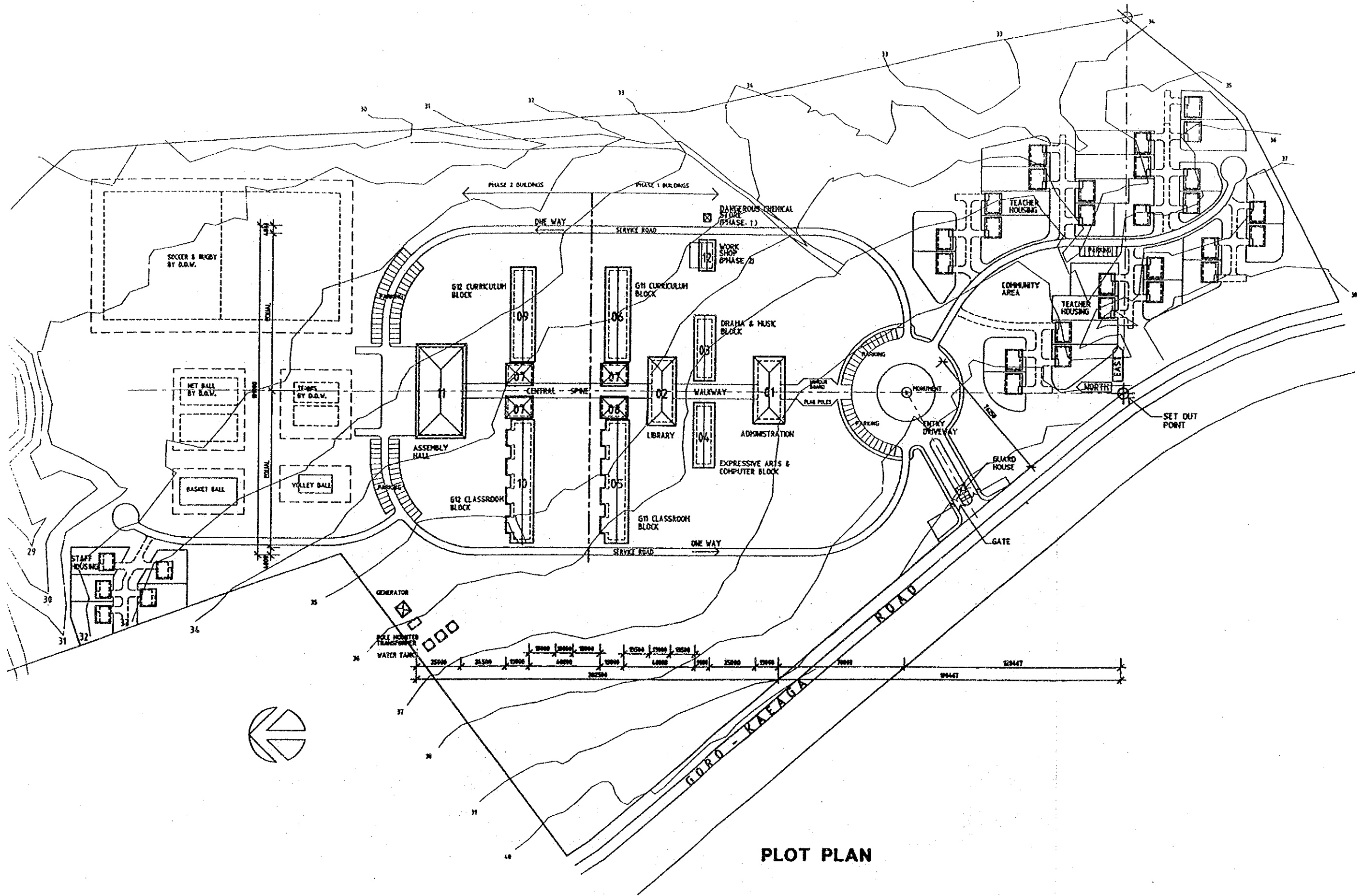
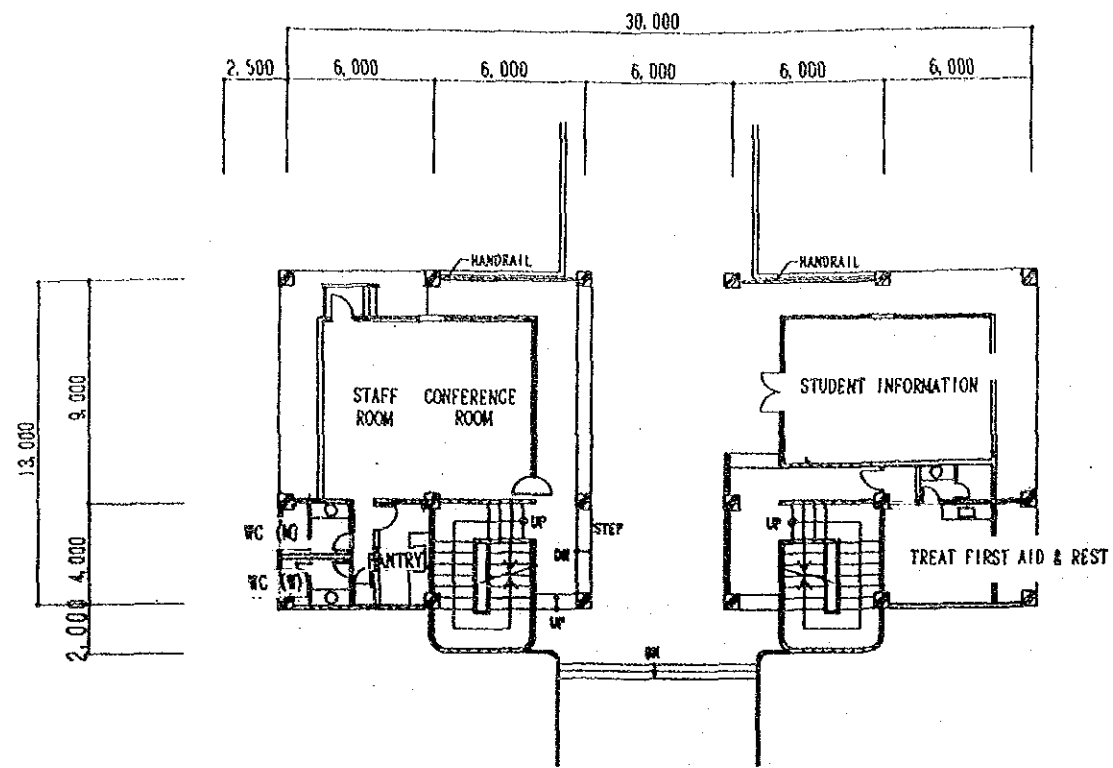
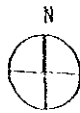


4-3-7 Basic Design Drawing

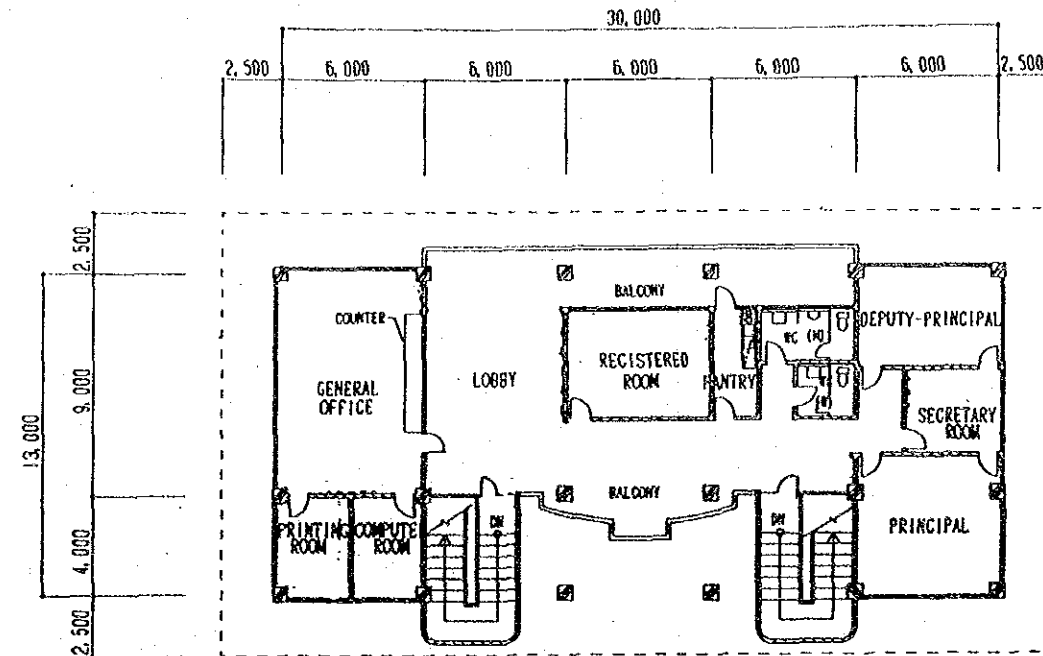


PLOT PLAN

創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS ARCHITECTS & ENGINEERS 建築士事務所 31889号 八木 英 雄 HIDEYO HACHRYA	NOTE		WORK NO.	DATE	TITLE GERENU HIGH SCHOOL	DRAWN NO.
			APPROVAL	DRAWN SCALE	PLOT PLAN	1

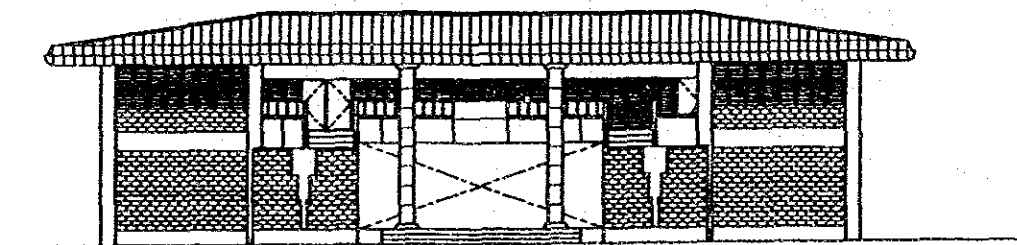


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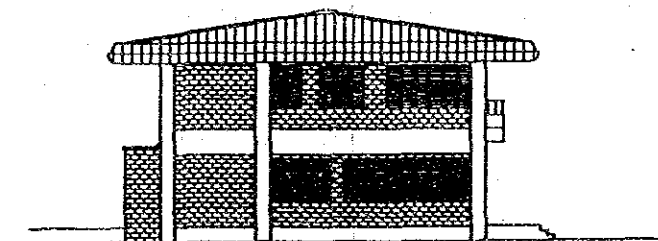


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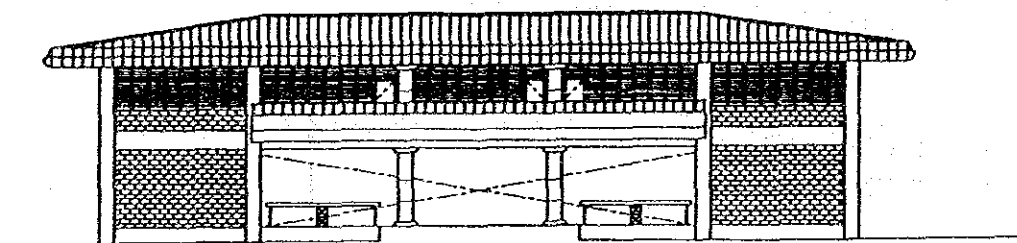
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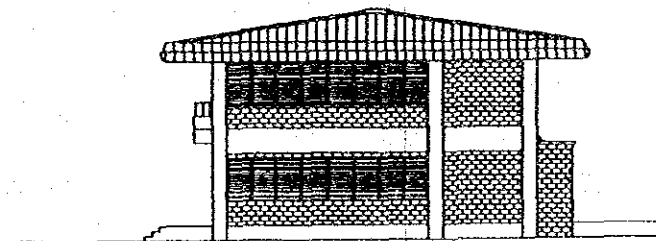
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EAST ELEVATION

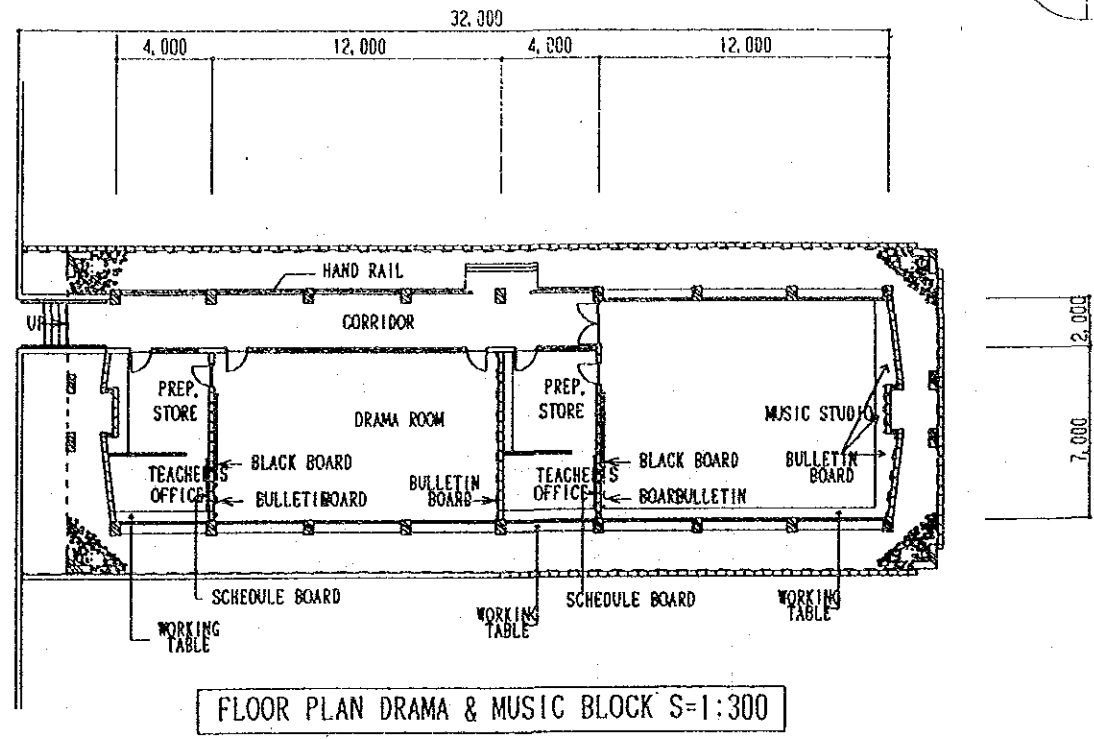
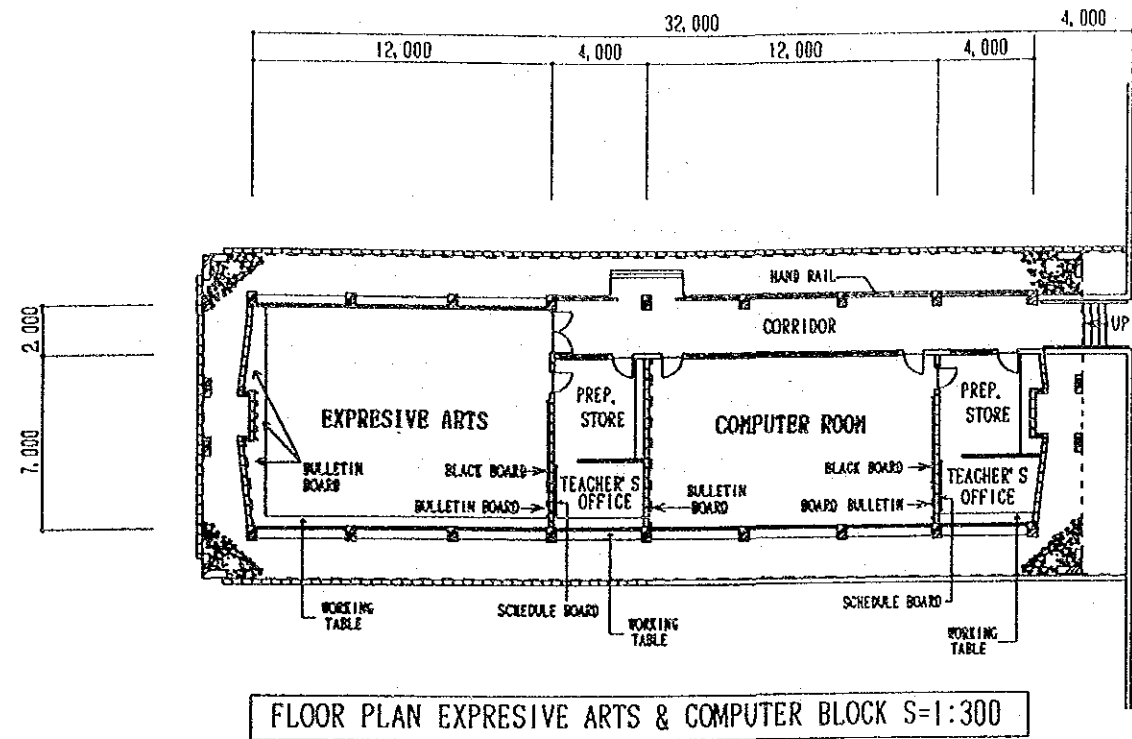
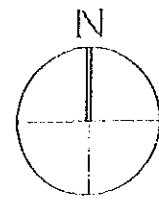


NORTH ELEVATION



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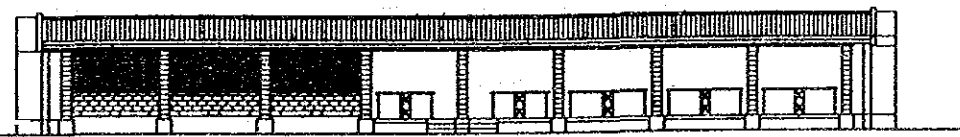
創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS, ARCHITECTS & ENGINEERS 建築士事務所 1118 年 八 月 東京 町 區 日 本 橋 一 丁目 1 番 1 号	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
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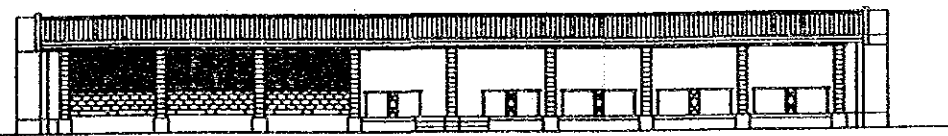
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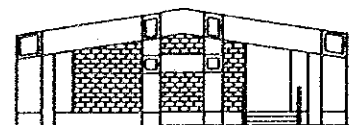
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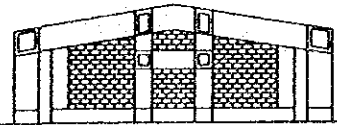
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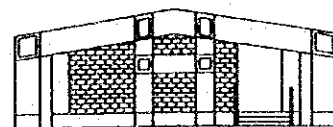
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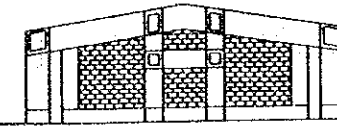
EAST ELEVATION



WEST ELEVATION



WEST ELEVATION



EAST ELEVATION

創造社 SOZOSHA CO., LTD. TOKYO
CONSULTANTS ARCHITECTS & ENGINEERS
1級建築士事務所 東京都港区八木 1-1-1 八木ビル 1F

NOTE

WORK NO.

DATE

TITLE GEREHU HIGH SCHOOL

DRAWN NO.

APPROVAL

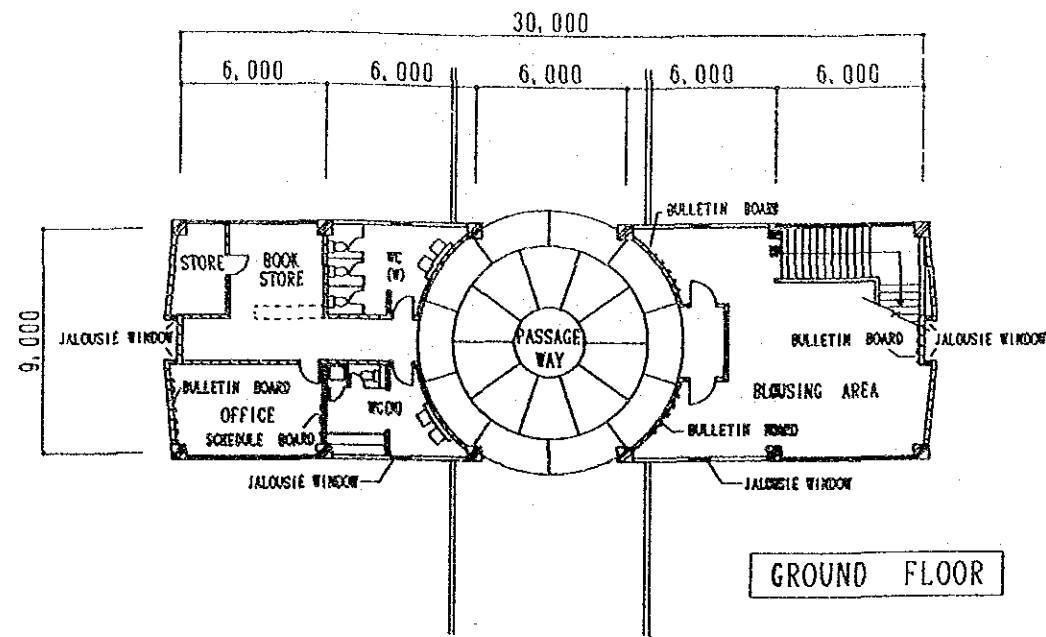
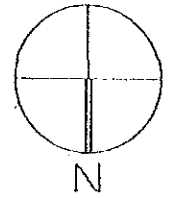
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SCALE

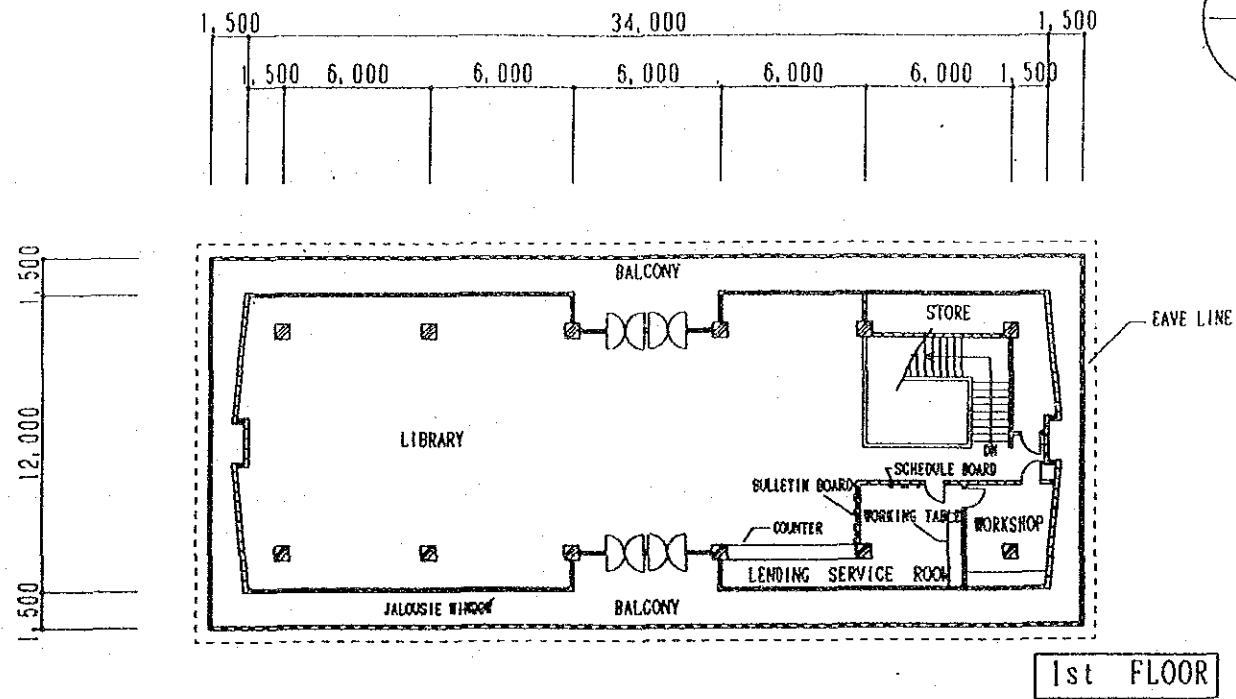
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3

DRAMA & MUSIC BLOCK

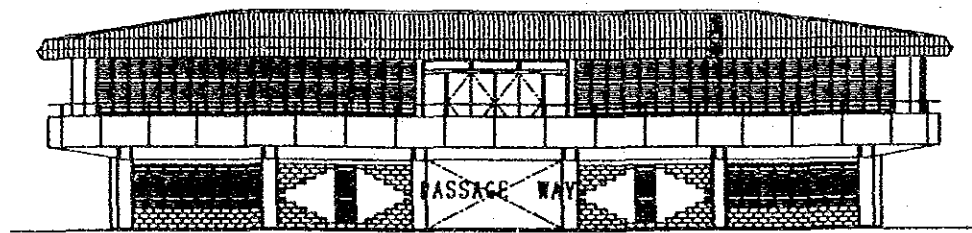


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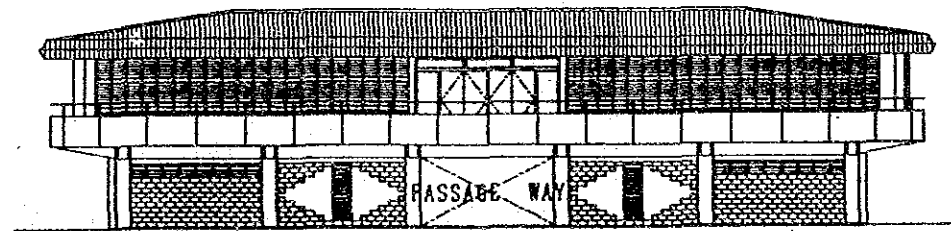


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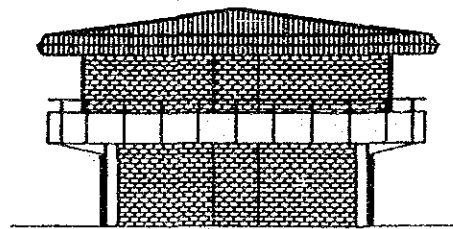
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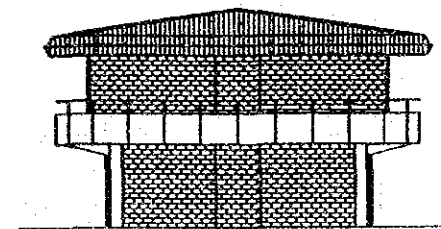
SOUTH ELEVATION



NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION

創造社 SOZOSHA CO., LTD. TOKYO
CONSULTING ARCHITECTS & ENGINEERS
1000 東京市丸の内區千代田 丸の内ビルヂング 8 階 電話 261-1111

NOTE

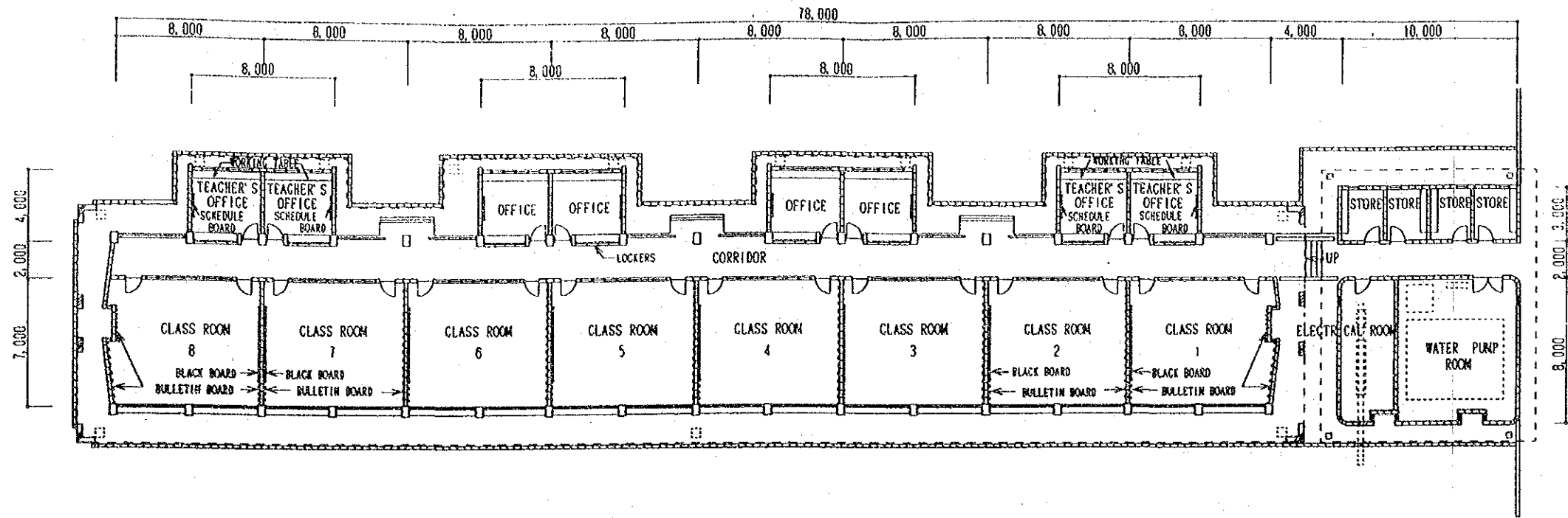
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APPROVAL

DATE
DRAWN

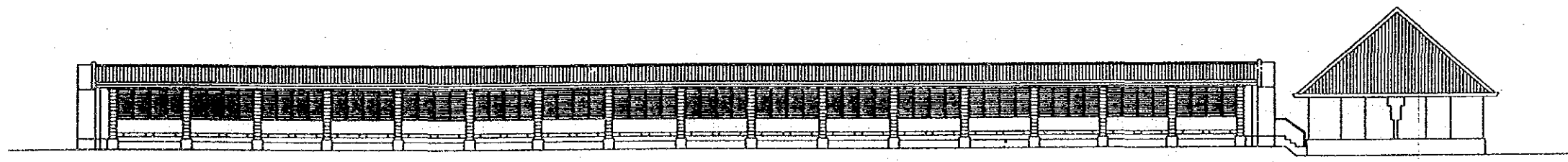
SCALE
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TITLE
GEREHU HIGH SCHOOL
LIBRARY BLOCK

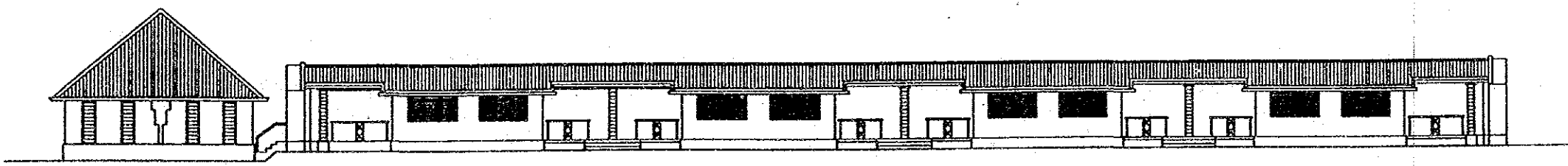
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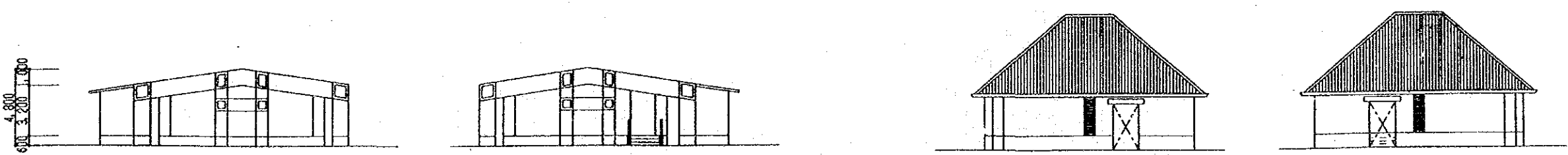
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SOUTH ELEVATION



NORTH ELEVATION



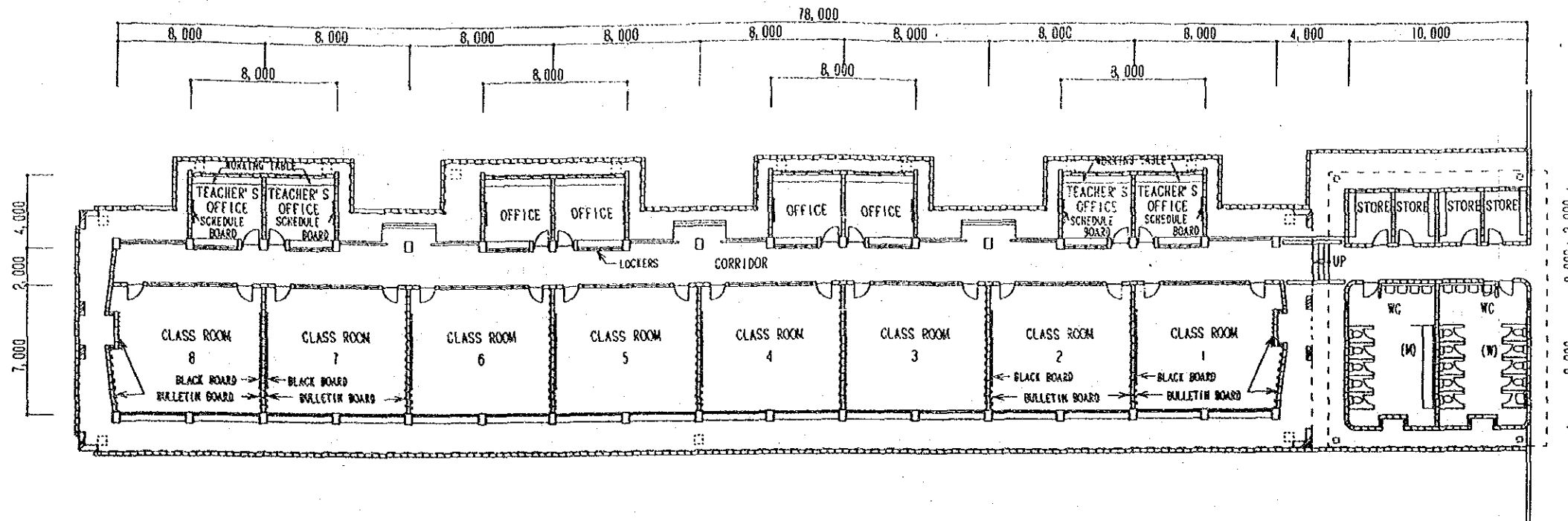
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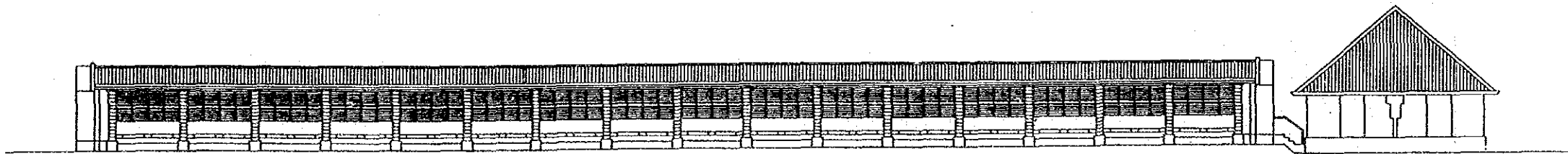
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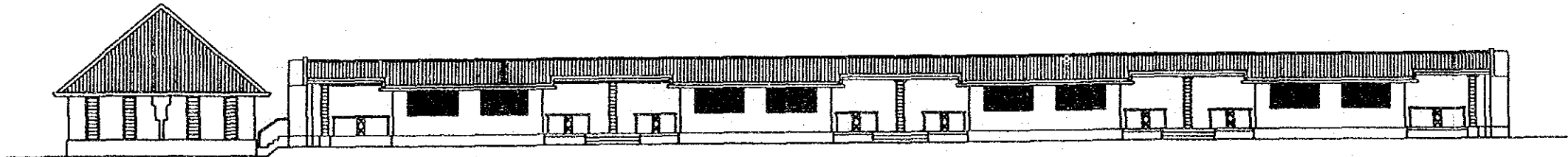
創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS ARCHITECTS & ENGINEERS (東京都千代田区千代田 1-1-1)	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
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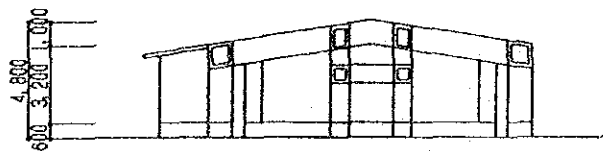
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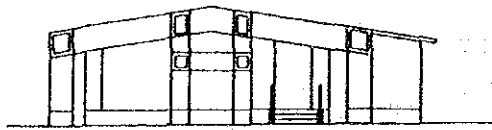
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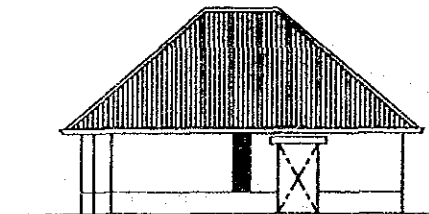
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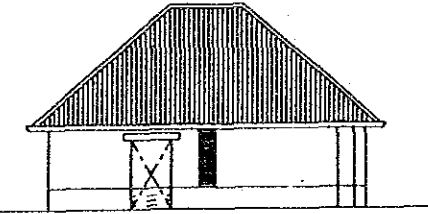
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EAST ELEVATION



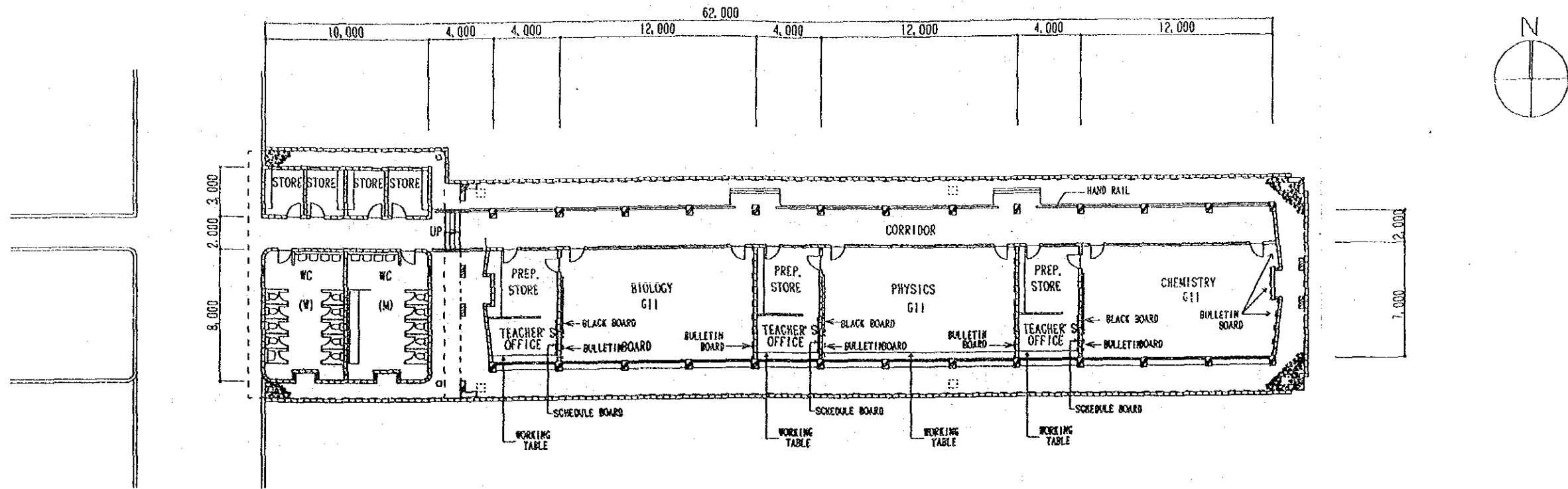
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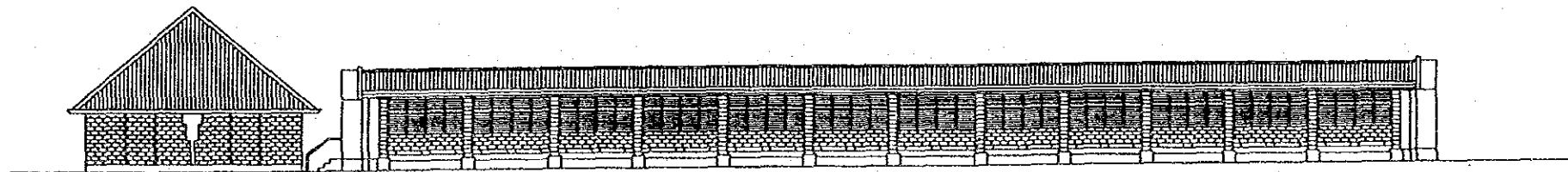
WEST ELEVATION

創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS ARCHITECTS & ENGINEERS 建築師事務所 東京都港区 八雲 廣 事務所 HIDEYO-HACHIVA	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
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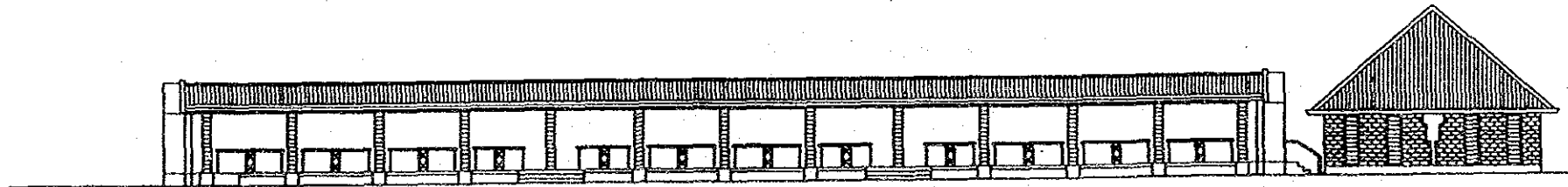
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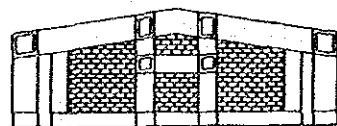
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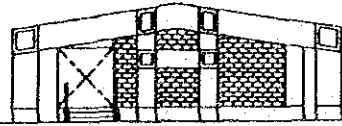
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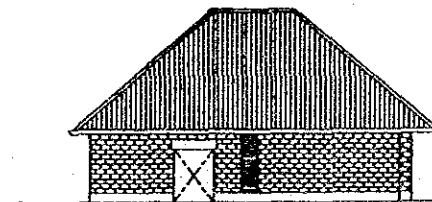
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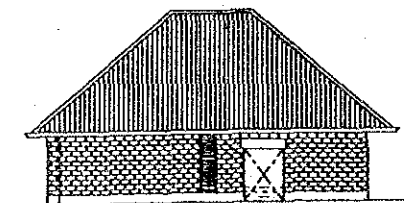
EAST ELEVATION



WEST ELEVATION



WEST ELEVATION



EAST ELEVATION

創造社 SOZOSHA CO. LTD. TOKYO
CONSULTANTS ARCHITECTS & ENGINEERS
建築士事務所 第1188号 大友 英 寛 HIDEYO HACHRYA

NOTE

WORK NO.

DATE

TITLE GEREHU HIGH SCHOOL

DRAWN NO.

APPROVAL

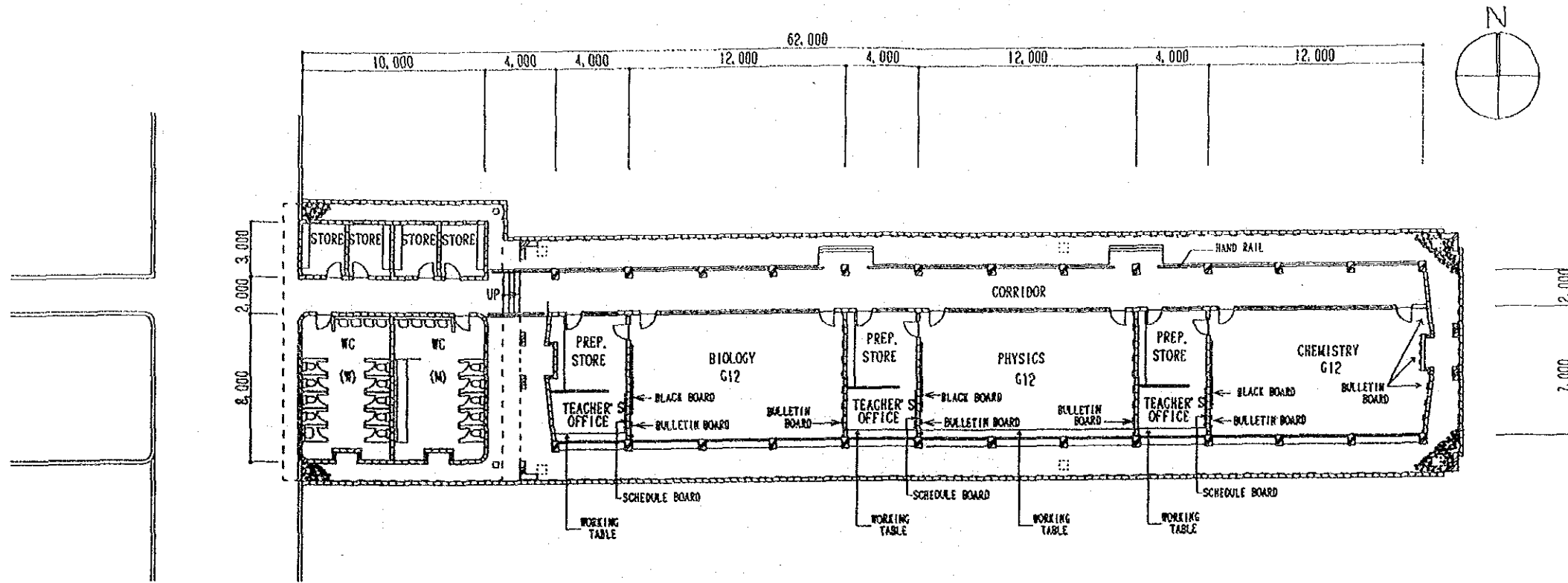
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SCALE

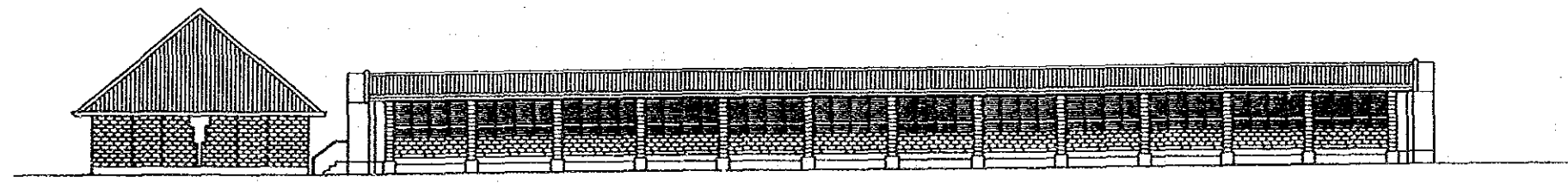
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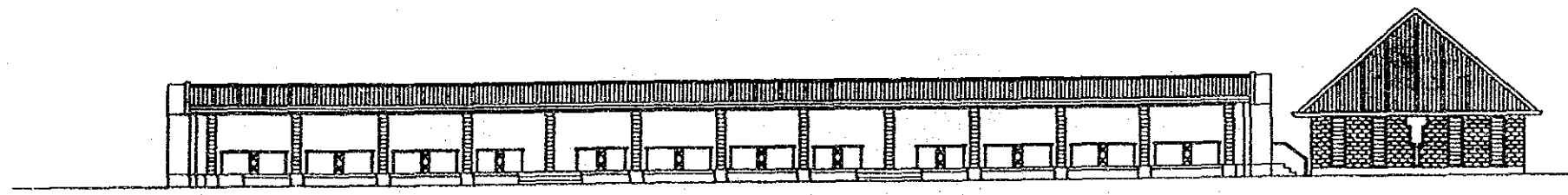
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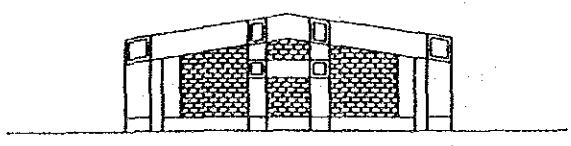
FLOOR PLAN CURRICULUM G12 BLOCK S=1:300



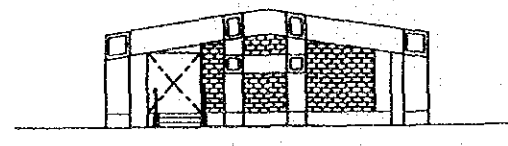
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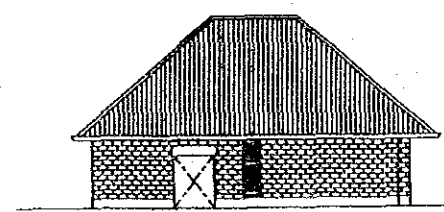
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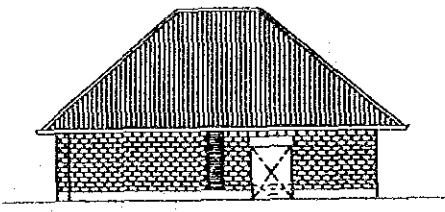
EAST ELEVATION



WEST ELEVATION

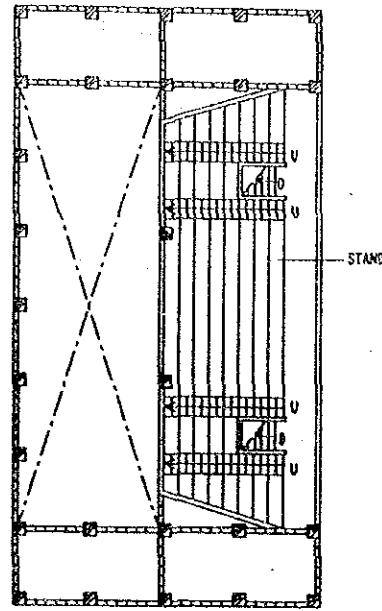


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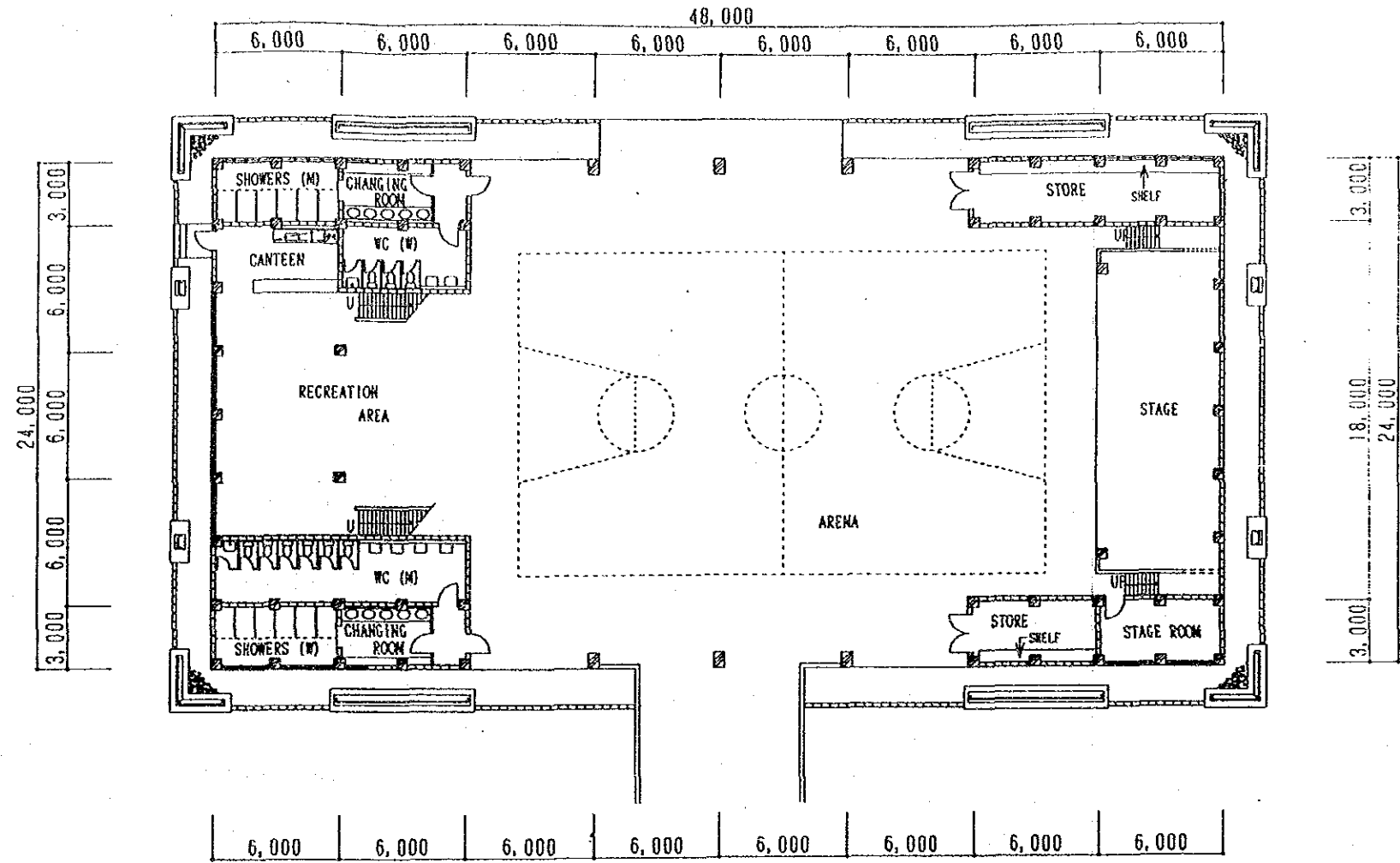


EAST ELEVATION

創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS ARCHITECTS & ENGINEERS 1000 東京 丸の内 丸の内 丸の内	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
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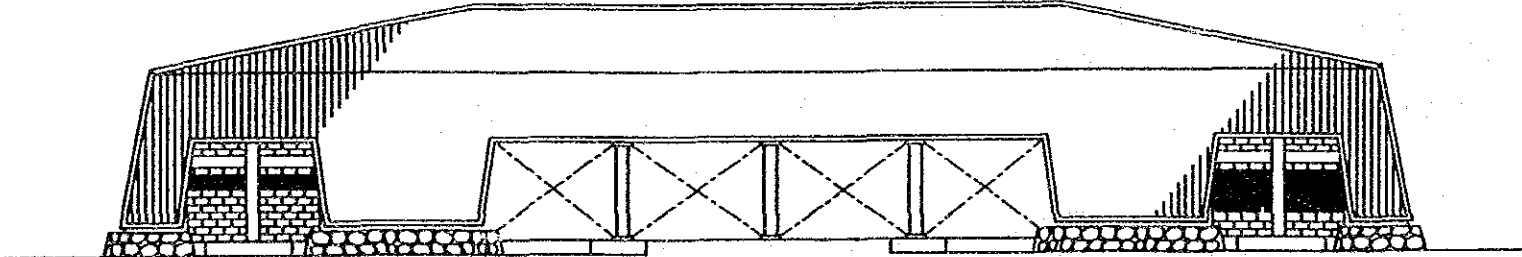


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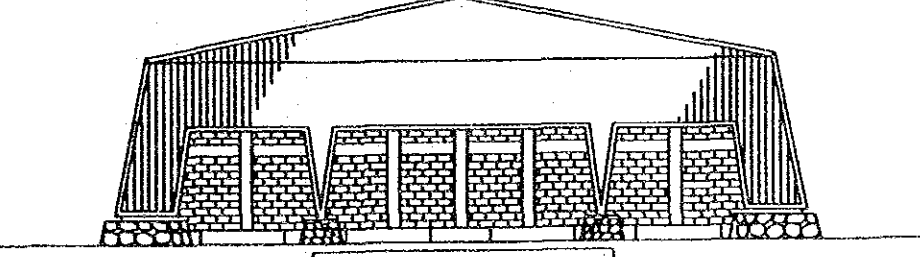


GROUND FLOOR

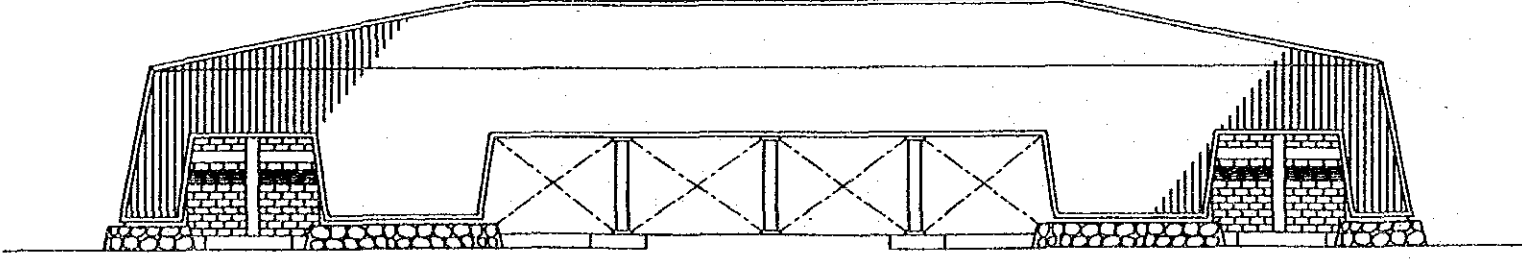
ASSEMBLY HALL S=1:300



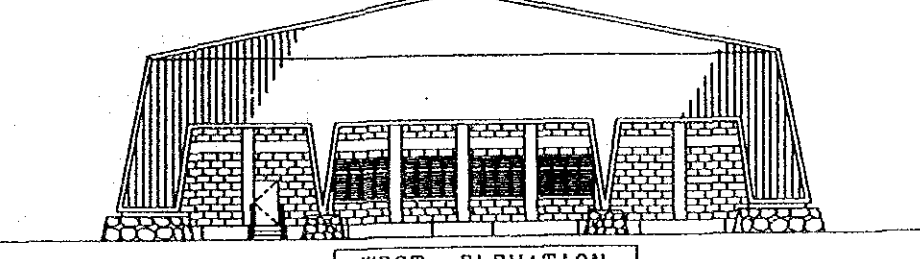
SOUTH ELEVATION



EAST ELEVATION

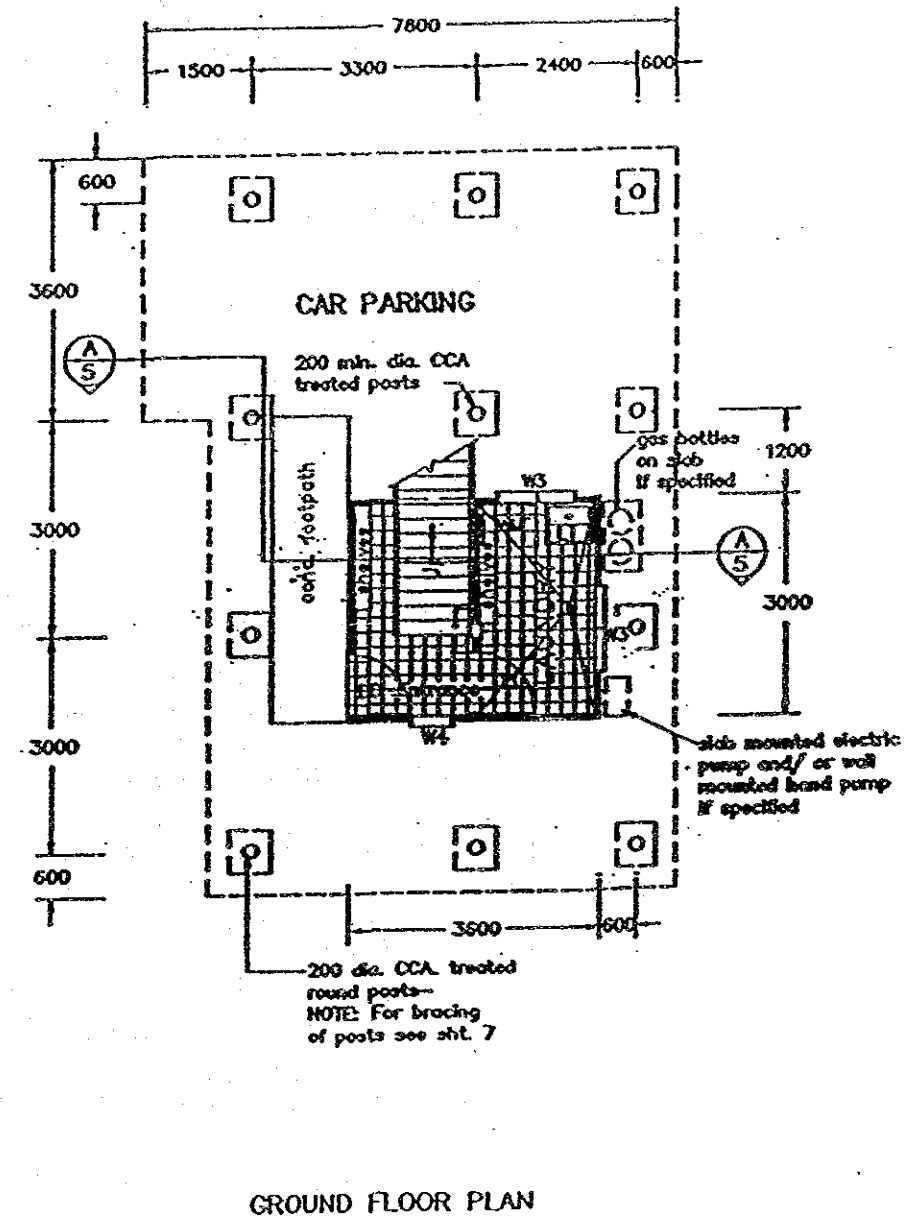
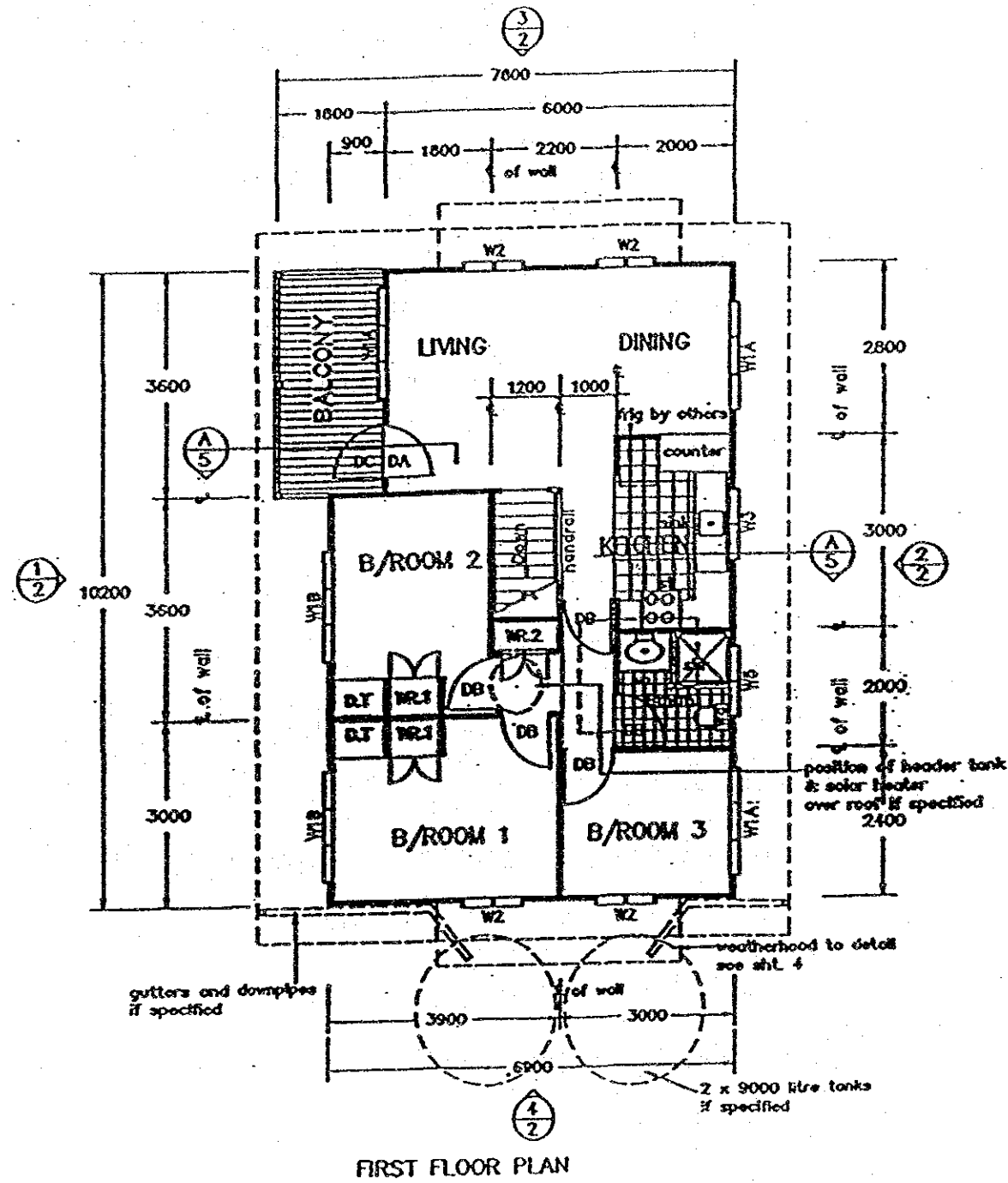


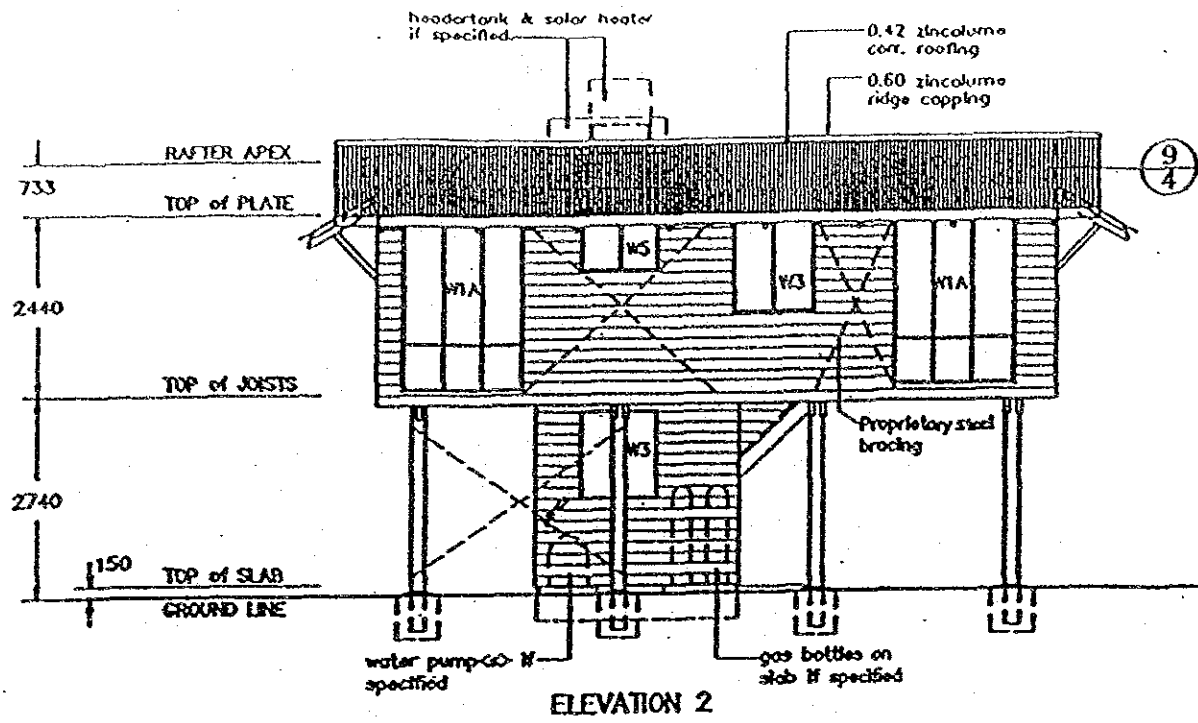
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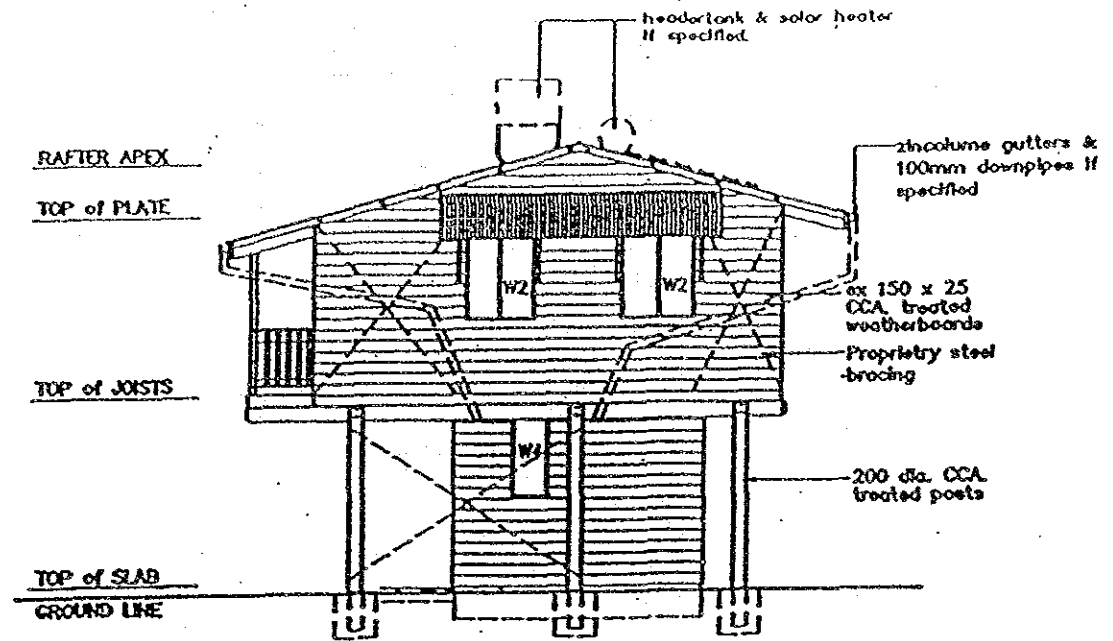
WEST ELEVATION

創造社 SOZOSHA CO. LTD. TOKYO CONSULTANTS ARCHITECTS & ENGINEERS 建築士事務所 創社 丸之内 丸の内 丸の内	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
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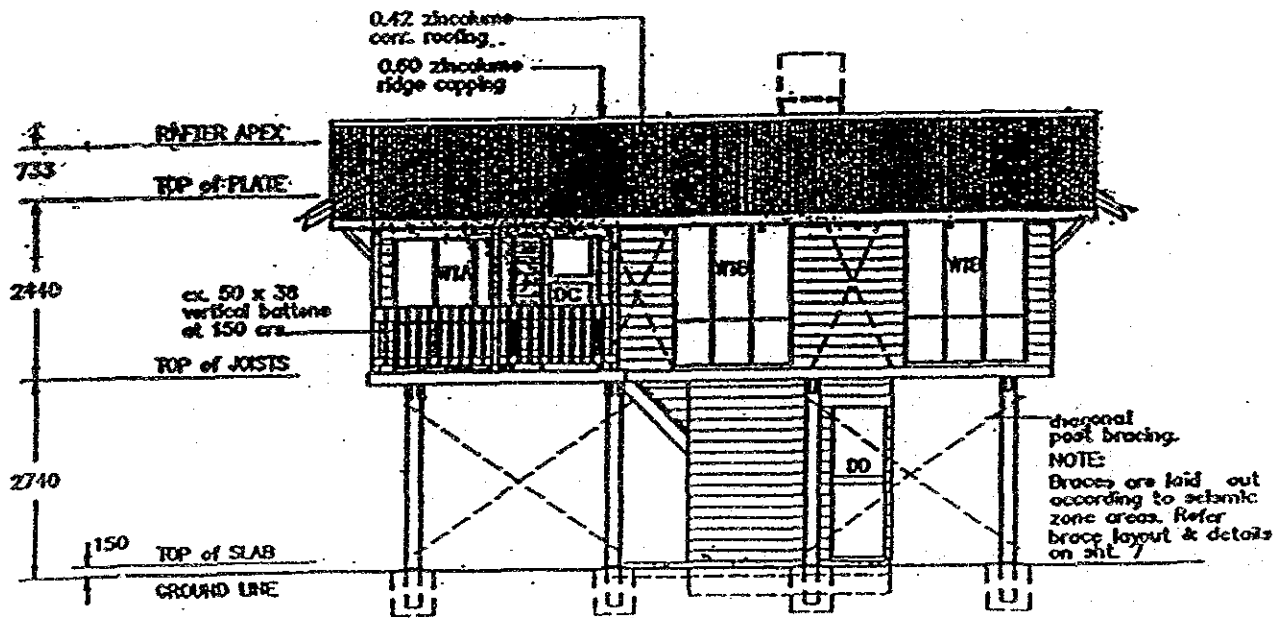




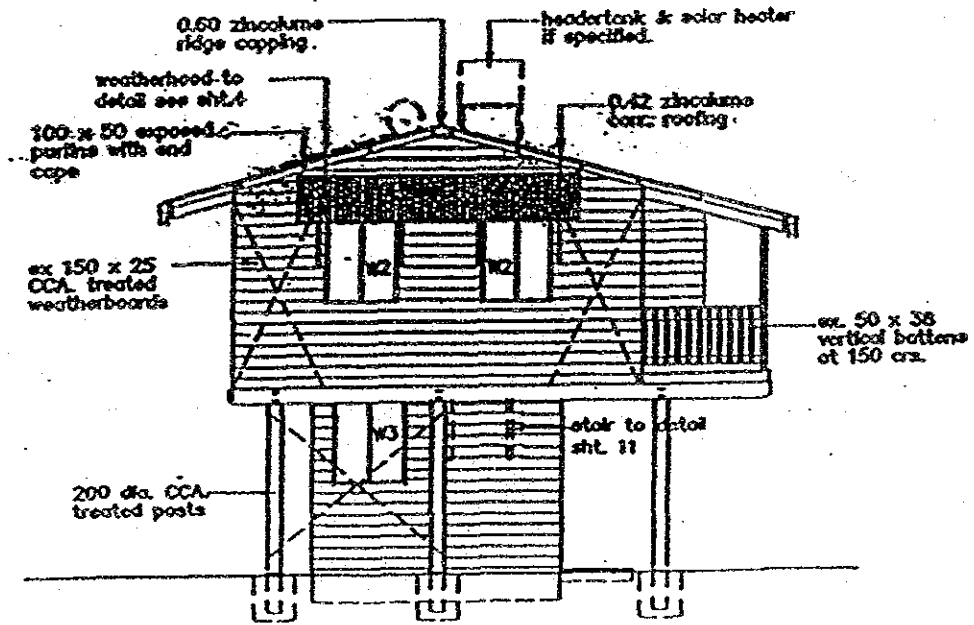
ELEVATION 2



ELEVATION 4

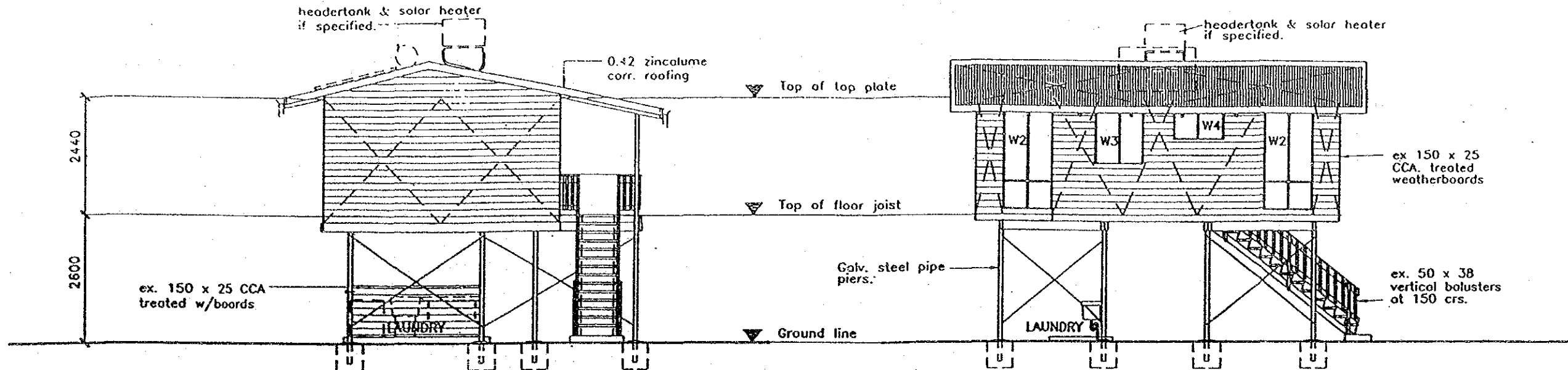


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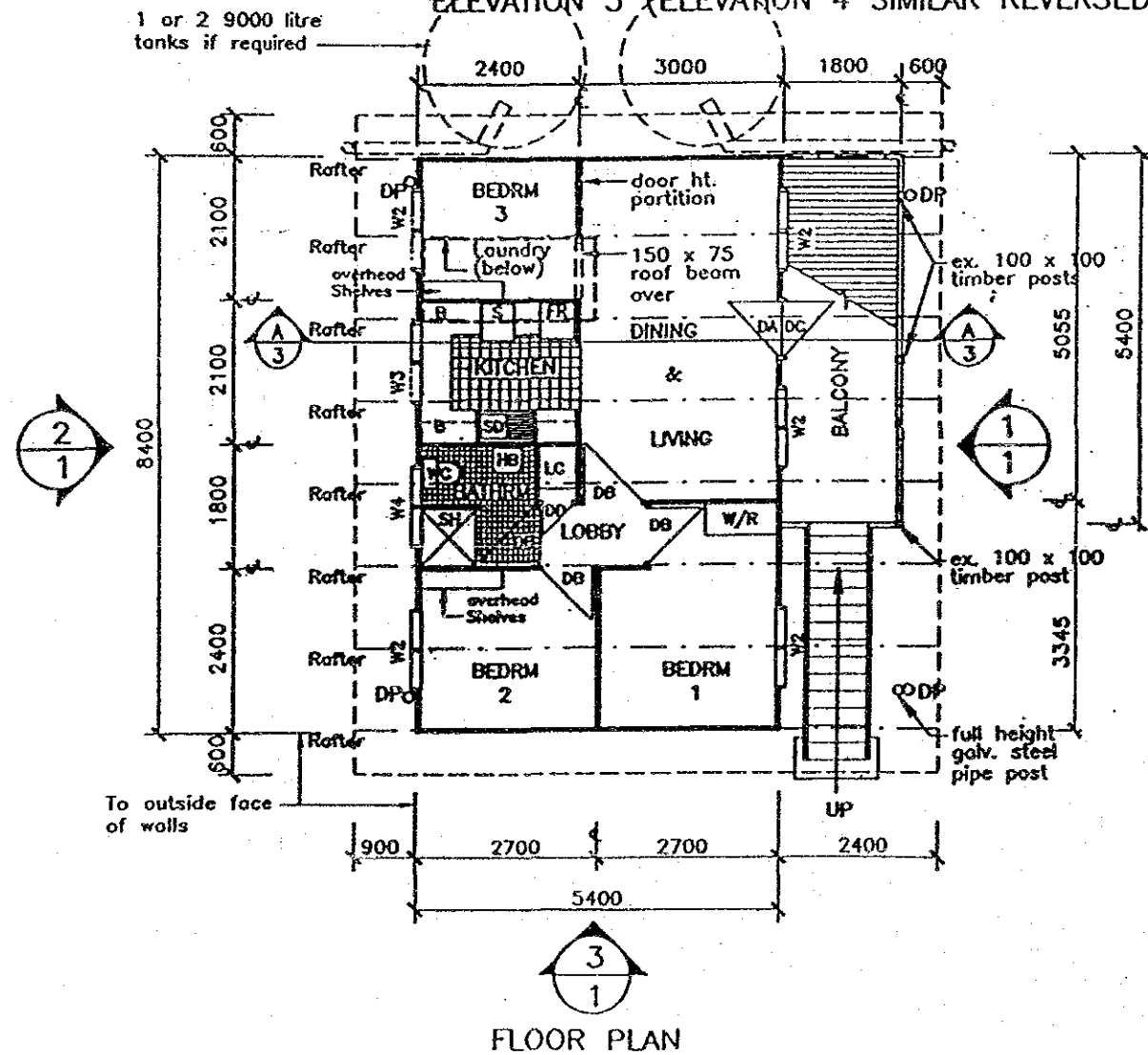
ELEVATION 3

創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS ARCHITECTS & ENGINEERS (東京都千代田区千代田 1-1-1 千代田ビル)	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
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				GEREHU HIGH SCHOOL	
				H65/89 RESIDENCE I	

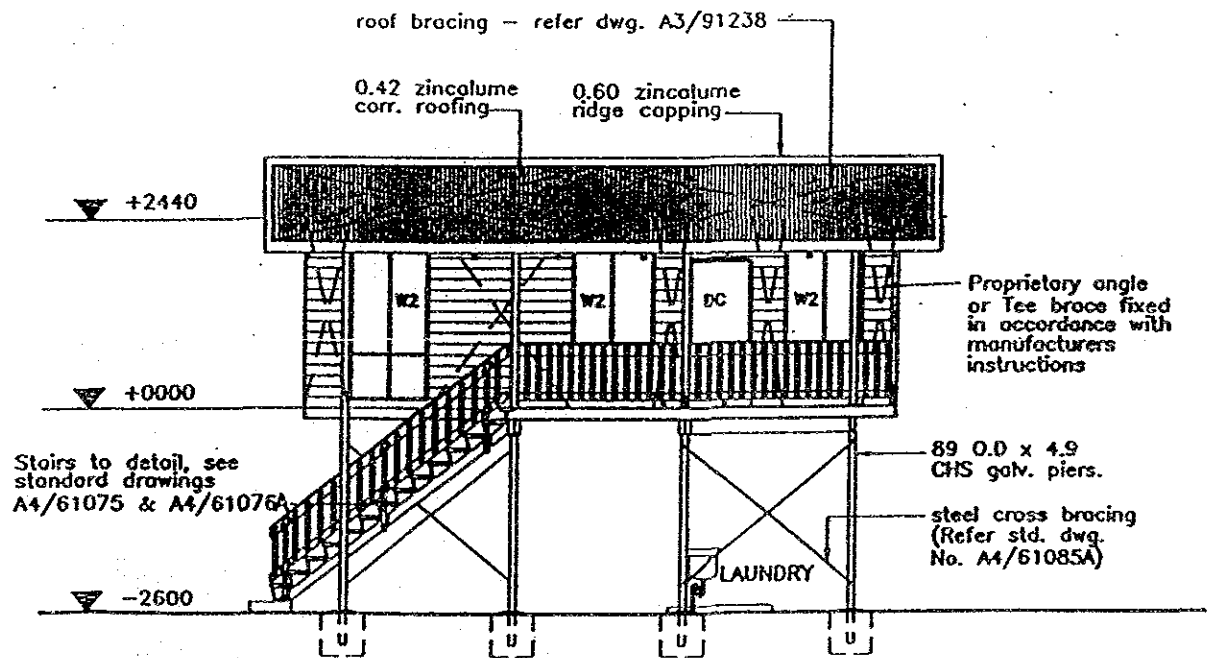


ELEVATION 3 (ELEVATION 4 SIMILAR REVERSED)

ELEVATION 2



FLOOR PLAN



ELEVATION 1

創造社 SOZOSHA CO., LTD. TOKYO CONSULTANTS, ARCHITECTS & ENGINEERS 東京都港区新橋三丁目1番1号 八木屋 興業株式会社	NOTE	WORK NO.	DATE	TITLE	DRAWN NO.
		APPROVAL	DRAWN	SCALE	12
				GEREHU HIGH SCHOOL	
				L 40/91 RESIDENCE!	

4-4 Implementation Plan

4-4-1 Project Implementation Procedure

[1] Basic Items

- ① Prior to proceeding with the project, the Exchange of Notes (E/N) shall be concluded between the Japanese Government and The Government of Papua New Guinea. With the E/N, Japan shall commit itself officially to assist and initiate specific action.
- ② After the above-mentioned conclusion, a consultant contract shall be concluded between a consultant of Japanese nationality and the Government of Papua New Guinea and detailed design work shall be started immediately.
- ③ After the detailed design drawings necessary for construction are completed, approval shall be obtained regarding the design contents from The Government of Papua New Guinea.
- ④ The contractors shall be selected by prequalification examination and tender.
- ⑤ The successful tenderer shall be examined on the contents of the contract price, and after its appropriateness is confirmed, the successful bidder shall conclude a construction contract with The Government of Papua New Guinea. The construction work shall be started after the Japanese Government verifies the construction contract.
- ⑥ The Government of Papua New Guinea shall complete the preliminary work such as necessary preparations, leveling of ground and lead-in of electricity, and telephone lines, acquisition of permission for starting construction so as not to hinder the start of construction.

[2] Positioning and Their Scope of Work on Consultant and Contractor

① Consultant

After receiving the commission from the Department of Education in Papua New Guinea, the consultant shall perform following works.

[Scope of Work]

① Design Stage

The consultant shall provide the necessary tender documents based on the Basic Design. The tender documents shall consist of detailed drawings, specification, calculation and estimation, etc. The consultant shall start tender after receiving of final approval for documents provided through closed meeting with relevant authorities in Papua New Guinea.

⑥ Supervision Stage

The Japanese consultant shall coordinate closely with the Department of Education, Department of Public Works, related agencies, local consultants, and the Japanese contractor.

The consultant shall supervise the confirmation, adjustments and records so that work progresses within the construction period in accordance with the construction work, plans and specifications. The consultant shall report regularly to The Government of Papua New Guinea and the Japanese side.

Completion certificates shall be issued for each stage of construction and these shall be acknowledged by The Government of Papua New Guinea.

The consultant shall dispatch the site resident staff and technicians related to the educational equipment to Papua New Guinea when the equipment is imported.

When the equipment is delivered to Papua New Guinea, the equipment shall be compared in terms of items and numbers with the delivery note in front of the persons-in-charge, a delivery acceptance note shall be issued and an inspection completion note shall be exchanged.

② Contractor

① Contractor for Buildings

In addition to handling the construction work, the Japanese contractor shall liaise closely with related persons so that construction is not delayed and is completed smoothly. The Japanese contractor shall be responsible for managing the work plans, work quality, materials and safety.

② Supplier for Educational Equipment

The Japanese company procures and delivers the equipment meeting the required specifications within the time limits. The operation, adjustment and repair procedures of the equipments to be considered as necessary shall be explained to the owner.

③ Local Consultant and Sub-Contractors

① Local Consultant

In case, Japanese consultant will use local consultant, the local consultant shall conclude a contract with the main consultant and shall check detailed drawings and specifications to meet with various law and regulations in Papua New Guinea. The building permit shall be obtained in responsibilities of Department of Public Works.

② Local Sub-Contractors

In case the Japanese contractor determines to use a local contractor, that contractor should work under the administration of the Japanese contractor as a sub-contractor.

[3] Implementation Organization

The organizations involved in this project are as shown below.

- ① The Department of Finance and Planning of the Government of Papua New Guinea is the decision-making body dealing with the Grant Aid Program.
- ② The Department of the Finance and Planning of the Government of Papua New Guinea is the implementation agency which makes a contract with the Japanese consultant, and Japanese contractor.
- ③ The Department of Public Works of the Government of Papua New Guinea has responsibility for inspecting the technical aspects in this project and applying necessary approval during the construction period. The Department of Education of the Government of Papua New Guinea has responsibility for the equipment.
- ④ The Port Moresby City Building Board has responsibility for handling construction permits and performing each inspection.

The following diagram shows the relationship between the Government of Papua New Guinea, the Japanese consultant, the contractor and the equipment suppliers.

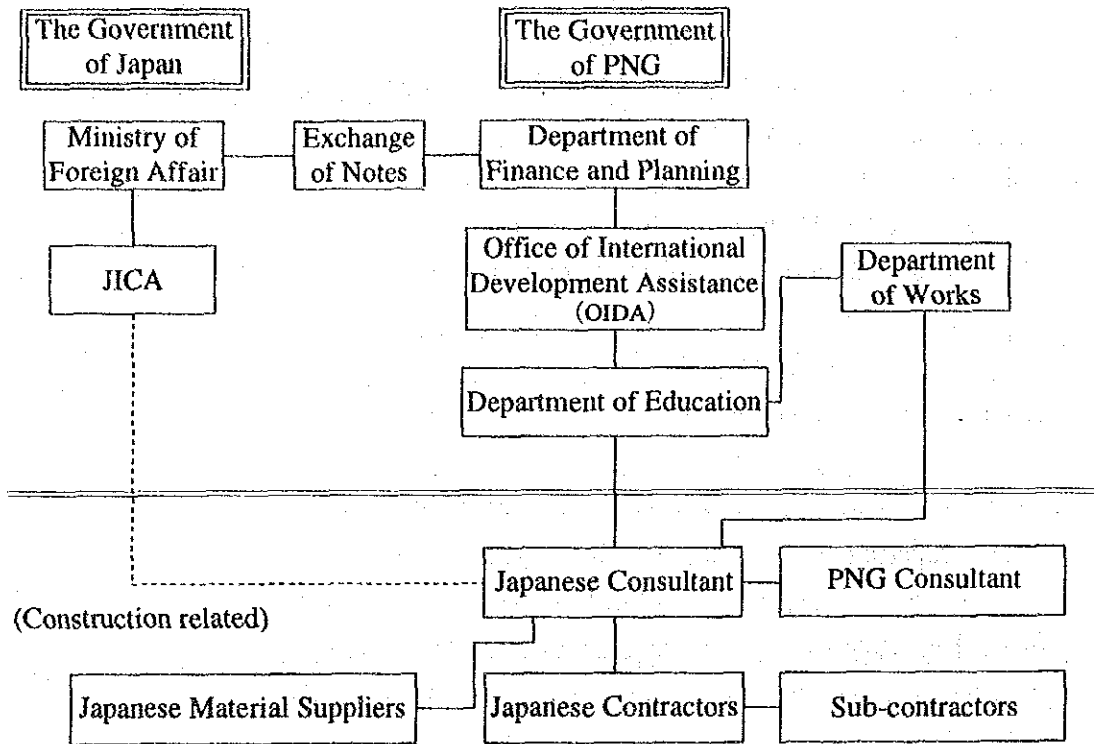


Fig. 4-5 Implementation Organization

4-4-2 Construction Conditions and Points of Attention

The fundamental construction policies for implementing this project under the Grant Aid Program of the Japanese government are as follows:

① Construction period

All procedures will be determined on the assumption that construction along with guidance from Japanese technicians should be done.

② Assuring quality and quantity

The quality and quantity specified in the design documents shall be maintained throughout the entire construction process.

③ Enforcing site safety

Care should be exercised to maintain safety operation. Sufficient attention have to be paid on safety with respect to the temporary works plans.

Based on the above considerations, the following special precautions shall be considered.

- ① Many of the construction items are expected to be contracted to medium and small building contractors due to a shortage of skilled labour. Therefore, sufficient attention must be given to management of manpower resources and process control.
- ② Since the manager and foremen of the various local construction companies are Australians and New Zealanders while the local technicians are Papua New Guineans, communication regarding designing drawings and construction technique should be carefully conducted.
- ③ Since the roof of the Assembly Hall uses steel frames and few local companies have heavy cranes, attention must be paid to securing heavy plant and equipment.
- ④ Since the legal regulations are based on Australian standards, there are specific rules governing building completion inspections, mid-term inspections, etc. Consequently, the various notifications required for approval must be submitted as early as possible.
- ⑤ The production quantity of local made items is small except for concrete and concrete blocks and the sufficient stocks of imported products cannot be expected. Therefore, the availability of materials and the quality, quantity and delivery period must be investigated beforehand.

4-4-3 Construction and Supervisory Plan

This project covers a large building floor area and many buildings, so the construction period has been divided into two phases. Both phase require 12 months each, but the construction work can be overlapped to give a total term of 18 months.

The consultant's concrete responsibilities during the construction term are as follows:

- ① Cooperation related construction contract
Choosing of contractors, determination of work contract method, provision of draft of contract, check work on details of work contents, be a witness for signing contract.

- ② Check and confirm plans
Inspect plans, materials, finish samples and equipment submitted by contractors
- ③ Guide work
Check work plans and work, give guidance to contractors, report work progress to the Ministry of Education, etc.
- ④ Cooperate with payments, bills and receipts
Examination upon completion of construction and check of contents of invoices, etc.
- ⑤ Final inspections
Inspect the value of work in each stage and issue partial completion certificate from start to completion of the project.

The consultant shall confirm that the work has been completed in accordance with the contract conditions, shall witness handover of the contracted materials, shall obtain handover confirmation from the Ministry of Education, etc. and shall complete the work.

In addition, the consultant shall report the progress of construction, the handling of payments, and items related to completion of handover to relevant organizations of the Japanese Government.

4-4-4 Materials Procurement Plan

[1] Construction Work

When procuring the materials in the Project, it is necessary to select those which facilitate easy maintenance and management of facilities and can be quickly repaired from any damage. In the Project, the materials for construction shall use the locally-procured as far as possible. Procurement blocks of the materials used in this building shall be planned as shown in Table 4-5.

Table 4-5 Materials Procurement Plan

Item	Availability		Country of Origin			Remarks
	Good	Not Good	PNG	Japan	Other	
Sand	•		•			Own plant with stable quality
Gravel	•		•			Stable quality and size, etc.
Rock	•		•			
Portland cement	•				•	Imported from New Zealand. Cement plant under construction in Lae.
Ready-mix concrete	•		•			Plants with relatively-good management system in operation
Plywood board	•				•	Imported from New Zealand and Australia
Regular steel rod	•				•	Imported from Australia
Steel bars	•				•	Imported from Australia
Concrete blocks	•		•			100% local production for use in both construction and finishing
Regular brick		•			•	Imported from New Zealand and Australia. Hardly used in PNG.
Steel fixtures	•				•	Imported from New Zealand and Australia.
Timber fixtures	•		•			Processed locally
Galvanized steel sheets	•		•			Imported from Australia and used locally
Glass	•				•	Imported from Australia
Tile	•				•	Imported from Australia
Glazed tile	•				•	Imported from Australia
Ceiling board	•				•	Imported from Australia
Furniture	•		•		•	Australian products common-relatively good quality. Also local production.
Paints	•				•	Imported from Australia
Lighting fixtures	•				•	Imported from Australia
Power distribution board	•				•	Imported from Australia
Electric cable	•				•	Imported from Australia
Electric conduit	•				•	Imported from Australia
Low-voltage equipment	•				•	Imported from Australia
Transformer	•				•	Imported from Australia
PVC pipe	•				•	Imported from Australia
Sanitation fixtures	•				•	Imported from Australia
Pumps	•				•	Imported from Australia
Tanks	•				•	Imported from Australia

[2] Material procurement

In principle, the classroom materials used in the school shall be procured in Japan. The classroom equipments and software must be the same nationwide. Likewise, the copier requires regular service and maintenance, so the computers and copiers procured should be of the same types as used in the country.

The equipment procured from Japan includes precision equipment, so sufficient care must be taken during transport.

In addition, technicians will be required for the local installation work; after installation, local staff must be given explanation and training. The following table (Table 4-6) explains the procurement blocks for the main equipments on the basis of the above criteria.

Table 4-6 Materials Procurement Block

Name of Material	Procurement on Site	Procurement from 3rd Country	Procurement from Japan
1 Educational materials		Personal computers, printers, copiers	Stable power supplies, non-interruptible power supplies, OHP, video set, music keyboards
2 Science educational materials			Vacuum pump, principles of power generation test equipment, microscopes, slide materials, microscope materials, electronic scales, electrically-driven centrifuges
3 Audiovisual equipment			Broadcast equipment, audio equipment for music room, audio equipment for drama room
4 Sports equipment			Table tennis set, soccer set, shot putt set, rugby set
5 Maintenance and management materials			Arc welding equipment, metal band saws, air compressor, electric drills, wood band saws

4-4-5 Implementation Plan

The portion to be dealt by the Japanese side and by the Government of Papua New Guinea in implementation of this Grant Aid Program of the Government of Japan are shown in Table 4-7.

Table 4-7 Materials Procurement Block

Portion Dealt by Japanese Side	Portion Dealt by Papua New Guinea Side
1. Architectural work Building, architectural specifications	1. Ground preparation Dismantling of existing structures and ground preparation
2. Electrical facilities Transformer facilities, power, trunk facilities, lighting, power outlets, telephone lines, broadcast facilities, emergency facilities	2. Surrounding work Gardens, plant and fences
3. Water and Sewers/Air Conditioning and Ventilation Water supply, sewers, sanitary facilities, air conditioning, ventilation, fire alarms and extinguishers, kitchen facilities, incinerator	3. Lead-ins for each infrastructure, power lines, telephone line portable fire extinguishers
4. Outside work Paths, external lights	4. Classroom furniture Desks, chairs, laboratory benches
5. Classroom materials General classroom materials, sports and gymnasium equipment, tools, science class materials, installation work	5. Fixtures Curtains, blinds, general furniture
6. Accommodation Staff housing, teacher housing	6. Others Duty-free import procedures and customs clearance procedures
	7. Necessary expenses for maintenance, management and operation of the facilities

[1] Detail drawing work

The detail drawing will probably require about 4 months after agreement on E/N.

[2] Tender

After provision of detail drawing, construction tenderers will be prequalified in Japan. The implementation agency will call prequalified contractors and conduct tender. The tenderer with the lowest cost shall conclude a contract with the Government of Papua New Guinea. About 2 months will probably be required after prequalification until the contract is concluded.

[3] Contents of scope of work by phase I and phase II

Phase I

<Facilities>

Ward Name	Main Room Name	Total Area
1 Regular classroom ward	8 rooms for G11 and teacher's room.	839.4 m ²
2 Special classroom ward (Science)	Special classrooms for chemistry, biology, and physics. Teachers' room, preparation room, etc. for G11.	557.4 m ²
3 Presentation classroom ward (Expressive arts)	Classrooms for painting, drafting and drawing, textiles, dramatic performances, and music, etc. Teachers' room, etc. for G11.	586.8 m ²
4 Library ward	Reading corner, bookstack corner, office, book lending counter, etc.	571.1 m ²
5 Administrative office ward	Room for principal and assistant principal, office, teachers' room, bulletin corner, etc.	564.0 m ²
6 Residence	15 numbers of residences for teachers (H65 type)	1169.1 m ²
	5 numbers of residences for staff (L-40 type)	226.8 m ²
Total		4514.6 m ²

Phase II

<Facilities>

Ward Name	Main Room Name	Total Area
1 Regular classroom ward	8 rooms each for G12.	839.4 m ²
2 Special classroom ward (Science)	Special classrooms for chemistry, biology, and physics. Teachers' room, preparation room, etc. for G12.	557.4 m ²
3 Assembly hall and Gymnasium ward	Arena for school events and sports, stage, booth, etc.	1260.0 m ²
4 Residence	12 numbers of residences for teachers (H65 type)	935.28 m ²
5 Relative facilities	Electrical compartment, lavatories, storage, workshop, etc.	98.0 m ²
Total		3690.8 m ²
Grand Total (Phase I and II)		8204.68 m ²

Phase II

<Equipments>

Classification	Principal Equipment Name
1 Equipment for education	Computers, projectors, video sets, etc.
2 Equipment for science education	Testers, experimental devices, microscopes, balances, barometers, centrifuges, etc.
3 Audiovisual equipment	Broadcasting equipment, acoustic equipment for music room, acoustic equipment for dramatic performances, etc.
4 Sports equipment for physical training	Table tennis, volleyball, soccer, basketball, etc.
5 Equipment for maintenance and management	Tools for wood working and metal working
Total	

[4] Work schedule

Table 4-8 on next page shows the work schedule.

		1	2	3	4	5	6	7	8	9	10	11	12	
Phase I	Planning	Local Work	Domestic Work	Local Checking	Bidding Evaluation									Total 6.5 months
	Work	Preparation	Temporary construction, digging, foundation	Construction	Facilities	Manufacturing and procurement	Transport	Install and adjust						Total 12 months
	Procure													
Phase II	Planning	Local Work	Domestic Work	Local Checking	Bidding Evaluation									Total 6.5 months
	Work	Preparation	Temporary construction, digging, foundation	Construction	Facilities	Manufacturing and procurement	Transport	Install and adjust						Total 12 months
	Procure													

CHAPTER 5 PROJECT EVALUATION AND CONCLUSION

5-1 Project Effectiveness

5-2 Conclusion

SECTION 5 PROJECT EVALUATION AND CONCLUSION

5-1 Project Effectiveness

The objective of this project is to secure a well-educated workforce, which will be the key to the nation's economic development, by providing education at the national high school level.

Currently, Papua New Guinea has four national high schools for which the rated capacity is 2000 students per school. The number of facilities is completely inadequate at present. Execution of this project will have a very beneficial effect. The current situation of Papua New Guinea and the improvements generated by this project are listed below.

Current Condition and Problem	Project Solution	Plan Effect and Improvement
Only 9.9% of G10 graduates from provincial high schools go on to national high school. When G10 graduates from other educational facilities are added to this, only 4.9% in total go on to national high schools. This is due to a shortage of facilities.	This school provides an extra 250 places per grade for students in each of G11 and G12.	The number of students going on to G11 and G12 from provincial high schools increases to 12.3% and 6.2% if those from other educational facilities are included.
The four existing national high schools are not in the capital Port Moresby nor in the second city of Lae but in remote areas. This provincial distribution requires boarding school type operation. It also increases the government's school education budget.	This national high school will be built in Port Moresby.	Port Moresby in Central Province has the largest number of provincial high schools out of the nation's total of 122 such schools. The number of students going on to G11 and G12 is high and this new high school will solve the inconvenience of sending students far away to Sogeri High School.
Computer education, which is essential in order to increase the man power required by both the government and private sector, has only been introduced in Sogeri High School. This makes it difficult to promote a qualitative improvement of man power.	This project shall provide classrooms and equipment for computer curriculum.	Introduction of this computer curriculum will increase the number of students studying computers and will contribute to training of the man power that PNG wants.
Teachers employed recently at the existing four national high schools in the country side were exposed to a shortage of accommodation. This poses a problem in the recruitment of teachers.	Housing is to be provided.	By solving the accommodation shortage, it will be possible to hire good teachers from within and outside PNG. This will contribute considerably effect to improving the quality of education.

5-2 Conclusion

The objectives of this project include a contribution to improvement of the enrollment as well as construction of national high schools in the metropolitan area which utilize a system of computer education. This satisfies one of the reasons for establishing new national high schools in Papua New Guinea, under the motto "Let us train and educate Papua New Guineans so they will be the man power desired both by the private and the governmental sectors."

In conclusion, this project benefits society at large by creating well-educated people. The facility will be maintained and operated by Papua New Guineans themselves. It completely matches the objective of the National Development Plan and Public Investment Plan of Papua New Guinea. From this point of view, it is anticipated that implementation of this project under the Grant Aid of the Government of Japan will have a positive effect.

However, this project can be executed more efficiently and smoothly if the following items are examined more closely.

- ① When recruiting new teachers in the required numbers, it should be borne in mind that the new staff should be dedicated and have special skills.
- ② To maintain, manage and make the best use of the equipment, skilled carpenters and metal workers should be hired.
- ③ Due to security in Papua New Guinea not always being adequate, security guards should be hired and a surveillance system should be established.
- ④ Upon execution of this project, the Papua New Guinea side should apply the necessary budget for their work portion as soon as possible.
- ⑤ To improve the teachers' skills and local integration, the teacher training plan should be improved.

Appendixes

Appendix-1

Appendix-2

Appendix-3

Appendix-4

Appendix-5

Appendix-6

Appendix-7

Appendix-1

MEMBER LIST OF SURVEY TEAM FOR BASIC DESIGN STUDY

Name	Work Responsibility	Organization
Mr. Seiji Utsumi	Leader	JICA Specialist
Mr. Satoshi Sasaki	Project Coordinator	JICA Junior Specialist
Mr. Eiji Kakizawa	Project Manager	Sozosha Co., Ltd.
Mr. Yasunari Baba	Facilities Planner (1)	Sozosha Co., Ltd.
Mr. Hajime Fukuhara	Facilities Planner (2)	Sozosha Co., Ltd.

MEMBER LIST OF SURVEY TEAM FOR DRAFT MISSION

Name	Work Responsibility	Organization
Mr. Seiji Utsumi	Leader	JICA Specialist
Mr. Eiji Kakizawa	Project Manager	Sozosha Co., Ltd.
Mr. Yasunari Baba	Facilities Planner (1)	Sozosha Co., Ltd.

Appendix-2

ITINERARY FOR BASIC INVESTIGATION
(ITINERARY FOR EACH MEMBER OF TEAM)

PAPUA NEW GUINEA GEREHU HIGH SCHOOL CONSTRUCTION PLAN

Member Codes: A: Team Leader; Seiji Usami; B: JICA Saroshi Sasaki; C: Work Leader Eiji Kakizawa; D: Facility Planner (1); E: Facility Planner (2) Hajime Fukuoka

INVESTIGATION PERIOD: 10 July 1993 to 8 August 1993

	Travel	Stay at Japanese Embassy in PNG	Visit JICA in PNG	Courtesy visit to Ministry of Finance	Courtesy visit to Ministry of Educ.	Conference with school admin.	Gerehu planning survey	PNG Univ. visit	Sogeri High School visit	Visit to aid agencies		Minute-related work	Visit con/plan agents	Complan survey	Qty. survey	Envir. survey
										EC	AIDAB					
7/10	Sat	A, B, C, D, E														
11	Sun	A, B, C, D, E														
12	Mon	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E											
13	Tue					A, B, C, D, E	A, B, C, D, E	A, B, C, D, E								
14	Wed								A, B, C				D, E	D, E		D, E
15	Thu					A, B, C			A, B, C				D, E	D, E		D, E
16	Fri					A, B, C							D, E	D, E		D, E
17	Sat															
18	Sun										A, B, C, D, E					
19	Mon										A, B, C, D, E					
20	Tue	A to Sydney	B, C								A, B, C		D, E			D, E
21	Wed	B Tokyo					C, D, E				A, B, C		D, E			
22	Thu														C, D, E	C, D, E
23	Fri						E					C, D				E
24	Sat													C, D, E		
25	Sun													C, D, E		
26	Mon						C, D, E							C, D, E		
27	Tue						C, D, E							C, D, E		
28	Wed												C, D, E			
29	Thu															
30	Fri														C, D, E	
31	Sat						C, D, E									
8/1	Sun						C, D, E									
2	Mon															
3	Tue						C, D, E									
4	Wed						C, D, E									
5	Thu						C, D, E									
6	Fri						C, D, E									
7	Sat	C, D, E														
8	Sun	C, D, E Tokyo														

1 (in group) 2 (request quote) 3 (receive quote)

Appendix-3

ITINERARY FOR ANNOUNCEMENT OF REPT ON BASIC DESIGN AND INVESTIGATION

PAPUA NEW GUINEA GEREHU HIGH SCHOOL CONSTRUCTION PLAN

Member Codes: A: Team Leader Seiji Utsumi; B: Work Leader Eiji Kakizawa; C: Facility Planner (I) Tatsuya Baba

ANNOUNCEMENT PERIOD: 1 November 1993 to 12 November 1993

11/	Travel	Stay at Japanese Embassy in PNG	Visit JICA in PNG	Courtesy visit to Ministry of		Conference with school admin.	Cerehu planning survey	PNG Univ. visit	Sogeri High School visit	Visit to aid agencies		Minute-related work	Visit com/plan agents	Com/plan survey	Qry. survey	Envir. survey
				Finance	Educa.					EC	AIDAB					
1	Mon	A, B, C														
2	Tue	A, B, C	A, B, C													
3	Wed			A, B, C	A, B, C	A, B, C										
4	Thu				A, B, C	A, B, C										
5	Fri					A, B.										C
6	Sat						A, B, C									
7	Sun											A, B, C ¹				
8	Mon											A, B, C ¹				
9	Tue					A, B.								B, C	B, C	
10	Wed	A return														
11	Thu	B, C											B, C.	B, C		
12	Fri	B, C Tokyo														

1 (in group)

2 (reciprocal quote)

Appendix-4

MEMBER LIST OF PERSONS CONNECTED TO THIS PROJECT IN THE RECIPIENT COUNTRY

BASIC DESIGN STUDY/DRAFT REPORT EXPLANATION

PNG Side

Name	Office	Responsibility
Mr. Pepson	OIDA	OIDA Chief
Mrs. Dorothy Luana	OIDA	International Liaison Division Head
Mr. Igitava Yoviga	OIDA	Officer-in-Charge Japan Liaison
Mr. Nobuhisa Takeda	OIDA	Officer-in-Charge JICS Adviser
Mr. Mathias Lasia	MOFP	Officer-in-Charge Social Planning
Mr. Joseph Lelang	MOFP	Officer-in-Charge Social Planning
Mr. Jerry Tetaga	MOE	Vice-Minister
Mr. William Penias	MOE	Sub-Vice Minister
Mr. John T. Poha	MOE	Planning and Finance Director
Mr. Luke K. Taita	MOE	Special Education Director
Mr. Time Poesi	MOE	General Education Section Head
Mr. Wesley Tauwaoll	MOE	Education Regulation Section Head
Mr. Roy Frost	MOE	Project Manager
Mr. Benadict Kipta	MOE	Assistant Project Manager
Mr. Oliver Tapua	MOE	Overseas Aid Regulation Staff
Mr. Gabe Kowio	DOW	Architect Section Head
Mr. Anthony Peck	DOW	Planning Division Head
Mr. David Jackson	DOW	Head Architect
Mr. Moothy Karuna	DOW	Head Quantity Surveyor

Japanese Side

Name	Office	Responsibility
Mr. Tadashi Masui	Japanese Embassy	Ambassador
Mr. Shin Wakasugi	Japanese Embassy	Minister
Mr. Yoshinobu Ikura	Japanese Embassy	Second Secretary
Mr. Sumihiko Ebina	JICA	JICA Director in PNG
Mr. Kyoji Mizutani	JICA	JICA Assistance Officer in PNG
Mr. James Koyanibus	JICA	JICA Staff

Appendix-5

MINUTES OF DISCUSSION (AT BASIC DESIGN STUDY)

MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF THE GEREHU NATIONAL HIGH SCHOOL THE INDEPENDENT STATE OF PAPUA NEW GUINEA

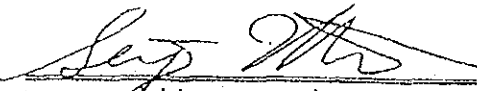
In response to a request from the Government of the Independent State of Papua New Guinea (hereinafter referred to as "the Government of Papua New Guinea"), the Government of Japan decided to conduct a Basic Design Study on the Project for Construction of the Gerehu National High School (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

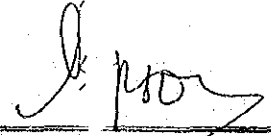
JICA sent to Papua New Guinea a study team headed by Mr. Seiji Utsumi, Development Specialist (Educational Technology), JICA, from July 11 to August 7, 1993.

The team held discussions with the officials concerned of the Government of Papua New Guinea and conducted a field survey at the study area.

In the course of discussions and the field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

Port Moresby, July 20, 1993


Mr. Seiji Utsumi
Leader
Basic Design Study Team
JICA


Mr. Gabriel Pepson
Director
Office of International
Development Assistance

ATTACHMENT

1. Objective

The objective of the Project is to develop Upper Secondary Education in Papua New Guinea by building the Gerehu National High School.

2. Project Site

The Project Site is shown in Annex-I. (Enclosed area with thick line)

3. Executing Agency

Department of Education of the Government of Papua New Guinea is responsible for administration and execution of the Project.

4. Items requested by the Government of Papua New Guinea

After discussions with the Basic Design Study Team, the items listed in the ANNEX-II are finally requested by the Government of Papua New Guinea. However, the final components of the Project will be decided after further studies in Japan.

5. Japan's Grant Aid System

- (1) The Government of Papua New Guinea has understood the system of Japan's Grant Aid explained by the team.
- (2) The Government of Papua New Guinea will take necessary measures, described in ANNEX-III for smooth implementation of the Project, on the condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. Other Relevant Issues

The Government of Papua New Guinea confirms the following matters for smooth implementation of the Project.

- (1) The Government of Papua New Guinea will allocate the necessary budget to meet the cost of agreed works and services listed in ANNEX-III.
- (2) The Government of Papua New Guinea will allocate the

necessary budget for the operation and maintenance of the facilities and equipment provided under the Project.

7. Request for Staff Housings

Under the Japan's Grant Aid System, it is difficult to include Staff Housings as part of the Project. The Government of Papua New Guinea has understood the limitations in this respect. However, scarcity of Staff Housing availability would be a major constraint in attaining the objective of the Project. The Basic Design Study Team will convey the strong desire of the Government of Papua New Guinea for Staff Housings to the Government of Japan.

8. Equipment

The equipment necessary for the Gerehu National High School will be provided by the Government of Papua New Guinea to a certain extent. Some of the equipment, such as computers, are requested by the government of Papua New Guinea to be provided by the Grant Aid, because of its financial difficulties. The Basic Design Study Team agreed to convey this request to the Government of Japan. The items requested are listed in the letter compiled by the Department of Education (Annex-IV).

9. Technical Cooperation

The Government of Papua New Guinea expressed the possibility of further cooperation in terms of technical assistance in connection with the Project. The Team explained the Japanese technical cooperation system and pointed out that a new proposal of the Government of Papua New Guinea, apart from the Project, would be necessary, when such cooperation is needed.

10. Schedule of the Study

- (1) The consultants will proceed to further studies in Papua New Guinea until August 7, 1993.
- (2) JICA will prepare a draft final report of the study and dispatch a mission in order to explain its contents in

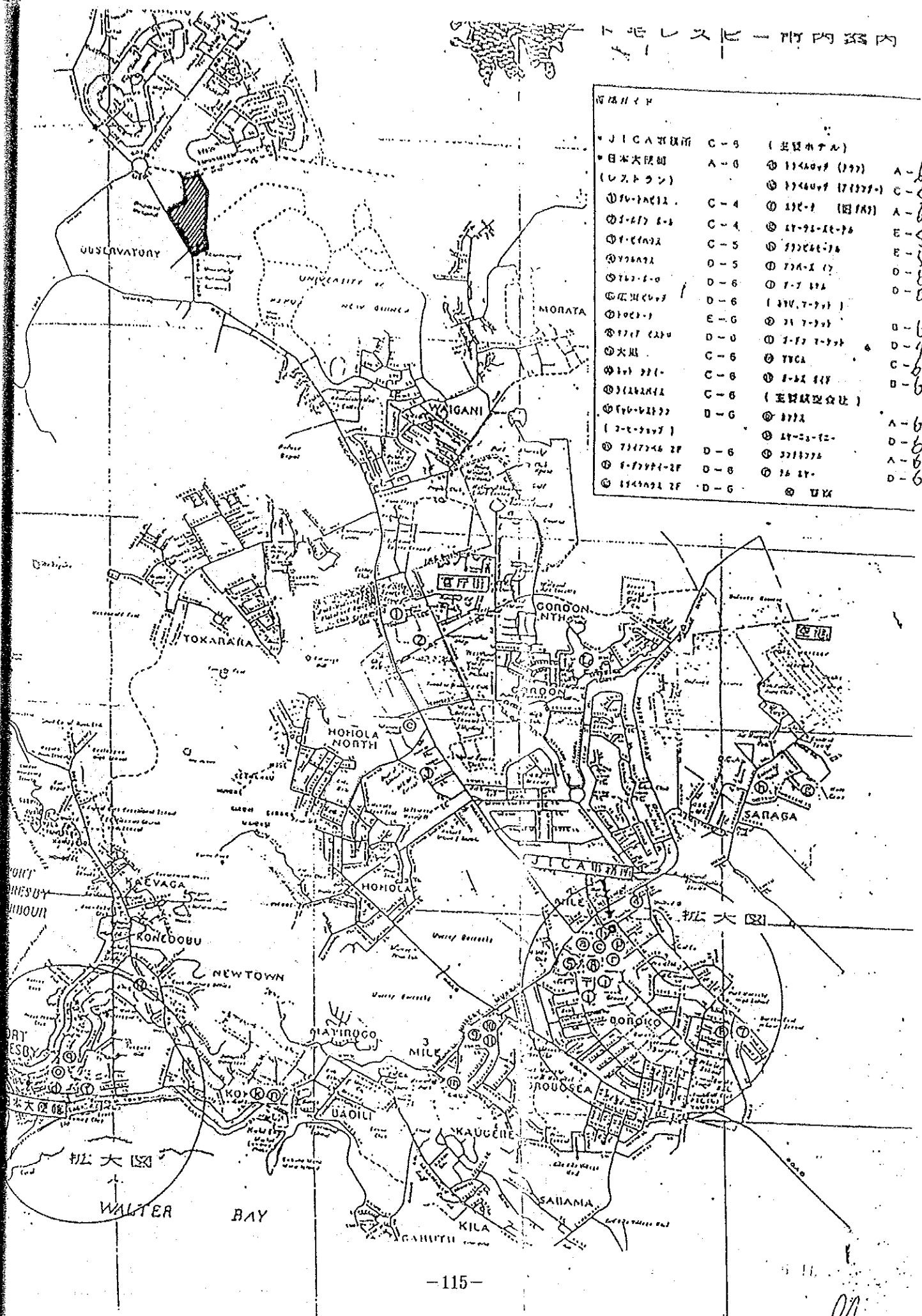
November, 1993.

- (3) In the event that the contents of the report are accepted in principle by the Government of Papua New Guinea, JICA will complete the final report and send it to the Government of Papua New Guinea by January, 1994.

ANNEX-I LOCATION OF THE PROJECT SITE

電話ノヤ

● JICA 事務所	C-8	(主務ビル)	
● 日本大使館	A-0	① 114607 (177)	A-b
(レストラン)		② 114607 (17777-1)	C-b
① 114611	C-4	③ 114611 (17777)	A-b
① 114612	C-4	④ 114612 (17777)	E-b
① 114613	C-5	⑤ 114613 (17777)	E-b
① 114614	D-5	⑥ 114614 (17777)	D-b
① 114615	D-6	⑦ 114615 (17777)	D-b
① 114616	D-6	(114616)	D-b
① 114617	E-6	⑧ 114617 (17777)	D-b
① 114618	D-0	⑨ 114618 (17777)	D-b
● 大馬	C-6	⑩ JICA	C-b
① 114619	C-6	⑪ 114619 (17777)	D-b
① 114620	C-6	(主務ビル)	
① 114621	D-6	⑫ 114621 (17777)	A-b
(114621)		⑬ 114621 (17777)	D-b
① 114622	D-6	⑭ 114622 (17777)	A-b
① 114623	D-6	⑮ 114623 (17777)	D-b
① 114624	D-6	⑯ 114624 (17777)	D-b
① 114625	D-6	⑰ 114625 (17777)	D-b
① 114626	D-6	⑱ 114626 (17777)	D-b
① 114627	D-6	⑲ 114627 (17777)	D-b
① 114628	D-6	⑳ 114628 (17777)	D-b
① 114629	D-6	㉑ 114629 (17777)	D-b
		● UK	



ANNEX-II : ITEMS REQUESTED BY THE GOVERNMENT OF PAPUA NEW GUINEA

1. General Classrooms
2. General Science Classrooms
3. Library
4. Expressive Arts Classrooms
5. Assembly Building
6. Administration Building
7. Stores
8. Maintenance Workshop

ANNEX-III NECESSARY MEASURES TAKEN BY THE GOVERNMENT OF PAPUA NEW GUINIA

1. To secure the site for the Project.
2. To clear, level and reclaim the site prior to commencement of the construction.
3. To undertake incidental external works such as gardening, fencing, gates and exterior lighting around the sites.
4. To construct the access road to the site prior to commencement of the construction.
5. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site.
6. To meet commission charges of the Japanese Foreign Exchange Bank for the banking services based on the Banking Arrangement.
7. To ensure prompt unloading and customs clearance at the port of disembarkation in Papua New Guinea and internal transportation therein of the products provided under the Grant Aid.
8. To exempt Japanese Nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Papua New Guinea with respect to the supply of the products and services under the verified contracts.
9. To accord Japanese Nationals whose services may be required in connection with the supply of the products and the services under the verified contracts such facilities as may be necessary for their entry into Papua New Guinea and stay therein for the execution of the Project.
10. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Grant Aid.
11. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment.

ANNEX-IV LIST OF EQUIPMENT REQUESTED BY
THE GOVERNMENT OF PAPUA NEW GUINEA



DEPARTMENT OF EDUCATION

Telephone: 27 2401
Telegrams: EDUCOFF BOROKO
Telex: NE 22193
Fax: 254648

P.S.A. Haus,
Private Mail Bag,
Post Office,
BOROKO
Papua New Guinea.

DATE: 16/07/93
OUR REF: GR3-4-6
ACTION OFFICER:

Dr Seiji Utsumi
Team Leader
Basic Design Study Team
JICA

Dear Sir

RE: EQUIPMENT FOR GEREHU NATIONAL HIGH SCHOOL

I wish to clarify certain items mentioned in our previous letter of 15 July 1993.

A) General Equipment:

- Photocopier - equivalent to NP 3020
- AVR "Automatic Voltage Regulator" - equivalent to Yokoyama "Voltac" AR Series.
- UPS "Uninterrupted Power Supply"
- OHP "Overhead Projector" - equivalent to Elmo HP Models
- Video Set - Equivalent to NV - J700AM VHS VCR
TX-26V2YT TV
- Slide Projector Elmo Carousel Model

B) Sports and Physical Education

- Table Tennis Set - Bats, balls, nets, net clamps, tables with supports
- Volley Ball Set - Ball, nets, canvas trolley for balls
- Soccer set - Balls, pressure gauge, pumps, pump connection, trolley for balls
- Shot Put Set - Shots of Different weight 2.72kg - 7.26kg
- Discus Set - Discuses of different weights 1kg, 1.5kg and 2kg
- Track and Field Set - Tape measures 30m, 50m and 100m, relay batons, line marker, starting pistols, electronic timing watches, hurdles, rakes.
- High Jump Set - Stands, bases and crossbars
- Javelin Set - Javelins of various lengths 360-450cm or or various various weights 400-800g
- Basketball - Balls, Line tape, rings, timer and scoreboard.
- Rugby (Note missed out of original list because of typing error).
 - Balls, headprotectors and kicking mounds.
- Softball - Bats, balls, chest protectors, face masks and gloves.

C) Language Laboratory System

Could be reduced to suit 35 students.

D) Public Address System


Sony type

G) Science Equipment

BIO-46 100 and not 10 monocular microscopes
48 See Attachment for specifications

CH 83 10 of the refrigerators will be used in the science laboratories
The other 10 will be used in the Administration Block, Library,
dispensary and canteen.

Yours faithfully



ROY FROST
Project Manager - GSES
For: Secretary for Education

Appendix-6

MINUTES OF DISCUSSION (AT DRAFT REPORT EXPLANATION)

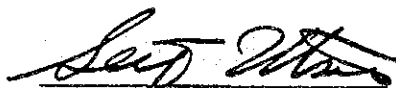
MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT FOR
CONSTRUCTION OF THE GEREHU NATIONAL HIGH SCHOOL
THE INDEPENDENT STATE OF PAPUA NEW GUINEA
(CONSULTATION ON DRAFT REPORT)

In July, 1993, Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for Construction of the Gerehu National High School (hereinafter referred to as "the Project") to the Independent State of Papua New Guinea, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft of the study.

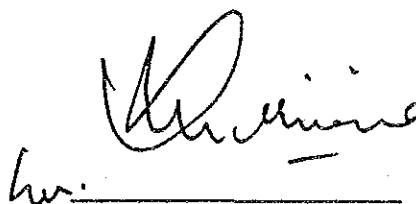
In order to explain and to consult Papua New Guinea on the components of the draft report JICA sent to Papua New Guinea a study team, which is headed by Mr. Seiji Utsumi, Development Specialist, JICA, and is scheduled to stay in the country from November 2 to 11, 1993.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Port Moresby, November, 9, 1993.



Mr. Seiji Utsumi
Leader
Basic Design Study Team,
JICA



Mr. Gabriel Pepson
Director
Office of International
Development Assistance

ATTACHMENT

1. Components of draft report

The Government of Papua New Guinea has agreed and accepted in principle the components of the draft report proposed by the Team.

2. Japan's Grant Aid System

- (1) The Government of Papua New Guinea has understood the system of Japan's Grant Aid explained by the Team.
- (2) The Government of Papua New Guinea will take necessary measures, described in ANNEX for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

3. Further Schedule

The Team will make the final report in accordance with the confirmed items, and send it to the Government of Papua New Guinea by the end of January, 1994.

A N N E X

Necessary measures to be taken by the Government of Papua New Guinea:

1. To secure the site for the Project.
2. To clear, level and reclaim the site prior to commencement of the construction.
3. To undertake incidental external works such as gardening, fencing, gate and exterior lighting around the site.
4. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewerage and other incidental facilities to the project site.
5. To bear commissions to the Japanese foreign exchange bank for the banking services based upon Banking Arrangement (B/A).
6. To ensure prompt unloading and custom clearance at port of disembarkation in Papua New Guinea and internal transportation therein of the products purchased under the Grant.
7. To exempt Japanese nationals from the customs duties, internal taxes and other fiscal levies which may be imposed in Papua New Guinea with respect to the supply of the products and services under the verified contracts.
8. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Papua New Guinea and stay therein for the performance of their work.
9. To guarantee to maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant.
10. To bear all the expenses other than those to be borne by the Grant, necessary for the Project.
11. To coordinate and solve any issues related to the Project which may be raised from third parties and inhabitants in the Project areas during implementation of the Project.

Appendix-7 DATA ON MATERIALS

D. Materials and Strengths

1) Materials

- Concrete
 - Design strength
 - $F_c' = 20 \text{ Mpa}$ (equivalent to JIS-Fc 210 kg/m²)
- Steel bars
 - Grade 410Y (AY1302)---Columns, main beams (equivalent to JIS-SD345)
 - Grade 230Y (AY1302)---Others and thin bars (equivalent to JIS-SD345)
- Steel frames
 - Grade 250Y (AS1204) (equivalent to JIS-SS400)
- Block work
 - Concrete blocks Grade 12 (MPa)
 - Fill concrete $F/C = 15 \text{ Mpa}$ (PNG. S. 1004)
(equivalent to JIS-SS402)

2) Strength

- Concrete (however, 1.33 times following values for short-term loads) (Unit: MPa)

1	2	3	4	5	6	7	8	9
Property	Maximum permissible stresses, MPa							
	For any strength of concrete that is in accordance with Section 4	For values of F_c' , MPa						
		15	20	25	30	40	45	50
Compressive stress F_c in flexure (MPa)	$0.45 F_c'$	6.75	9.00	11.25	13.50	18.00	20.25	22.50
Tension in plain concrete (MPa)	$0.13 \sqrt{F_c'}$	0.50	0.58	0.65	0.71	0.82	0.88	0.92
Bearing, prior to application of the factor given in Clause 9.14 (MPa)	$0.35 F_c'$	5.25	7.00	8.75	10.5	14.0	15.75	17.5
Modular ratio, n		11.0	9.5	8.5	7.5	6.5	6.0	6.0

1	2	3	4
Type and grade of reinforcement		Maximum permissible stresses	
Designation	Specified minimum yield; or 0.2% proof stress, f_{sy} MPa	Tensile reinforcement, F_s MPa	Compressive reinforcement, F_m MPa
(a) (i) Plain bars-Grade 230R-AS 1302	230	140	125
(ii) Deformed bars-Grade 230S-AS 1302	230	140	125
(iii) Deformed bars-Grade 410Y-AS 1302	410	210	170
(b) Cold-worked bars-Grade 410C-AS 1302	410	210	170
(c) (i) Hard-drawn wire-AS 1303	450	230	170
(ii) Welded wire fabric-AS 1304	450	230	170

• **Steel**

• **Steel Frames** **$F_y = 250 \text{ Mpa}$** (*** 1 MPa \approx 10 kg/cm²**)

