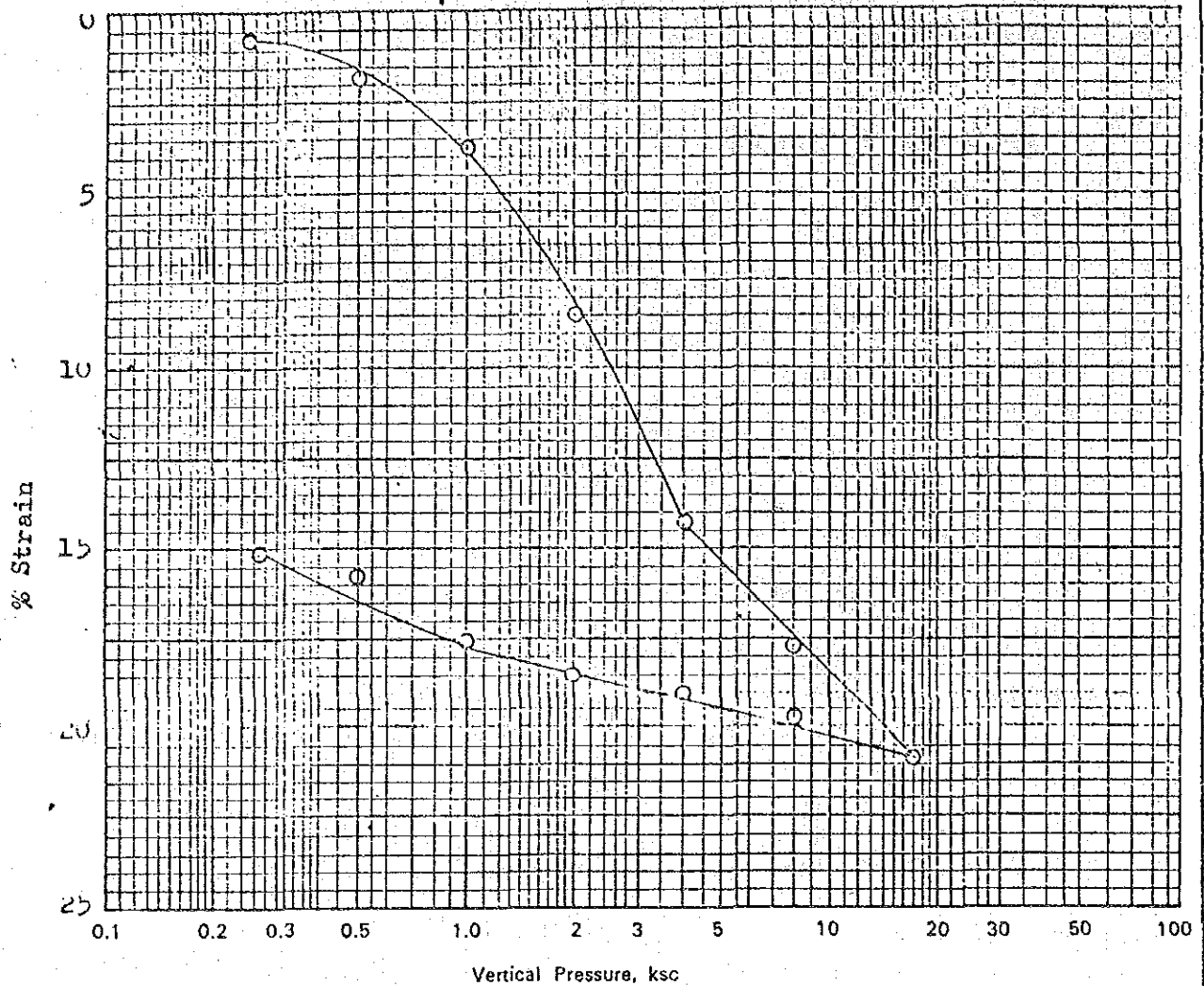
WATER LEVEL OBSERVATIONS		
HL.	+ 0.10 m.	W.S. OR WD
KL.	B.C.R.	A.C.R.
HL.	- 2.00	24 HRS. AFTER BORING.

**SOIL TESTING SIAM
 CO., LTD.
 BANGKOK.**

BORING STARTED. Oct. 23/79	
BORING COMPLETED. Oct. 24/79	
RIG. J-2	FOREMAN. SX
DRAWN. SRP	APPROVED.
JOB No. 514	SHEET. 2/2

CONSOLIDATION TEST RESULTS

Project NEW THAMMASAT UNIVERSITY	Location RUNGSIIT	Job No. 514
Boring No. BE-2	Sample No. ST-1	Depth 1.50-2.00 m. Date 15/11/22

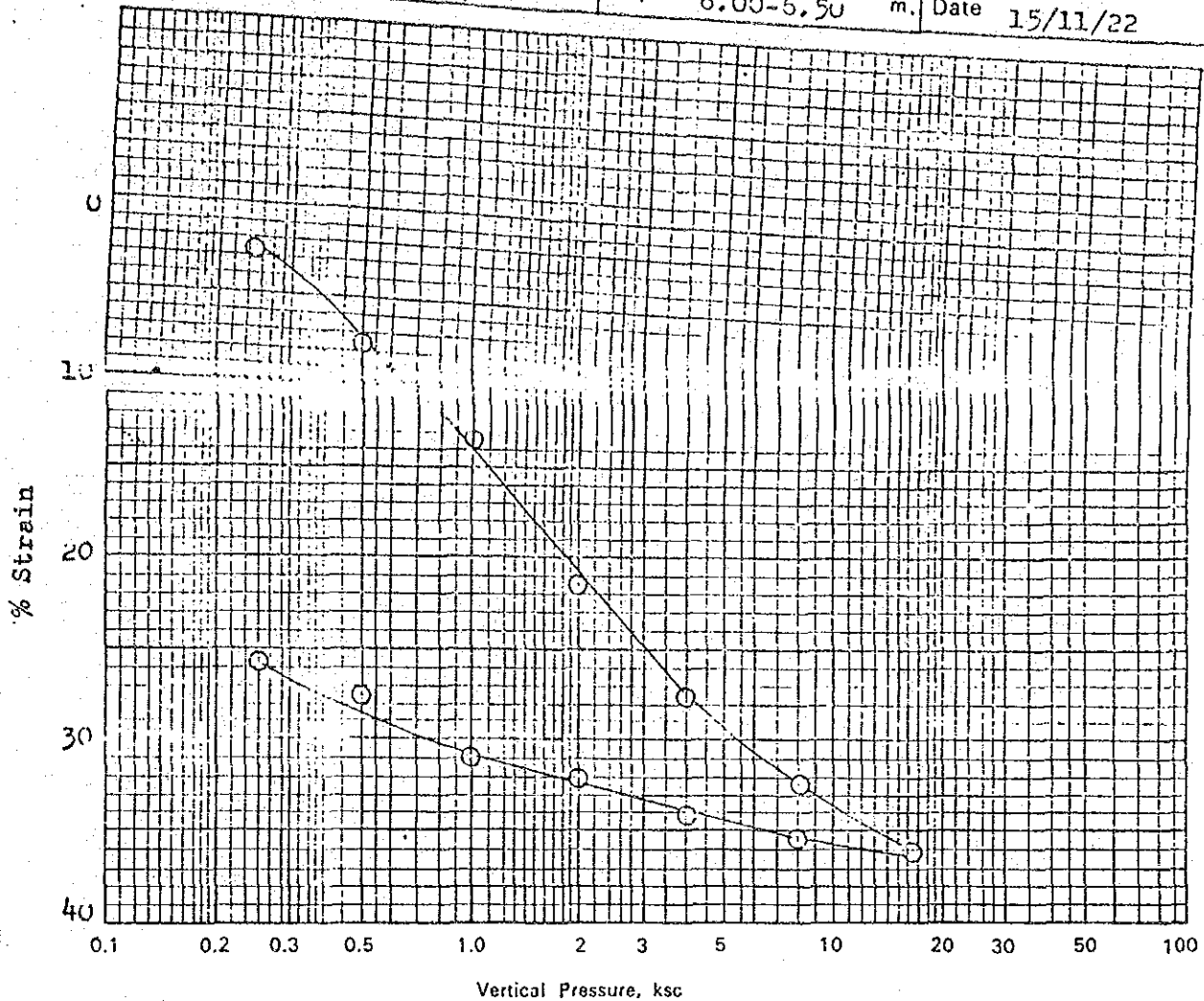


Pressure ksc	50% Consol. Time min	Coef. of Consolidation $C_v, 10^{-4} \text{ cm}^2/\text{sec}$	% Strain e		
				Initial	Final
				Height of Sample, H	cm. 2.54
				Water Content, W	%
Initial	—	—		Degree of Saturation, S	%
0.125				Solid Height of Sample, Hs	cm.
0.25				Diameter of Sample D	6.3 cm.
0.50	9.0	5.70	1.90	Wet Unit Weight γ_t	g/cc
1	7.5	5.13	4.74	Dry Unit Weight γ_d	g/cc
2	21.0	2.18	8.53	Liquid Limit LL	%
4	15.5	2.00	14.21	Plastic Limit PL	%
8	11.0	3.49	17.53	Compression Ratio CR	0.102
16	18.0	2.03	20.38	Rebound Index C_r	
Final	—	—		Specific Gravity G	

SOIL TESTING SIAM CO., LTD.

CONSOLIDATION TEST RESULTS

Project **NEW THAMMASAT UNIVERSITY** Location **RUNGSI** Job No. **514**
 Boring No. **BH-2** Sample No. **ST-4** Depth **6.00-6.50 m.** Date **15/11/22**



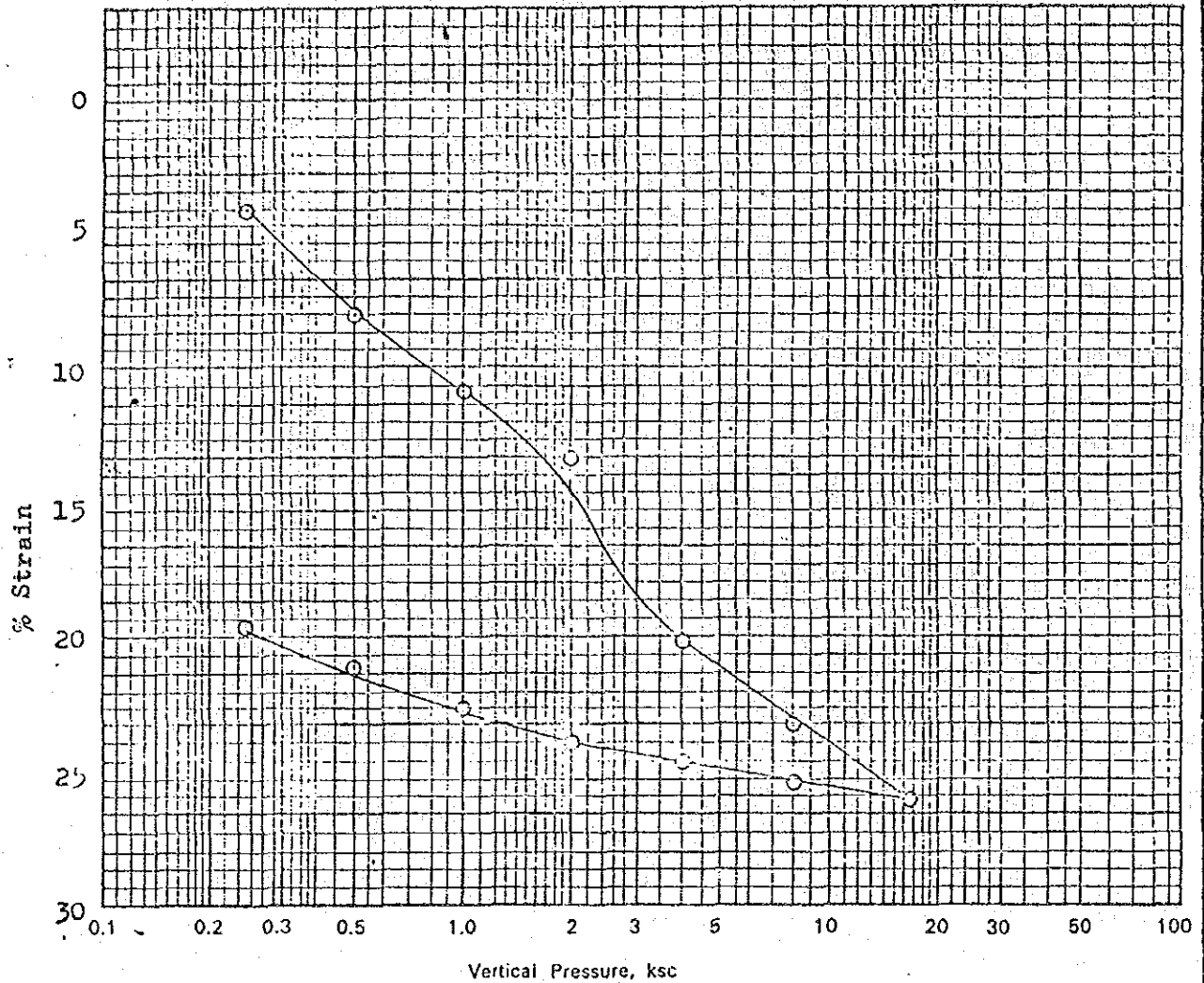
Pressure ksc	50% Consol. Time min	Coef. of Consolidation $C_v, 10^{-4} \text{ cm}^2/\text{sec}$	% Strain			Initial	Final
				Height of Sample, H	cm.	2.54	
Initial	—	—		Water Content, W	%		
0.125				Degree of Saturation, S	%		
0.25				Solid Height of Sample, Hs	cm.		
				Diameter of Sample, D	cm.	6.3	

1	22	1.89	15.74	Dry Unit Weight γ_d	g/cc
2	26	1.36	21.80	Liquid Limit LL	%
4	15	1.20	27.96	Plastic Limit PL	%
8	9	1.88	32.22	Compression Ratio CR	0.236
16	12	2.16	36.01	Rebound Index C_r	
Final	—	—		Specific Gravity G	

TESTING SIAM CO., LTD.

CONSOLIDATION TEST RESULTS

Project **NEW THAMMASAT UNIVERSITY** Location **RUNGSIT** Job No. **514**
 Boring No. **BH-2** Sample No. **S1-7** Depth **10.50-11.00** m. Date **15/11/22**



Pressure ksc	50% Consol. Time min	Coef. of Consolidation $C_v, 10^{-4} \text{ cm}^2/\text{sec}$	% Strain		
				Initial	Final
				Height of Sample, H	cm. 2.54
				Water Content, W	%
Initial	—	—		Degree of Saturation, S	%
0.125				Solid Height of Sample, Hs	cm.
0.25				Diameter of Sample D	6.3 cm.
0.50	45	1.01	8.05	Wet Unit Weight γ_t	g/cc
1	35	1.25	10.90	Dry Unit Weight γ_d	g/cc
2	2	20.90	13.27	Liquid Limit LL	%
4	8	0.96	20.38	Plastic Limit PL	%
8	11	2.29	23.22	Compression Ratio CR	0.095
16	18	1.81	26.07	Rebound Index C_r	
Final	—	—		Specific Gravity G	

SOIL TESTING SIAM CO., LTD.

Construction Implement Chart																
* Fiscal Year Start																
DESCRIPTION	1983 *				1984 *				1985 *				1986 *			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Infrastructure																
1. Water Supply				Oct.'83 (300 days)	Apr.'84											
2. Electricity				Oct.'83 (120 days)	Feb.'84											
3. Sewage										Apr.'85 (300 days)			Jan.'86			
4. Drainage										Apr.'85 (300 days)			Jan.'86			
5. Tele-Communication					Apr.'84	Jun					2 Jul.'85		Dec.'86			
Building							Jul.'84			(660 days)				Apr.'86		
1. Administration						Jun.'84				(540 days)				Nov.'86		
2. Lecture Theatre						Jul.'84				(450 days)						
3. Audio - Vision																
4. Dormitory						May.'84				(720 days)				Apr.'86		

Appendix 9 Budget Schedule

RUNGSIT CAMPUS BUDGET

Estimated Project Cost (1979 - 1986)

Budget year (Oct. 1 - Sept. 30)

Estimated Cost	Budget	Total
1979 - 1982	42,970,700	42,970,700
1983	40,091,800	40,091,800
1984 (Oct. 1, 1983 - Sept. 30, 1984)	39,139,400	39,139,400
1985 - 1986	118,759,400	118,759,400

1986 - 1991 to 6th five years period of National
Economic and Social Development Plan

CONSTRUCTION PROJECT OF RUNGSIT CAMPUS (Oct. 1, 83 - Sep. 30, 84)

1.	Equipment, Land and Building	39,139,400.00 Bahts
1.1	Land and Building	39,139,400.00
1.2.1.	<u>Land Cost</u>	4,539,400 Baht
	Land to be purchased	4,539,400 Baht
	(Total cost	8,878,800 Baht
	Budget for 1984	4,439,400 Baht
	4,439,400 committed for 1985 budget)	
1.2.2.	<u>Building</u>	34,600,000 Baht
	a) Classroom Building (1 unit)	3,000,000 Baht
	(Total cost 16,000,000 of which	
	13,000,000 committed for 1985 budget)	
	b) Audio-visual Center (1 unit)	3,000,000 Baht
	(Total cost 8,480,000 of which	
	5,480,000 committed for 1985 budget)	
	c) Office Building for Admini- stration	4,000,000 Baht
	(Total cost 43,140,000 of which	
	19,570,000 committed for 1985	
	budget and 19,570,000 committed	
	for 1986 budget)	
	d) Students Dormitory (4 units)	6,300,000 Baht
	(Total cost 63,000,000 of which	
	35,000,000 committed for 1985	
	budget and 21,700,000 for 1986	
	budget)	
	e) Land Improvement	15,000,000 Baht
	f) Renovation of existing building	3,300,000 Baht

Appendix 10 Japanese Organizations in Thailand for International Exchange

The major organizations in Thailand which provide information on Japan, encourage and support Japanese studies, and provide information on Thailand to the Japanese are as follows:

1. Japanese Embassy's Public Relations and Cultural Affairs Center

A center to distribute up-dated information on Japan and to promote cultural exchange between Thailand and Japan was established in 1957 in the Japanese Embassy in Thailand. As part of the Japanese Government the center mainly pursues the Government's policies and enterprises. Its activities are basically classified into public relations and cultural affairs.

1.1 Public Relations

1.1.1 Service for the Mass Media

- Edit, publish, and distribute "Press Service" and "Photo Service" introducing today's Japan in Thai.
- Broadcast TV programs featuring Japan.

1.1.2 Lending and Showing Public Relations Films

- Lend films on Japan produced by the Japanese Ministry of Foreign Affairs.
- Send a public relations car periodically to local areas to give film shows.
- Give monthly film shows in Bangkok.

1.1.3 Publication and Distribution of Information

- Distribute information on Japan in English published by the Japanese Ministry of Foreign Affairs.
- Edit, publish, and distribute information in Thai for public relations.

1.1.4 Organize and Assist Events Introducing Japan

- Organize events introducing Japan with other organizations.
- Assist seminars, lectures, etc. planned by Thai universities.

1.1.5 Answering Inquiries

- Answer various inquiries about Japan by letters, phone calls, and visits from Thai people.

1.2 Cultural Affairs

1.2.1 Selection and reception of exchange students

- Select about 60 to 80 Thai students every year to receive a Japanese Government's scholarship for studying in Japan.
- Give permission to Japanese students to enter Thai schools.
- Liaise with Thai universities.

1.2.2 Assistance to Thai People returning from Japan

- Correspond with and render optimum assistance to more than 2,000 Thai people who have returned from studying in Japanese universities during the past five decades. (e.g. Financially support such related associations as the Japanese Exchange Students Association and act as a Japanese representative to help carry out various related programs, etc.)

1.2.3 Invitation of Thai Scholars, Intellectuals, and Professionals working in Education to Japan

- Invite such Thai persons to Japan as may be most active and influential in the fields of cultural and educational exchange and have them observe the current situation of Japan.

1.2.4 Assistance to the Promotion of Education, Sports, and Culture

- Execute the 'Cultural Grant Aid' promoted by the Japanese Government.
- Promote and advise on such programs for educational or cultural assistance as projected by Japanese non-governmental associations.
- Assist the above associations clear customs.

1.2.5 Promote Academic Cooperation Including Cooperation between Japanese and Thai Universities

- Financially promote such academic cooperative studies as carried out by seven to nine Japanese academic research groups sent to Thailand each year and academic cooperative enterprises by the Japan Academic Promotion Association.

1.2.6 Management of the Auxiliary Japanese Language School of the Center

- Provide Japanese language education of the highest standard in Thailand by two Japanese professionals.

1.2.7 Periodical Film Shows and Travelling Film Shows at Local Universities

- Give a Japanese film show to Thai people every month at the center.
- Send a public-relations car to universities, teachers training schools, etc. in various locations to hold film shows at least once every two months.

1.2.8 Lending Japanese Books

The center's library has about 2,000 books at present for lending.

2. The Japan Foundation

The Japan Foundation was established in 1972 as an auxiliary agent of the Japanese Ministry of Foreign Affairs to provide the financial and structural stability and permanence indispensable to execute exchange programs. The main activities of the Japan Foundation are as follows:-

(1) Exchange of Persons

Dispatch and invite persons.

(2) Assistance for Japanese Studies

Popularize study of the Japanese language and assist Japanese studies.

(3) Execution of or Assistance for Various Events

Execute or assist in various events such as exhibitions and performances.

(4) Publication and Distribution of Information Introducing Japanese Culture

(5) Promotion of Audio-Visual Presentations

The Japan Foundation has 10 overseas representative offices, two of which are in the ASEAN countries, namely the Japanese Cultural Center in Jakarta and a representative office in Bangkok. The activities at Bangkok since establishment are as on the following pages. (The Japan Foundation Annual Report, 1982)

The Bangkok representative office has a library containing about 4,000 books on Japan in order to assist Japanese studies in Thailand.

2.1 Activities of the Japan Foundation in Thailand since Establishment

2.1.1 From 1971 to 1980

			<u>Number of persons or projects</u>
Exchange of persons	Dispatch	Long-term dispatch to Thailand	8
		Short-term dispatch to Thailand	113
	Invitation	Long-term invitation to Japan	25
		Short-term invitation to Japan	35
		Group invitation to Japan	153
	Japanese Study	Promotion of Japanese Language Education	Dispatch of professionals of Japanese language education to Thailand
Invitation to speech contest in Japanese in Japan			1
Financial support for on-site lecturers for Japanese seminars			24
Financial support for speech contest in Japanese in Thailand			6
Assistance for Japanese Studies		Training seminar for excellent students at Japanese language seminars	18
		Dispatch of professors and lecturers to Japanese studies seminars	56
		Invitation of assistants for Japanese studies seminars to Japan	5
		Financial support for Japanese studies	21
Event	Exhibition	Travelling exhibition in Thailand	2
	Performance	Sponsorship of performance	7
		Financial support of performance	3
		Invitation of "The First Exchange of Asian Traditional Public Entertaining Arts" to Japan	1

			<u>Number of persons or projects</u>
Reference material		Financial support for publication	5
		Purchase and shipment of books	24
		Purchase and shipment of textbooks for Japanese language seminars	36
		Purchase and shipment of textbooks for Japanese studies seminars	12
		Production of lecturers manuals	2
 2.1.2 <u>In 1981</u>			
Exchange of persons	Dispatch	Short-term dispatch to Thailand	29
	Invitation	Long-term invitation to Japan	5
		Short-term invitation to Japan	4
		Group invitation to Japan	21
Japanese Study	Promotion of Japanese Language Education	Dispatch of professionals of Japanese language education to Thailand	9
		Financial support for on-site lecturers for Japanese language seminars	4
		Financial support for speech contest in Japanese in Thailand	1
		Seminar for lecturers on Japanese language seminars	2
		Training seminar for excellent students at Japanese language seminars	3
	Assistance for Japanese Studies	Dispatch of professors and lecturers to Japanese studies seminars	8
		Invitation of assistants for Japanese studies seminars to Japan	2
		Financial support for Japanese studies	6

			<u>Number of persons or projects</u>
Event	Exhibition	Travelling exhibition in Thailand	3
	Performance	Sponsorship of performance	1
		Financial support of performance	1
Reference material		Financial support for publication	3
		Purchase and shipment of books	2
		Purchase and shipment of textbooks for Japanese language seminars	9

3. The Technological Promotion Association (Thai-Japan)

The Technological Promotion Association(Thai-Japan) is a non-governmental organization established in 1973 by the assistance of the Japan-Thailand Economic Cooperation Society in Japan for the purpose of technological development promotion in Thailand. The objectives of the association are as follows:

- (1) Help association members improve their technology and disseminate such technology achieved to the general public.
- (2) Conduct seminars and training sessions on technology.
- (3) Collect information, translate, edit, and publish books and documents on technology.
- (4) Provide libraries of technical books, journals, and literatures.
- (5) Conduct Thai and Japanese language classes.
- (6) Liaise and cooperate with other institutions with similar objectives.

In order to fulfil the above objectives, the association carries out the following activities:

- (a) Seminars and training
- (b) Industrial technology support
(Research on and publication of technical texts, information collection)
- (c) Industrial instrumentation
(Training and mastering technical instruments)
- (d) Language training
(Education of Thai and Japanese languages)
- (e) Publication of 'TPA Journal' and management of the library
(Publish eight volumes of a technical journal per year)
- (f) Planning and analysis
- (g) Energy conservation

The Association is controlled by a Board of Directors comprising 14 directors, under which are provided sub-committees for the respective activities. The administration body of the association has three divisions under the supervision of the General Manager as follows:

(Administration Division)

General affair section
Accounting section

(Activity Division 1)

Industrial technology support section
Language education section
Publication and library section

(Activity Division 2)

Seminar section
Industrial instrumentation section
Energy conservation section
Quality control section

At present, the association is staffed by 27 personnel, two of whom are Japanese professionals dispatched through the Japanese liaison of the association for the teaching of Japanese and other projects. The operational budget is about ¥ 100 million per year, 60% of which is contributed by various Japanese organizations.

4. The Japanese Chamber of Commerce and Industry, Bangkok

The Japanese Chamber of Commerce and Industry in Bangkok is comprised of Japanese residents, branch offices of Japanese corporates, representative offices and staff, and local corporates in Thailand related to Japan. The number of the members as of April 1, 1983, is 369. The purposes of the chamber are as follows:

- (1) Promote commerce, industry, and economy in general between Thailand and Japan.
- (2) Encourage goodwill and understanding among members.
- (3) Assist and provide service for the development of members' commercial activities.
- (4) Other due activities in compliance with the Thai Chamber's Law established in the year 2509 on the Buddhist calendar.

In order to pursue these objectives, 20 committies and sub-committess have been formed within the Chamber. The Chamber also provides various information on economy, tax regulations, etc. of Thailand to its Japanese members and publishes four to five books annually.

Appendix 11 Government Building Standard of Thailand - 1978

Government Building Standard

1978

Objective : To standardize government office building in terms of functional floor area and cost per squaremeter as stipulated by the Budget Bureau. The following guidelines for designing and specification writing are used for all building-those required piling or non piling.

Design : All designs are encouraged on applying modular coordination method according to standard of Institute of Applied Science Technology of Thailand.

Building : For purpose of estimating total floor area of a building, each functional area shall be estimated according to the following guidelines

- Office of Minister, Under Secretary of State
(including toilet) = 40 M²/person
- Office of Deputy under secretary of state,
Director general, Deputy Director General = 30 M²/person
- Office of Director of Division/Chief of
Division = 16 M²/person
- Office of the officials whom position
higher than level 6 = 12 M²/person
- Working space for other officials
employees = 4.5 M²/person
- Working space for professionals = 6 M²/person
- Auditorium = 2 M²/person
- Waiting area = 1 M²/person
- W.C. = 0.5 M²/person
- storage or other areas shall be considered according to the
needs of each government unit e.g. laboratory, sitting room
- service area, circulation core shall be provided 1/3 of total
above areas
- Building higher than 4 storeys shall have fire escape.

Remarks : Parking area shall follow the law. If there is a need to build a cars' park within the building it is required an approval from Budget Bureau as special case.

Structure : Floor and stairs shall be reinforced concrete or fire-proofed material; shall be economically designed. In the case that piling is required, the concrete pile or prestressed concrete pile shall be used.

- roof truss shall be wood, steel or reinforced concrete according to suitability and economical considerations
- longitudinal span of building each bay shall not exceed 4.20 meters, cross span shall not exceed 8.40 meters.
- height of building
 - ground floor shall not be higher than 4 M.
 - other floor shall not exceed 3.60 M.
- false ceiling shall be provided where deemed necessary for example under the roof, under W.C. and the conference room
- corridor shall not exceed 2.70 meter wide except that emergency exit could be wider
- roof and slab overhang shall not exceed 2.10 meters
- sunscreen shall be provided where deemed necessary with economical design.

Building Materials :

All materials quoted here if not indicated source of origin, shall be used domestic products.

Reinforced Concrete Structure:

- cement shall be portland cement according to Industrial Standard Product
- sand aggregate or gravel shall be local material or of neighbouring sources acceptable with the technical requirement.
- reinforced steel shall meet Industrial Standard Product Wood structure
- shall be hard wood or chemical treated wood of similar strength Steel Roof
- shall meet Industrial Standard Product

Roof truss and Roofing

- Wood roof truss shall be hard wood or chemical treated wood of similar strength
- steel roof shall meet Industrial Standard Product
- reinforced concrete roof truss same as 3.1
- roofing shall be asbestos cement, shall meet Industrial Standard Product

Floor Stairs and Finishing

- reinforced concrete floor same as 3.1 or prefabricated floor system of equal allowable strength according to the requirement of the work
- floor finish of general building and stairs, general floor shall be terrazzo, the aggregates shall not larger than No. 3; shall be either cast in place or prefabricated. Venyle tile shall be at least 2 mm thick.
- toilet floor finish shall be of mosaic or ceramic with inexpensive price.

Wall

- exterior wall shall be of solid baked brick or hollowed baked brick or concrete baked brick veneer, non plastered or conglomerated wash. The end wall shall be reinforced concrete.
- interior wall shall be suitable and inexpensive material.
- toilet wall shall be the same material as exterior wall.
- The inside wall shall be finished with 2 meter high white ceramic or equivalent product.

False ceiling, Ceiling stud

- false ceiling shall be suitable and inexpensive material, wood ceiling stud shall be hard wood or chemical treated wood
- general ceiling shall be plastered or exposed concrete

Door and Door frame

- general door shall be glass with teak frame, steel frame aluminum frame or plywood door conforming to Industrial Standard Product
- frame shall be of hard wood/steel or aluminum

Hardwares

- hinges shall conform to Industrial Standard Product brass hinges shall be suitable to the weight of the door
- bolts, handles, door holders shall be anodized of chromium coated or aluminum alloy or brass
- lock shall be suitable for nature of work conforming to Japanese, European or American industrial standard.
- other shall be provided as necessary

Window and Window Frame

- window panel, general window shall be glass window with teak wood frame, aluminum frame, steel frame or teak wood panel or teak wood frame
- frame shall be of hardwood, steel or aluminum

Hardwares

hinges shall be galvanized iron, adjustable lock, handle and window holder shall be the same as door hardware size to be supplied according to size and weight of window. For glass window, steel or aluminum frame shall be used hardware as provided by the manufacture's product.

Sanitary Fixtures

shall be white porcelain, model and size shall not be expensive and meet the needs.

- water closet shall be Western/Eastern type
- lavatory with wall hung shelf
- urinal shall be wall type
- lavatory accessories shall be provided according to need.

Domestic product shall be prime consideration.

Sewage, Drainage and Vent Pipe

- water supply pipe shall be galvanized iron or hard type P.V.C.
- drainage and vent pipe shall be galvanized iron or hard type P.V.C.
- sewage shall be cast iron with asphalt coated or hard type P.V.C.

The underground sewage shall be cement or ceramic locally made.

- Galvanized iron pipe, P.V.C. pipe and cast iron pipe shall meet with Industrial Standard Product

Electrical Equipment

- all wiring could be exposed
- the quality of wiring and electrical appliances shall meet with Industrial Standard Product
- lighting fixtures and accessories shall meet with Industrial Standard Product

Finishing Material

- primer
- dyer
- wood/brick preservatives
- oil paint, linseed, lacquer
- varnish, shellac, epoxy
- plastic emulsion paint
- water plastic paint
- cement paint
- metal paint

shall be considered according to the surface of the object, necessity and economical view point. If there is a required standard of material, all material shall conform to the standard.

Other Component of the Building

- septic tank, underground drainage shall provide with size, quantity and design conforming to sanitary technology
- pavement shall be provided where necessary
- rain gutter shall be provided where necessary

Other Conditions

- For office buildings to be designed and specified as special case besides the said guidelines are required to negotiate with Budget Bureau for special conditions, for example
 - Thai style building
 - Building with concrete decking or prefabricated material
 - Building with high live load other than stipulated by law
 - Special types of building that require an excessive strength due to site

- Building on stilt, reinforced concrete floor on girder shall estimate the cost, according to Budget Bureau, only the open part.
 - lifts, air conditions, furniture and site development, electrical system, water supply system
- When requesting budget the size of building shall be estimate according to the area as mentioned earlier with the projection number of staff requirement within the period of 5 year. The total floor area shall multiply by cost/sq.meter.
 - Room layout of the building shall be according to the nature or work.
 - The estimation of floor area of a building shall be the multiplying of the length and width of the building at center of the column.
 - When the design has been finished, it is required that median cost estimate be worked out for evaluation of the bids. The median cost estimate shall not exceed the cost estimate when calculated by area/sq.m as previously mentioned.
 - If the design does not conform to the guideline, the building shall have cost per squaremeter with similar type of building.

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