

- Fence and gate
- Outdoor Lighting

Layout Plan of the buildings is shown on the attached Drawing No.5.2.4-2.

5.2.5 Rough Cost Estimation for Training Equipment and Facilities

(1) Training Equipment

The following shows a rough estimation of the cost of procuring the equipment and materials necessary for the New Training Center.

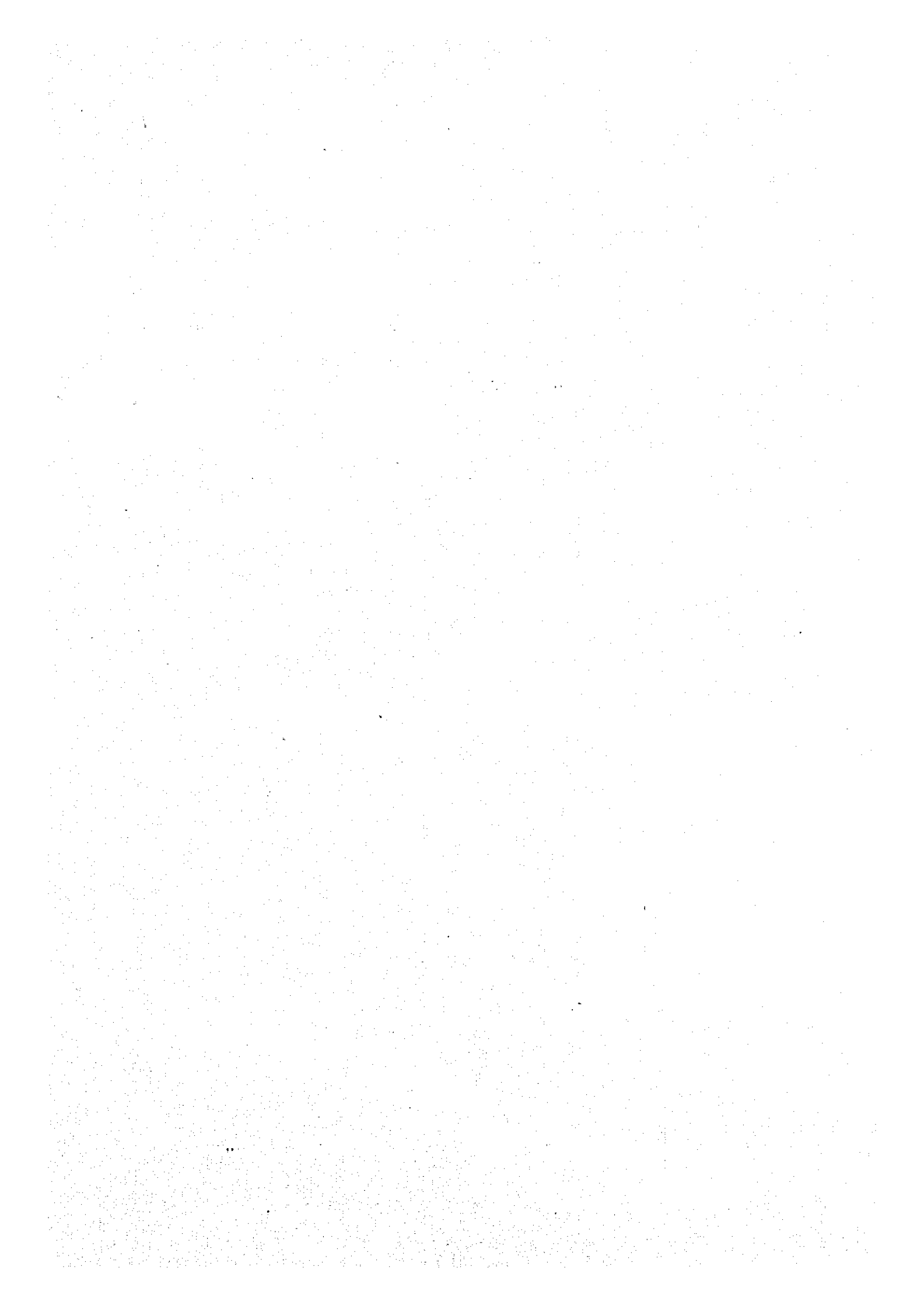
1) Equipment and Materials Cost	k¥930,000
2) Transportation Cost (sea and land)	k¥90,000
3) Installation Cost	k¥80,000
<hr/>	
Total	k¥1,100,000

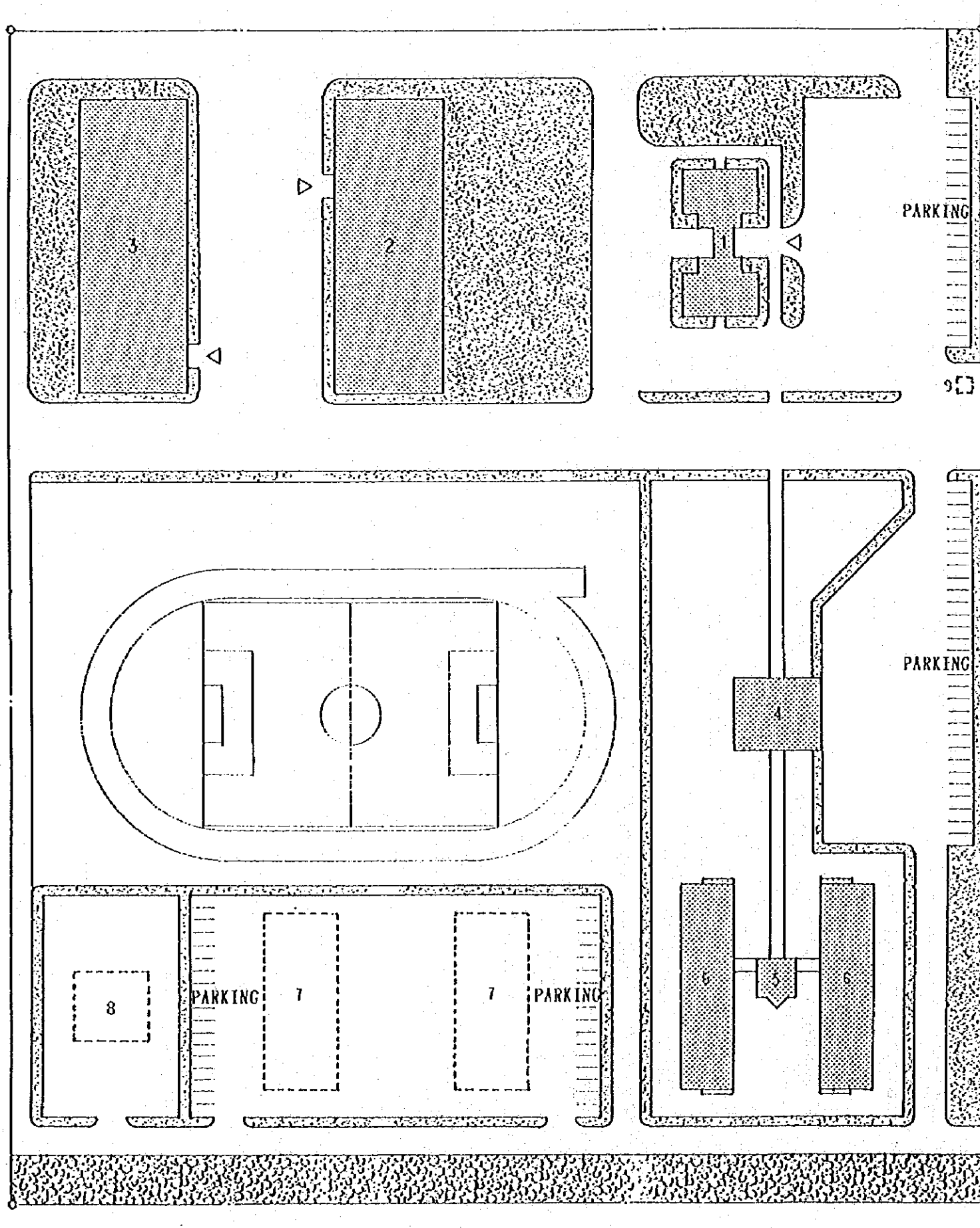
(2) Facilities

1) Buildings	k¥1,607,000
2) Contingency	k¥73,000
<hr/>	
Total construction Cost	k¥1,680,000

(3) Grand Total (1) + (2) k¥2,780,000

Note: Taxes and duties which may imposed by the Syrian Government are not included in the cost estimation above.



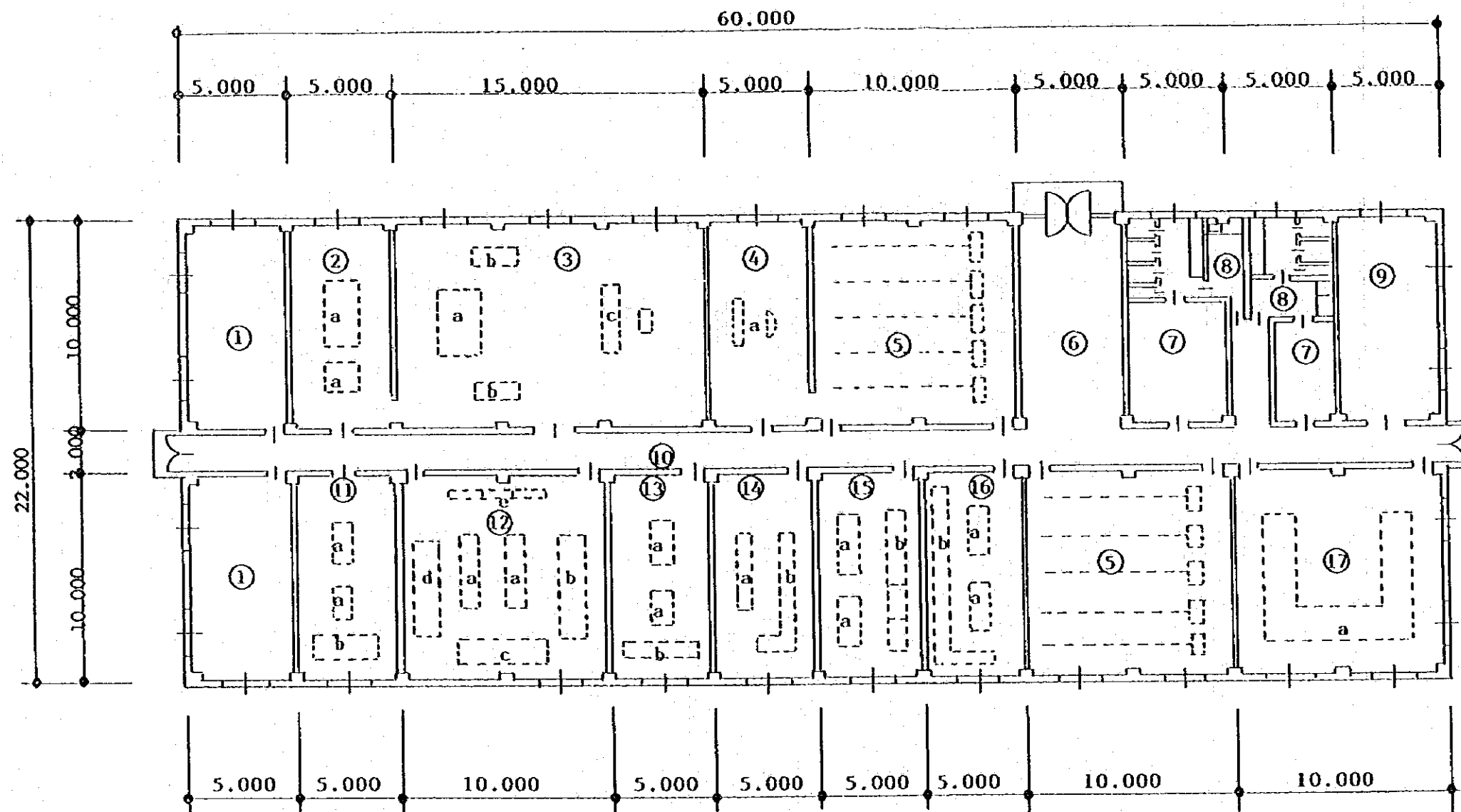


- 1 ADMINISTRATION BUILDING
- 2 LABORATORY BUILDING
- 3 WORKSHOP BUILDING
- 4 CANTEEN
- 5 DORMITORY OFFICE
- 6 DORMITORY
- 7 APARTMENTS FOR STAFFS
- 8 DIRECTOR'S RESIDENCE
- 9 GATEHOUSE

1. Administration Building	706.80 m ²
2. Laboratory Building	1,320.00 m ²
3. Workshop Building	1,320.00 m ²
4. Canteen	270.00 m ²
5. Dormitory office	66.25 m ²
6. Dormitories for Students	1,296.00 m ²
Total Floor Area	4,979.05 m²

SITE PLAN 1 : 1000

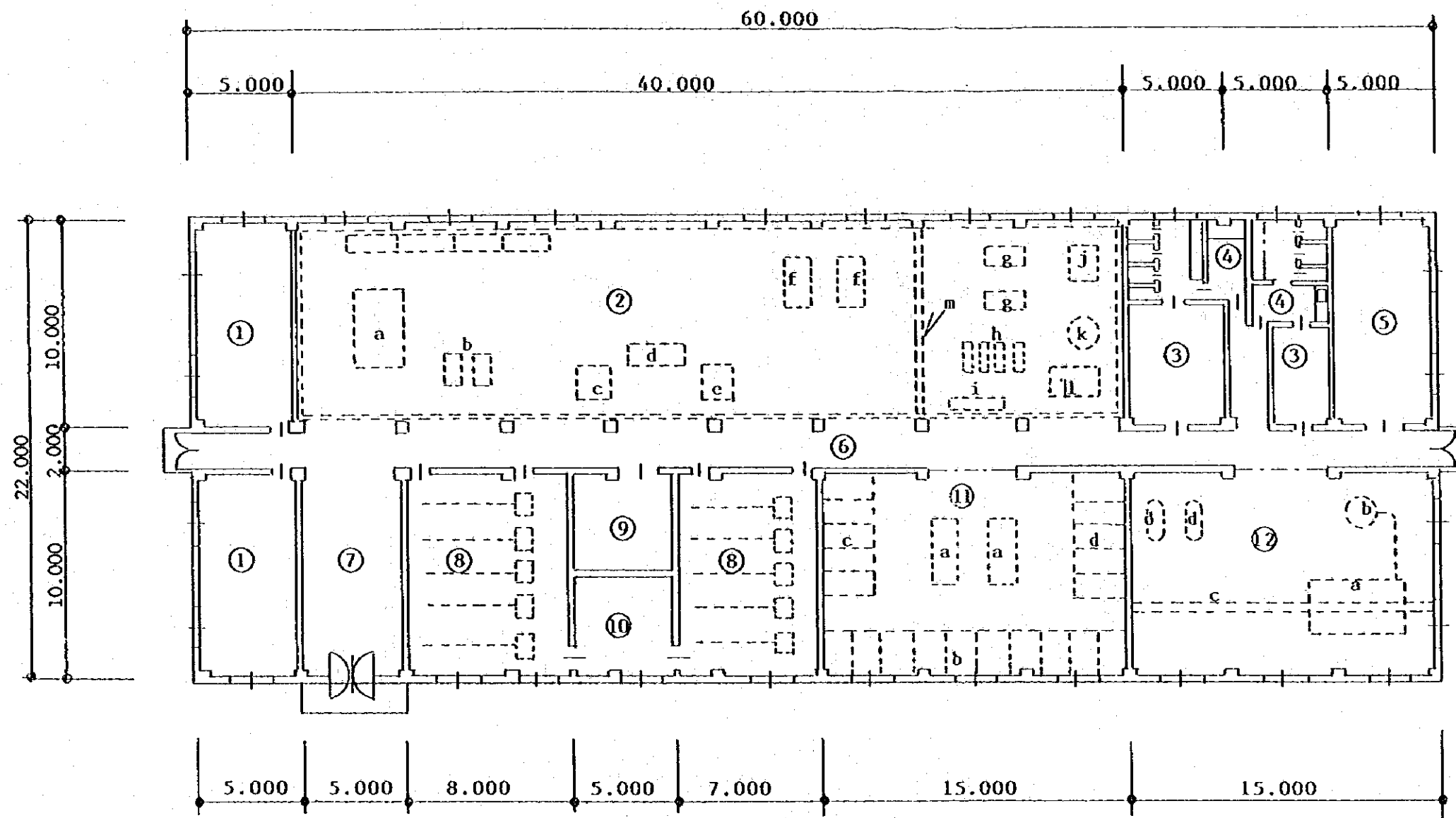
DWG-NO.5.2.4-2 Facility Layout Plan



LABORATORY BUILDING PLAN 1: 250

No.	Room	Main Training Equipment to be Installed	No.	Room	Main Training Equipment to be Installed
①	Instructor's Room		⑫	Advanced Electrical Laboratory	a: Work Bench b: GCB-VCB-ACB Panels c: AVR-Frequency-Relay Panels d: Relay Panel e: Measuring Instruments, Tool Rack, etc
②	Computer Room	a: Computer for Simulator	⑬	Advanced Mechanical Laboratory	a: Work Bench b: Valves
③	Simulator Room	a: Boiler-Turbine-Generator Panel b: Auxiliary Panel c: Shift-chief's Desk			
④	Instruction Room	a: Instructor's Bench	⑭	General Control Laboratory	a: Work Bench b: Pressure Switches, Recorders Chemical Instruments
⑤	Class Room		⑮	General Electrical Laboratory	a: Work Bench b: Sequence Practice Panel, Protection Panel Plastic Model (Rotor etc)
⑥	Entrance Hall				
⑦	Locker Room		⑯	General Mechanical Laboratory	a: Work Bench b: Valves, Plastic Model(Boiler etc)
⑧	Toilet, Washroom, Pantry				
⑨	Electrical Room		⑰	NDT Testing Room	a: Work Bench, Various Testing Devices
⑩	Corridor				
⑪	Advanced Control Laboratory	a: Work Benche b: Sensor & Valves, etc			

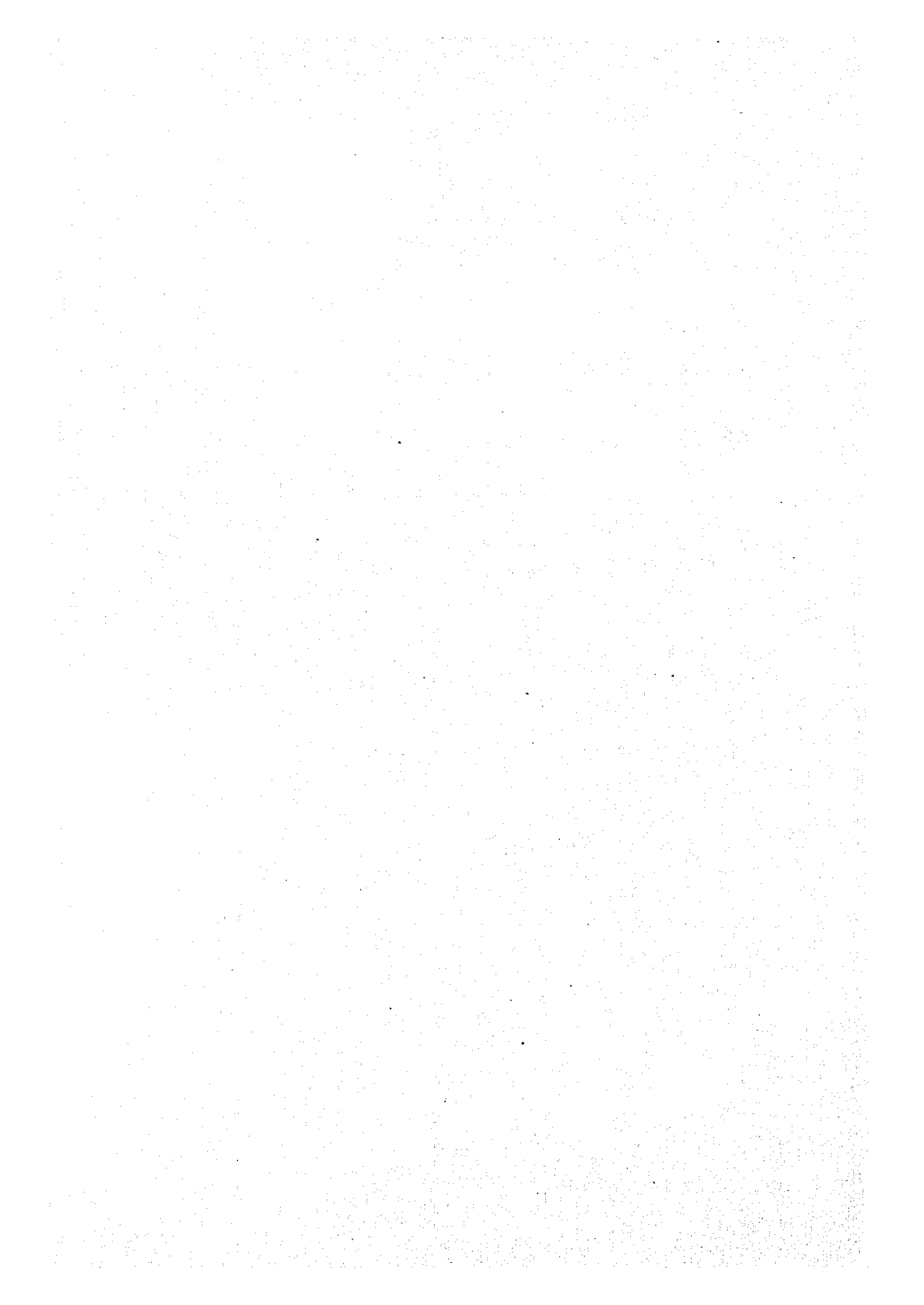
DWG-NO 5244
Main Equipment Layout Plan
(Laboratory)



WORKSHOP BUILDING PLAN 1 : 250

No.	Room	Main Training Equipment to be Installed	No.	Room	Main Training Equipment to be Installed	No.	Room	Main Training Equipment to be Installed
①	Instructor's Room		③	Locker Room	-	⑫	Compressor Room	a: Air Compressor
②	Workshop	a: Ventilator	④	Toilet, Washroom, Pantry	-			b: Receiver
		b: Control Drive	⑤	Electrical Room	-			c: Geared Trolley Hoist (3 ton)
		c: Governor	⑥	Corridor	-			d: Air Compressor (Small)
		d: Control Valve	⑦	Entrance Hall	-			
		e: Main Stop Valve	⑧	Class Room	-			
		f: Large Motor	⑨	Tool Room	-			
		g: Horizontal Pump(Large)	⑩	Preparation Room	-			
		h: Horizontal Pump(Small)	⑪	Welding Laboratory	a: Work Bench			
		i: Control Panel			b: Electric Welding machine			
		j: Head-tank			c: TIG Welding Machine			
		k: Vertical Tank			d: Gus Cutting Apparatus			
	l: Water Tank(Underground) Vertical Pump							
	m: Over Head Crane(5 ton)							

DWG-NO 524-6
Main Equipment Layout Plan
(Workshop)



5.3 Operation and Maintenance Costs of the New Training Center

The following shows a calculation of the annual operation and maintenance costs for the New Training Center after completion of construction and commencement of activities. The PEEGT needs to take necessary measures to ensure that the budget for such costs is obtained at the same time of completion of construction.

1) Personnel Costs	US\$ 248,400/year
2) Water, Lighting and Heating Costs	
a) Electricity	US\$ 60,000/year
b) Fuel Costs	US\$ 25,200/year
3) Communications Costs	US\$ 3,600/year
4) Building and Facilities Maintenance Costs	US\$ 12,000/year
5) Teaching Materials and Equipment Purchase Costs	US\$ 48,000/year
6) Food Costs (Reference only)	US\$ 223,200/year)
7) Total	

1) Personnel costs	= US\$ 248,400-
2) Water, heating and lighting costs	= US\$ 85,200-
3) Communications costs	= US\$ 3,600-
4) Buildings and facilities maintenance costs	= US\$ 12,000-
5) Teaching Materials and Equipment Purchase Costs	= US\$ 48,000-
6) (Food costs)	= (US\$ 223,200-)

Total excluding food costs	US\$ 397,200/year
(Including food costs)	(US\$ 620,400/year)

It is thus estimated that the PEEGT needs to prepare some US\$ 400,000 each year to cover the operation and maintenance costs of the New Training Center.

5.4 Financial Consideration of the Proposed Training Center

At present, MOE manages three technical institutes, and a total of SP.49.5 million is allotted as budgets for those institutes in 1994.

The proposed training center will incur a total capital cost of US\$ 27.8 million (SP.311 million). The center will also require annual recurrent cost of SP.16.7 million, (42 SP for 1 US\$) for other operation and maintenance cost.

In the case that MOE and PEEGT would maintain the current portion of training budget to the total operation and maintenance budget, the recurrent expenditure for the proposed training center can be born by the budget for PEEGT.

As for capital investment, however, MOE or PEEGT seems not be able to bear the cost in the current budgetary conditions. The building construction and equipment purchase would preferably be financed by foreign grants.

5.5 Recommendations

5.5.1 Positioning of the New Training Center

The New Training Center aims to provide training to graduates from existing MOE-run technical institutes and to provide retraining for staff in the existing thermal power plants. Compared to the existing technical institutes, the New Training Center will therefore provide advanced and more practical training contents with the aim of nurturing staff skills that can immediately prove useful in actual plant operation and maintenance activities. The technical level of the training will be high and the Center will be treated as the central institution in the training organization of the MOE and PEEGT.

5.5.2 Securing of Instructors

The success of the New Training Center in fulfilling its designed functions and nurturing good graduates entirely depends on the securing of excellent instructors. The PEEGT must assign the instructors described in Section 5.2.1 to the Center at least six months before the completion of construction in order to provide ample time for the preparation of detailed training curriculums, time schedules and text books etc.

The PEEGT Training Department shall play the central role in securing the instructors from those currently teaching at the existing technical institutes and also from among engineers and technicians currently working at the thermal power plants. There is not currently a surplus of operation and maintenance engineers and technicians at the existing power plants and it is forecast that the plants will hesitate to dispatch their best engineers and technicians to the

New Training Center. Vigorous efforts must, however, be made to obtain the cooperation of the plants as the New Training Center will make a major contribution to the improvement of operation and maintenance technical levels at the plants and, as a result, lead to the future improvement of output and thermal efficiency levels.

5.5.3 Links with Existing Technical Institutes and the Power Plants

As well as maintaining close links with the existing technical institutes, it will be necessary to encourage exchange of instructors with the existing technical institutes in order to have the consistency of training curriculums, to aid the preparation of trainee acceptance plans, and to contribute to improve the technical levels of the instructors and to nurture future instructors.

It will also be necessary to maintain close links and hold consultations with the power plants in order to establish trainee acceptance plans and a cooperation setup whereby requests for the dispatch of instructors, and to make site training plan at the plants easier, and, also, to secure work places for graduated trainees.

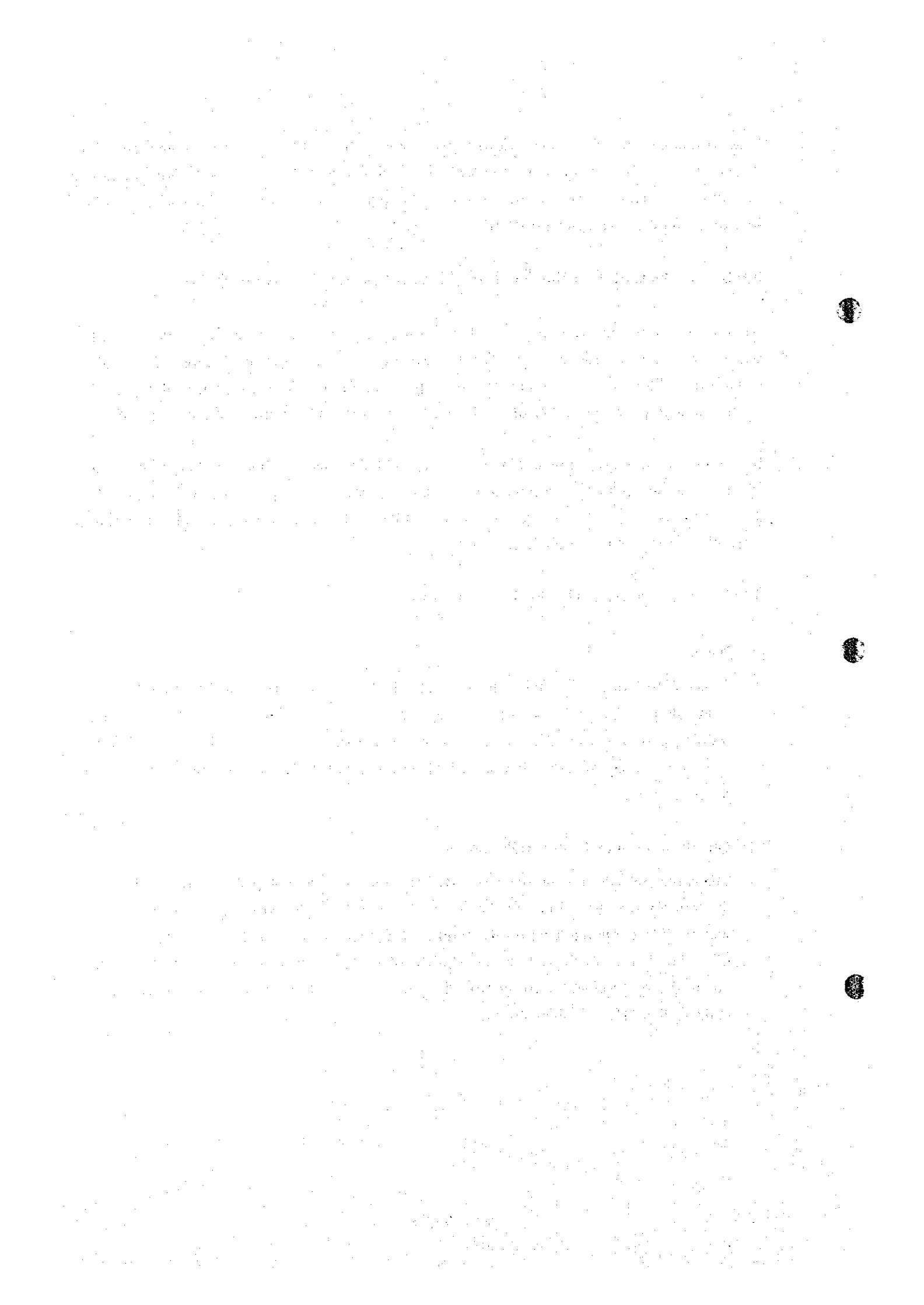
5.5.4 Treatment of Graduate Trainees

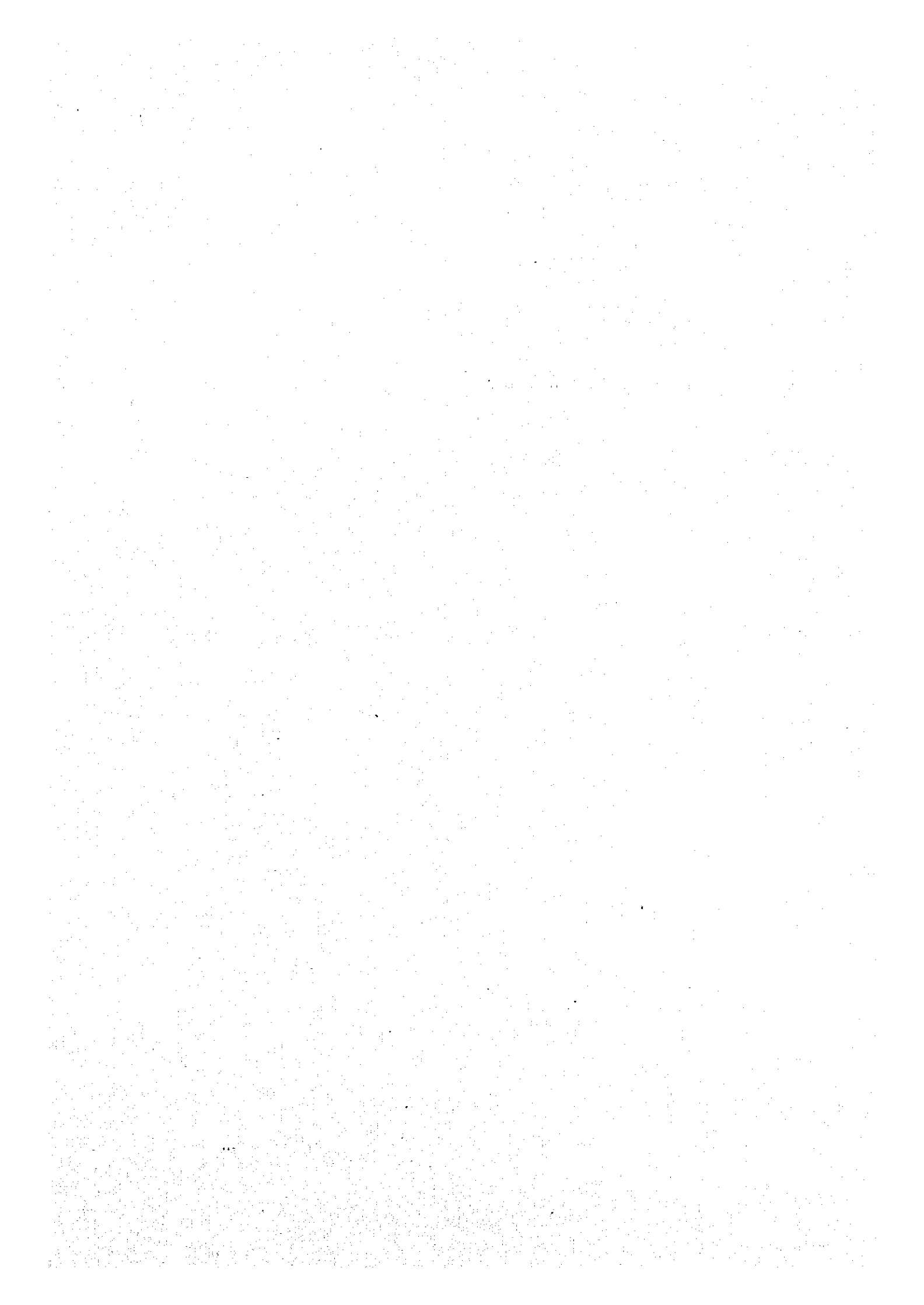
(1) Salaries

Concerning trainees dispatched from power plants, it will be necessary to provide them with salaries equal to what they would receive as power plant employees during the training period and also, as is the case in the existing technical institutes, exempt all trainees from paying tuition fees in order to ensure that the trainees are fully motivated to learn.

(2) Qualifications, Pay Rises and Promotions

The conferring of state-authorized or MOE-authorized technical qualifications or titles on the trainees who have finished the required courses and passed the final examinations, will provide a concrete goal for the trainees. Moreover, by raising the pay and promoting the qualifications of those trainees who return to their respective power plants having obtained the aforementioned qualifications or titles, the trainees will feel motivated to make further efforts in their studies.





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