

2-3 Basic Design

2-3-1 Design Concept

The following design concepts were formulated for the facility/equipment plans as results of the study on the nature conditions in Uganda, the present state of the project site, the situation of the local construction industry, the objectives of this project and the present situation of the Ugandan implementation organization responsible for the project.

(1) Design Concepts Concerning the Nature Conditions

The project site is located in Kampala which is situated a little to the north of the equator. However, it has a mild climate with the average annual temperature being about 20° because it is an upland approximately 1,300m above sea level. There are two rainy seasons a year in the country, namely, the major rainy season (March to May) and the minor rainy season (September to November). The average annual rainfall is about 1,500mm. Taking into account the above-mentioned nature conditions of the country, following design concepts were worked out.

1. No air conditioning should be considered for room temperature control.
2. Natural ventilation should be fully utilized.
3. A rainwater draining system should be properly secured on the project site.

(2) Design Concepts concerning the Present State of the Project Site

The project site has a maximum difference in elevation of about 15m. Highest point of the site is 10m high from the service road which runs across the site from northwest to southeast. Lowest point is 5.0m low from the service road. The natural environment, including the planting,

of the project site is well conserved. In consideration of such situation of the project site, the following design concepts were formulated.

1. The present natural environment should be conserved as much as possible.
2. Expansion plan should be in accordance with the topographical features of the project site.

(3) Design Concepts concerning the Situation of the Local Construction Industry

Construction activities are vital in and around Kampala. There are a number of high-rise buildings in the centre of the city. However, building materials manufactured in the country are limited to basic items such as cement, tile, brick and concrete block. Though aluminum sash, ceiling materials and other industrialized building materials are imported, it is difficult to procure large quantities of these imported building materials. In consideration of the situation of the local construction industry, the following design concepts were formulated.

1. Maximum use of locally manufactured building materials and local construction method should be thoroughly considered in architectural design.
2. Building materials procurement plan should be in accordance with the situation of the local construction industry such as quality, quantity and cost of materials available locally.
3. Quality, price and stable supply of large quantities should be criteria in case imported foreign products need to be used.

(4) Design Concepts concerning Capabilities of the Executing Agency in terms of Facility/Equipment Maintenance and Management

Reducing annual budgetary appropriations for maintenance such as cleaning, painting and the like are the important issue for the institute. Therefore, following design concepts were formulated for economical maintenance and management of the institute.

1. In selecting building materials, priority should be given to those which are highly durable and not easily stained.
2. In order for easy procurement of consumables as well as materials for use in repair, priority should be given to those procured easily in the country.
3. Utilization of natural ventilation and lighting should be maximized so that utility charge can be minimized.

(5) Design concepts concerning the Range and Grades of the Facilities and Equipment

This project is to be implemented with the aim of supporting the programme to be carried out under the project-type technical cooperation which is scheduled to start in 1997. It is essential, therefore, that the range and grades of the facilities and equipment to be procured under this project should be consistent with the contents of the programme. The following design concepts were worked out taking these factors into consideration.

1. The facility/equipment plans of this project should be consistent with contents of the training programme to be carried out under the project-type technical cooperation.

2. The facility/equipment of this project should be consistent with contents of equipment procured under the project-type technical cooperation.

(6) Design Concepts concerning Project Implementation Period

Though the project includes a number of facilities to be expanded or rehabilitated, each of them is not large scale. Therefore, construction period will depend on the combination of construction work of each facility. The following design concepts were formulated taking this into consideration.

1. Construction implementation plan should be worked out to minimize the period while training courses are interrupted.
2. The maximum number of stories of the facilities of this project should be two so that the construction period of each facility will not take long.

2-3-2 Basic Design

(1) Site Plan

In the premises of Nakawa Vocational Training Institute, which is the project site of this project, existing facilities such as the administration building, workshops, the mess hall and the dormitories are scattered about. These facilities will be improved by means of expansion and rehabilitation in this project to cope with the expansion of the scope of the training. After completion of the new facilities as well as rehabilitation of the existing buildings, all the facilities shall function in unison with one another. Therefore, basic design includes review of the existing buildings in addition to planning new facilities to

make the entire facility function as unified institute.

The shape of the premises is like a trapezium extending in the direction of northwest. There is a main service road running in the direction of northwest in the center of the premises. Existing facilities such as the administration building, the mess hall and the dormitories are located on the southwestern side of the service road, which area is of higher elevation, and the workshops are located on the northeastern side, which area is of lower elevation. Since workshops are the main source of noises, the premises is separated into quiet zone and noisy zone by the service road. This zoning plan which was developed at the time of the founding of Nakawa VTI is still functioning satisfactorily, and there will be no need to change the zoning system under this project. For this reason, the new workshop building should be located on the northeastern side of the service road, and the new dormitories on the southeastern side.

It will not be necessary to improve the infrastructure outside the premises of the institute particularly for implementing this project. However, main utility supplies such as power intake line need to be improved to cope with increase of utility demand of the institute after completion of the project.

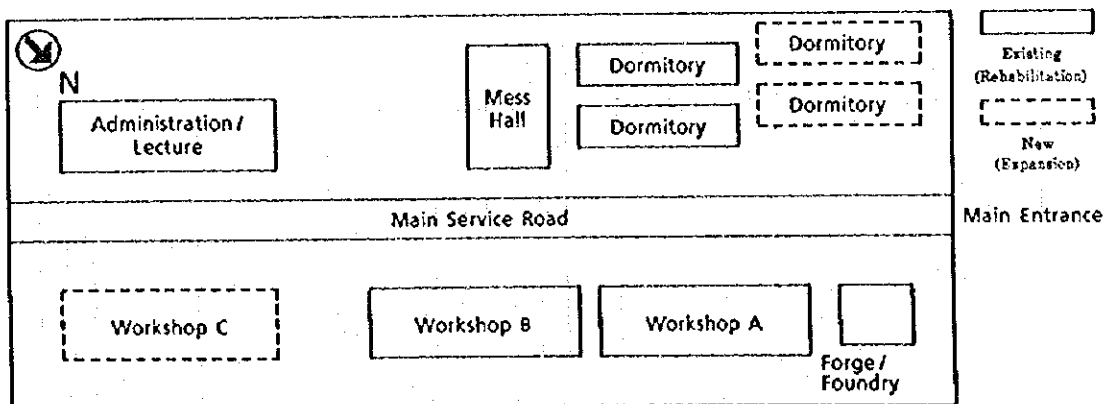


Fig. 2-2 Zoning of the site

(2) Facility Plans

1) Floor Plan

Shown in the table 2-5 are the rooms to be provided under this project. Their functions, their floor spaces and the rationale for determining floor area are described.

Table 2 - 4 Floor Area of Respective Building

Building	Expansion (m ²)	Rehabilitation (m ²)	Total (m ²)
Workshop A		927	927
Workshop B		1,461.6	1,461.6
Workshop C	1,915.2		1,915.2
Forge & foundry		140.4	140.4
Administration & Lecture Building		1,136.7	1,136.7
Mess hall		237.8	237.8
Existing lavatory		91.8	91.8
Existing dormitory (2 buildings)		744.3	744.3
New dormitory	402.0		402.0
New lavatory (M)	91.8		91.8
New lavatory (F)	325.2		325.2
Connecting corridor	150.4		150.4
Workshop lavatory	54.0		54.0
Substation	54.0		54.0
Elevated tank	90.3		90.3
Gate house	7.2		7.2
Grand total	3,090.1	4,739.6	7,829.7

Table 2 - 5 Floor Plan

Building	Course	Room name	Floor area (m ²)		Remarks
			Expansion	Rehabilitation	
Workshop (A)	Motor vehicle	Compressor room		10.5	Power source for air tool. To be separated due to its noise.
		Injection pump room		21.0	To measure performance of injection pump.
		Engine dynamometers room		31.5	To measure performance of engine.
		Classroom		22.7	For 12 students 1.9m ² /student
		Locker room		7.6	Locker room for students.
		Instructors' room		45.4	For max. of 9 instructors and experts, 5m ² /person
		Carpentry store		45.4	Store for finished furniture
		Store		30.2	Tool store
		Oil store		15.1	To store oil for vehicles
		Paint store		15.1	Store for painting materials
		Painting room		60.5	Painting shop for vehicles and furniture
		Motor vehicle workshop		561.6	Floor area determined in accordance with equipment layout
		Corridor		60.5	
	Total			927.0	
Workshop (B)	Carpentry	Classroom		22.7	For 12 students, 1.9m ² /student
		Locker room		7.6	Locker room for students
		Store		30.2	Tool store
		Instructors' room		33.6	For max. of 9 instructors and experts 3.7m ² /person
		Carpentry workshop		517.2	Floor area determined in accordance with equipment
		Timber kiln		12.0	
		Corridor		15.1	
		Sub-total			638.4
	Sheet metal	Classroom		22.7	For 12 students, 1.9m ² /student
		Locker room		7.6	Locker room for students
		Store		30.2	Tool store
		Instructors' room		33.6	For max. of 9 instructors and experts 3.7m ² /person
		Sheet metal workshop		302.4	Floor area in determined accordance with equipment
Corridor			15.1		
Sub-total			411.6		
Welding	Classroom		22.7	For 12 students, 1.9m ² /student	
	Locker room		7.6	Locker room for students	
	Store		30.2	Tool store	

Building	Course	Room name	Floor area (m ²)		Remarks
			Expansion	Rehabilitation	
		Instructor's room		33.6	For max. of 9 instructors and experts 3.7m ² /person
		Welding workshop		302.4	Floor area determined in accordance with equipment
		Corridor		15.1	
		Sub-total		411.6	
		Total		1,461.6	
Workshop (C)	Electricity	Classroom	25.2		For 12 students, 2.1m ² /student
		Locker room	8.4		Locker room for students
		Store	33.6		Tool store
		Instructor's room	33.6		For max. of 9 instructors and experts 3.7m ² /person
		Sheet/welding room	50.4		Floor area determined in accordance with equipment
		Electricity workshop	470.4		Ditto
		Corridor	16.8		Ditto
		Sub-total		638.4	
	Electronics	Classroom	25.2		For 12 students, 2.1m ² /student
		Locker room	8.4		Locker room for students
		Store	50.4		Tool store and for preparation of training
		Electronics workshop	201.6		Floor area determined in accordance with equipment
		Instructor's room	33.6		For max. of 9 instructors and experts 3.7m ² /person
		Corridor	16.8		
	Sub-total		336.0		
Machining	Classroom	25.2		For 12 students, 2.1m ² /student	
	Locker room	8.4		Locker room for students	
	Store	33.6		Tool store	
	Testing room	50.4		Testing room common to all courses	
	Instructor's room	33.6		For max. of 9 instructors and experts 3.7m ² /person	
	Machining	772.8		Floor area determined in accordance with equipment	
	Corridor	16.8			
		Sub-total		940.8	
	Total		1,915.2		
Forge & Foundry			70.2	70.2	For casting, heat treatment and forging
Administration / Lecture Building		Classroom (6)		294.1	For 12 students each
		Drafting room		73.5	For 12 students
		Laboratory (M)		49.0	Remain as it is.
		Laboratory (F)		18.8	Presently used as staff lavatory

Building	Course	Room name	Floor area (m ²)		Remarks
			Expansion	Rehabilitation	
Administration/ Lecture Building		Store		5.7	Remain as it is.
		Coordinator's room		24.5	Present instructors' room
		Tea kitchen		7.5	Remain as it is.
		Instructor/Expert room		46.6	Common work room for instructors and experts.
		Team leader's room		24.5	Present instructors' room
		Dy. Principal room		24.5	Remain as it is.
		Administration office		49.0	Remain as it is.
		Accountants office		18.9	Remain as it is.
		Printing room		17.0	Teaching material production.
		Meeting room		49.0	Remain as it is.
		Principal's room		24.5	Remain as it is.
	Corridor/entrance hall		409.6	Remain as it is.	
	Total			1,136.7	
Mess Hall		Mess hall		146.3	Remain as it is.
		Kitchen		91.5	Remain as it is.
	Total			237.8	
Existing Laboratory				91.8	Remain as it is.
Existing Dormitory		Bed room (38)		475.1	Capacity to be 76
		Clinic		25.0	Two bed rooms to be diverted
		Corridor, Staircase		244.2	
	Total			744.3	
New Dormitory (M)		Bed room	307.2		Capacity to be 80 in use of double deck beds.
		Corridor, staircase	94.8		
	Total		402.0		
New Lavatory			91.8		For new dormitory
New Dormitory (W)		Bed room (13)	199.7		Capacity to be 52 in use of double deck beds.
		Lavatory	46.1		Shower (4) / lavatory (3)
		Corridor, staircase	79.4		
	Total		325.2		
Connecting corridor			150.4		
Workshop lavatory			64.0		Attached to workshop
Substation			64.0		Power supply to entire facility
Elevated tank			90.3		Water supply to entire facility
Gate house			7.2		
Grand total			3,090.1	4,739.6	

2) Section Plan

In working out the section plan, special attention was paid to natural ventilation and natural lighting as well as protection against rainwater. Floor height of each building was determined in consideration of economical structure system and at the same time to secure same or more ceiling height than the existing facilities.

Top level of horizontal girder of the new workshop building will be 3.5m from floor as is the case with the existing workshop buildings.

Likewise, the roof pitch of the new workshop building will be 3/10 as is the case with the existing workshop building. Under this project,

the asbestos slate roofs of the existing facilities are to be changed to box profiled steel sheet. Since minimum pitch of box profiled

steel sheet roof can be as gentle as 1.5/10, there will be no problem with the pitch of 3/10. Floor height of the dormitories will be 2.85m

which is same as that of existing dormitories. Ceilings will be direct ceilings where there are floor slabs above. In the case of top

floor, hanging ceilings should be provided at 2.5 meter high from floor.

3) Structural Plan

① Outline of the structures

Number of stories : One-story (workshop building)
Two-stories (dormitory)

Floor height : Girder height 3.5m (workshop building)
1st floor 2.85m, 2nd floor 2.85m (dormitory)

Basic span : 4.2m×24.0m (workshop building)
6.0m×3.2m (dormitory)

Structural system : Steel rigid frame structure (workshop building)

Reinforced concrete rigid frame structure
(dormitory)

Foundation system : Direct foundation

② Design standards

The structural design is developed in accordance with the following local standards. In case there are no local standards applicable to specific part of design, relevant Japanese standards are applied.

- The Public Health Act (Chapter 269)
Revised Edition, 1964
- British Standard
Structural use of concrete (BS8110: Part 1~3 1985)

③ Seismic force

Uganda has seen a number of relatively large earthquakes such as the one of magnitude 5.7 in 1945. While the Ugandan Government is yet to establish standards for seismic design, necessity is understood in the country. A method tentatively used is a horizontal force analysis for wind load multiplied by a given coefficient. Among the donor countries, it is noted that the U.S.A. is executing projects to reinforce existing buildings which were done by them without consideration of seismic design.

An earthquake of magnitude about 6.0 is now predicted to occur, with an epicenter in Lake Victoria, 50km away from Kampala city. Thus, a ground surface maximum acceleration (a_{max}) is obtained for this case, so as to establish a seismic force coefficient as follows;

② Generator facility

A generator will be installed to cover power failure. Capacity of the generator will be about 100kVA enough to cover minimum required functions of the buildings, such as water supply and drain pumps, fire extinguishing pumps, kitchen equipment and part of the administrative office building. It should be noted that the training equipment will not be covered by the generator.

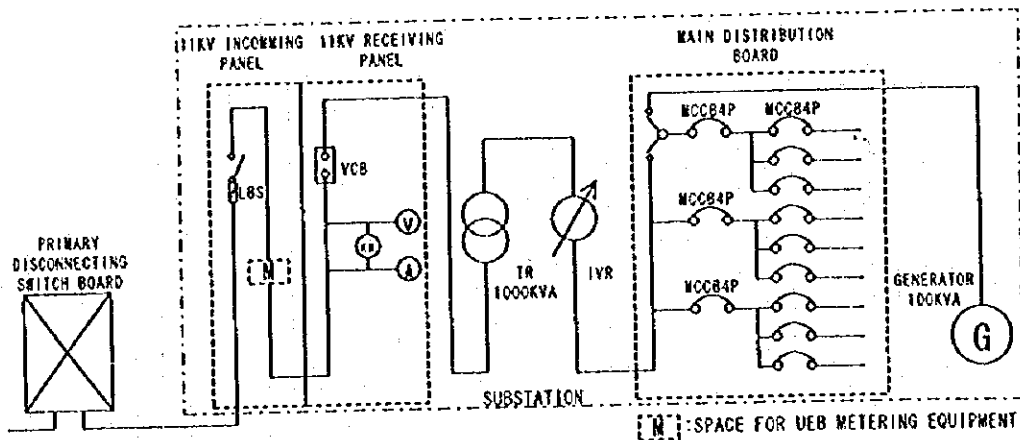


Fig. 2-3 Power Supply System Diagram

③ Main line feeder power equipment

Power will be supplied to the distribution board installed in each building from the substation. Existing distribution boards for lighting and power circuits which are worn out and thus difficult to repair will be replaced.

- Power : 3Ø3W 415kV
- Outlet, Lighting : 3Ø4W 415-240V

④ Lighting fixtures and socket outlets

- Fluorescent lamps will be mainly used as lighting source considering their efficiency and easy maintenance. Switch circuits will be segmented in consideration of energy saving. Target intensity of illumination are planned as follows.

Table 2-6 Target illumination in major rooms

Rooms	Illumination level (lx)
Principal's room, dy. principal's room, administration office, drafting room	300~400
Workshop, classroom, mess hall, dormitories	200~300
Corridor, storage	50~150

- Sockets

Socket plan shall conform to relevant BS standards. Ordinary wall sockets and those for use with specific items of equipment will be installed in each room. Emergency generator circuit will be connected if necessary.

⑤ Telephone equipment

Two distribution panels (DP) are located near the project site, serving as terminals for connecting telephone lines. Capacity of each panel is of 10 lines and is installed on an upright pole. To cope with expanded activities planned under this project, additional four lines will be lead to the site from the DP. A small-capacity switch board for about 24 extension lines will be installed in the administration office room of the Administration /Lecture building.

⑥ Emergency alarm facility

An emergency alarm system will be provided for prompt evacuation in case of fire. A receiver will be installed in the office of the Administration/Lecture building. Each building will be provided with red exit lights, warning bells, and alarm transmitters.

⑦ Lightning arresting facility

A lightning arresting equipment will be installed in accordance with relevant BS standards.

⑧ Exterior lighting

Exterior lamps will be installed around each building within the site for anticrime purpose.

5) Air-Conditioning and Ventilating System Plan

① Air-conditioning facility

This project will not include air conditioning system.

② Ventilating facility

Natural ventilation is the basic system to reduce maintenance costs. Cross ventilation shall be secured for each room as required in the public health act of Uganda. Mechanical ventilation will be limited to kitchen and places in the workshops where equipment generate dust and odor.

6) Plumbing Plan

① Water supply system

Existing inlet pipe (diameter: 75mm) will be utilized for water supply system which covers the whole buildings including the existing ones. City water will be lead to the newly-installed water reservoir (volume, 25m³) through the existing inlet pipe. After the water reservoir water is pumped up to a newly-installed elevated water tank (V=2m³, H=15m) to be distributed to new buildings as well as existing ones by gravity.

Amounts of daily water supply:

Staff: 107people×100ℓ/person·day= 10,700ℓ/day

Trainees: 250people×60ℓ/person·day= 15,000ℓ/day

$$= 25,700\ell/\text{day} = 25\text{m}^3/\text{day}$$

Water tank capacity : 25m³ (equivalent to daily water supply in consideration of cut-off)

Elevated water tank capacity: 12m³ (half of the daily water supply)

At present a direct-coupled water supply system is employed and therefore small water tanks are provided in the main building, the mess hall, the lavatory and the workshop B to cope with city water cut-off. Those existing small water tanks and inlet pipes will be replaced with a new water supply system. Existing water supply pipes in the existing buildings will not be renovated. To cope with change of water supply pressure due to the new supply system, pressure reducing valves will be provided.

② Hot-water supply system

An electric storage-type water heater will be installed in the tea kitchen and shower rooms.

③ Sewerage system

Sewerage and ordinary waste water will be discharged separately. Sewerage will be disposed in the soak pit after discharged to a settling septic tank. Ordinary waste water will be discharged into the existing ditch which will be repaired under the project. Sanitary water pipes from the existing buildings have been seriously worn out by long use and are regarded as unfit for further use. Thus, those pipes will be renewed after the existing first sewerage pit up to the site boundary. Storm water will be discharged to the existing ditch, together with ordinary waste water.

④ Gas supply system

A LPG equipment is planned in the kitchen in the existing mess hall. The LPG equipment will include LPG cylinders (20kg each) and header pipe (5 pieces×5 pieces) for about one-week consumption.

⑤ Fire extinguishing system

The system will conform to relevant BS standards. Outdoor hydrants will be planned for the entire premise. Indoor hydrants will be planned in the Administration/Lecture building and the Dormitory. A fire pump will be shared for both systems.

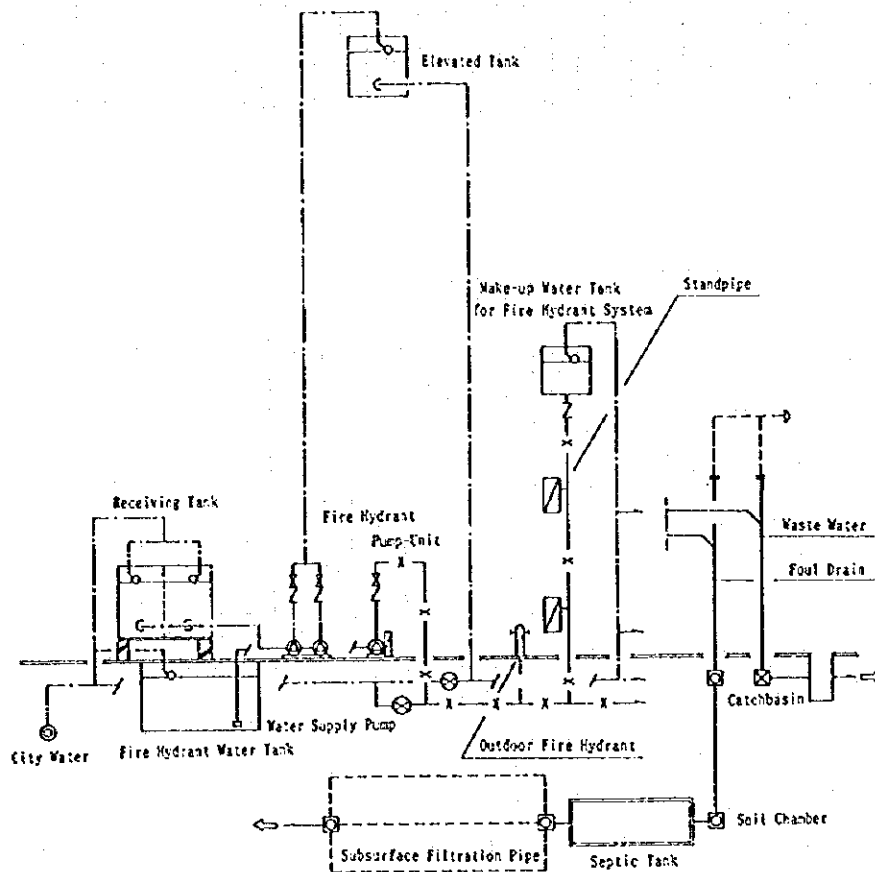


Fig. 2-4 Piping System Diagram

⑥ Kitchen facility

The existing kitchen equipment have become superannuated and most of them do not function properly. As a result, cooking is done outdoors by using charcoal, which condition is difficult to meet an expected increase in the number of trainees when this project is completed. Therefore, the existing kitchen equipment will be renewed all over.

⑦ Pressure pipe facility

Pressure pipes will be installed for the equipment in the new and existing workshops.

7) Building Materials Plan

Building materials to be used for the project shall have required quality and meet the local conditions such as nature, customs and construction methods. They should also be economical and highly durable to maintain and manage the facilities easily.

① Main structural material

Building	Component	Material	Remarks
Workshop	Column, Girder	Steel	Economical and reliable for large span structure
	Foundation, Foundation girder, Slab	Reinforced concrete	Conventionally used in the country
Dormitory	Column, Girder, Slab, Foundation, Foundation girder		

② Exterior finishing material

Room	Floor	Wall
Roof	Box profile steel sheet	Commonly used for factories in the country. Kenya-made products are available locally.
Wall	Dormitory	Paint on mortar Common method in the country. Paint is easy to procured.
	Workshop	Panel profiled steel sheet, Brick Light weight, long span and inexpensive. Appropriate to replace existing asbestos cement board. Kenya-made products are available locally.
Doors & Windows	Aluminum window	Kenya-made products are available locally. Strong against rusting and durable.
	Steel door	Durability is first priority. One side flush doors are available locally.

③ Interior finishing material

Room	Floor	Wall	Ceiling	Remarks
Workshop	Mortar steel troweled	Panel profiled steel sheet, Paint on block board	—	First priority is durability and easy maintenance.
Lavatory, Dormitory	Mortar steel troweled	Paint on mortar	Paint on cement board	Economical finishing. Maintenance is easy.

(3) Equipment Plan

In the equipment plan, consideration was taken on the principal that the Project aims at assisting the programme to be executed under the project-type technical cooperation. Based on the tentative list of equipment discussed during the basic design study, type and quantity of equipment are finalized with the basic guidelines as stated below;

- ① The ordinary-level equipment should be mainly selected. Also, those requiring less consumables should be given priority to be selected.
- ② The quantity of equipment is decided in consideration of the number of trainees, allowing trainees to have effective trainings in some groups.
- ③ For the purpose of reducing costs as well as easy maintenance, possibility of local procurement or procurement in the third countries such as Kenya, European countries should be thoroughly examined.
- ④ To reduce a burden on maintenance, spare parts for approximately two years will be supplied, including spare blades, bending mold, belts for machines, spare boards and cables for electrical machines etc.

The equipment will not be of unnecessarily high grade in view of the condition of the existing equipment and equipment installed in similar facilities. They should function by long use and achieve the training objective.

Main purpose of use of principal items of equipment are stated below:

Equipment	Main purpose of use
< Common and general use >	
(Heat treatment · casting)	
● Oil-fired furnace	For melting cast iron
● Quenching bath	For annealing and normalizing after heating
● Tilting-type crucible	For melting light alloys
< Machining field >	
● Lathe	For machining steel bars
● Radial drilling machine	For drilling and tapping large-sized components
● Vertical milling machine	For grooving, slotting and surfacing of flat surfaces
● Universal milling machine	Used as a universal milling machine. Also, used for grooving and surfacing by changing heads.
● Shaper	For rough-cutting and grooving flat surfaces
● Upright boring machine	For drilling and tapping steel plates of 40~50mm thick
● Hack sawing machine	For cutting steel materials before using in practice
< Electricity field >	
● M-G set for testing	To analyse characteristics such as voltage, current, and revolutions by means of combination of motor and generator
● Electric winding machine	To re-wind field coils of motors transformers and chokes
● LRC load apparatus	To calibrate the equipment by means setting necessary resistance values, and electrical loads etc.
● Distribution board for practice	To be used for training in wiring and installation of board.
● Dryer	To dry insulating varnish of a transformer, motor, etc. after rewinding
< Welding field >	
● AC arc welder	Used for welding steel materials
● TIG/MIG welder	Suitable for welding nonferrous metals
● Engine welder	An electric welding machine connected with engine generator.
● Square shear	Used for cutting thick steel plates.

Description	Major applications
<ul style="list-style-type: none"> ● Upright drilling machine 	Used for drilling and tapping steel plates of about 40~50mm thick
<ul style="list-style-type: none"> ● Band sawing machine 	For cutting steel sheets in intricate shapes
<ul style="list-style-type: none"> ● Bending tester 	To measure the strength of welded joints against bending
< Motor vehicle field >	
<ul style="list-style-type: none"> ● Port power set 	To repair dents or deformed part of a vehicle. It composed of a hydraulic pump and the attachments such as extension rods and clamps
<ul style="list-style-type: none"> ● Brake/speedometer tester 	To measure brake force of vehicles, and calibrate a speedometer
<ul style="list-style-type: none"> ● Multiscope analyser 	To measure engine revolutions, cam angle, and ignition timing, etc.
<ul style="list-style-type: none"> ● Alternator/starter motor tester 	To analyse characteristics of alternators, starter motors, etc.
<ul style="list-style-type: none"> ● Chassis dynamometers 	To measure power of vehicles
<ul style="list-style-type: none"> ● Portable load meter 	To measure vehicle weight and cargo loads

The following list shows outline of the basic plan for the main items of equipment

Table 2-7 Equipment List

No.	Equipment	Q'ty
	< Common and general use >	
	(Heat treatment/casting)	
A-1	Oil fired furnace (Chamber size: 400×350×500mm)	1 unit
A-2	Salt bath (Inner size: 150mm dia.×300mm)	1 unit
A-3	Oil quenching bath (Capacity: 200ℓ)	1 unit
A-4	Crucible furnace (Tilt type)	1 unit
A-5	Work bench/cabinet/rack, etc.	1 set
A-6	Assorted tools	1 set
	(Testing)	
B-1	Vickers hardness tester	1 unit
B-2	Shore hardness tester	1 unit
B-3	Electronic balance (1,000g, 6,000g)	1 set
B-4	Surface roughness tester	1 unit
B-5	Surface roughness gauge (Flat, cylindrical)	1 set
B-6	Handy tachometer	2 units
B-7	Work bench/cabinet/rack, etc.	1 set
	(Classroom)	
C-1	Student's desk/chair	1 lot
C-2	Instructor's desk/chair	1 lot
C-3	Blackboard (With casters)	1 lot
C-4	Pin board (With casters)	1 lot
	(Kitchen)	
D-1	Refrigerator	2 units
D-2	Freezer	2 units
	(Dormitory)	
E-1	Bed (Single deck, with mattress)	76 units
E-2	Bed (Double deck, with mattress)	66 units
E-3	Chair	208 units
E-4	Bed for patient (with mattress)	2 units

No.	Equipment	Qty
E-5	Examination bed	1 unit
E-6	Doctor's desk and chair	1 set
E-7	Nurse's desk and chair	2 sets
E-8	Chemical cabinet	2 units
E-9	Refrigerator	1 unit
E-10	Boiling sterilizer	1 unit
	< Machining field >	
F-1	Precision lathe (Distance between chuck and centre: 800mm)	8 units
F-2	Precision lathe (Distance between chuck and centre: 1,500mm)	2 units
F-3	Radial drilling machine (Column: 160mm dia., capacity: 50mm)	1 unit
F-4	High speed cutting-off machine (Grinding wheel: 355mm dia.)	1 unit
F-5	Universal milling machine (Table size: 1,350×270mm)	1 unit
F-6	Vertical milling machine (Table size: 1,350×270mm)	1 unit
F-7	Universal indexing centre (Height to center: 135mm)	1 unit
F-8	Swivel angle table (Table size: 300mm dia.)	1 unit
F-9	Shaper (Stroke: 520mm, table travel: 650 mm)	1 unit
F-10	Bench drill press (Capacity: 13mm, with drill bits, drill stand)	2 units
F-11	Upright drilling machine (Swing: 550mm, capacity: 50mm)	1 unit
F-12	Double head grinder (Grinding wheel: 255mm dia.)	2 units
F-13	Hack sawing machine (Stroke: 120mm, capacity: 250mm steel bar)	1 unit
F-14	Surface plate (Size: 1,000mm×1,000mm)	1 unit
F-15	Surface plate (Size: 450mm×450mm)	6 units
F-16	Bench vice (Size: 150mm)	14 units
F-17	Dial gage with magnet base	14 units
F-18	Block gage (103 pcs.)	2 sets
F-19	Disc grinder (Grinding wheel: 150mm dia.)	4 units
F-20	Electric drill (Capacity: 6.5mm)	4 units
F-21	Arbor press	1 unit
F-22	Hand lifter (Capacity: 1,000kg, manual)	1 unit
F-23	Work bench/cabinet/rack, etc.	1 set
F-24	Assorted tools	1 set

No.	Equipment	Qty
	< Electricity field >	
G-1	Induction voltage regulator (Single phase, 5kVA)	2 units
G-2	Induction voltage regulator (Three phase, 5kVA)	2 units
G-3	Induction motor (Single phase, 400W)	6 units
G-4	Induction motor (Three phase, 400W)	6 units
G-5	M-G set (AC, motor : 2.2 kW, generator: 2kW)	1 set
G-6	M-G set (DC, motor : 2.2 kW, generator: 2kW)	1 set
G-7	Transformer (Single phase)	4 units
G-8	Transformer (Three phase)	4 units
G-9	Insulation voltage resistance tester (With current breaker)	1 unit
G-10	Winding machine (Electric, capacity: 2.7mm)	1 unit
G-11	Winding machine (Manual, capacity: 2mm)	7 units
G-12	Portable DC volt meter (Range: 0.3/1/3/10V, etc.)	8 units
G-13	Portable DC ampere meter (Range: 0.1/0.3/1/3A, etc.)	8 units
G-14	Portable AC volt meter (Range: 75/150V, etc.)	8 units
G-15	Portable AC ampere meter (Range: 0.1/0.2/0.5/1A, etc.)	8 units
G-16	Portable DC potentiometer (Range: 11.11mV~111.1V)	1 unit
G-17	Portable power factor meter (Input current: 0.2/1A, etc.)	4 units
G-18	Standard battery (1V)	2 units
G-19	Standard resistance (111.11 Ω)	4 units
G-20	Constant DC power source (Output: 0~250V)	4 units
G-21	Watt meter (Single phase, 1/5kV, 50mA/10A)	4 units
G-22	Frequency indicator (Range: 0.001Hz-1GHz)	2 units
G-23	Handy tachometer	4 units
G-24	Whetstone bridge (Range: 1,000~10,000M Ω)	2 units
G-25	Double bridge (Range: 0.1~110 Ω)	2 units
G-26	Synchroscope (20MHz, 2-channel)	5 units
G-27	Flux meter (With detecting coil)	2 units
G-28	Slide resistance (Range: 0.2~3,000 Ω)	2 units
G-29	Mega meter (100V, 20M Ω)	2 units
G-30	Circuit tester	13 units
G-31	Earthing resistance meter (Range: 0~10~100~1, 1,000 Ω)	2 units
G-32	Dial resistance (Range: 0~111.111 Ω)	2 units

No.	Equipment	Qty
G-33	Load resistance (Single phase, 240V, 3kW)	2 units
G-34	LRC load apparatus	1 unit
G-35	Cut transformer	2 units
G-36	Cut motor	2 units
G-37	Transformer (Three phase, input: 415V, output: 200V)	2 units
G-38	Portable illumino meter (Range: 300/1,000/3,000 lux)	2 units
G-39	Washing machine (Home use, 2 tubs)	2 units
G-40	Electric oven (1,200W)	2 units
G-41	Dryer (5kW)	1 unit
G-42	Foot shear (Capacity: 1mm×610mm)	1 unit
G-43	Rolling tower (Max. height: 3.48m)	1 unit
G-44	Bench drill press (Capacity: 13mm, with drill bits, drill stand)	2 units
G-45	Double head grinder (Grinding wheel: 255mm dia.)	2 units
G-46	Air compressor (Air pressure: 7kg, tank: 40ℓ)	2 units
G-47	Distribution board for practice (Size: 2,000mm×1,800mm)	13 units
G-48	AC arc welder (Rated output current: 250A)	1 unit
G-49	Disc grinder (Grinding wheel: 100mm)	2 units
G-50	Electric drill (Capacity: 6.5mm)	4 units
G-51	Hammer drill (For concrete, capacity: 16mm)	2 units
G-52	Jigsaw (Capacity: 6mm steel)	2 units
G-53	High speed cutting-off machine (Grinding wheel: 355mm)	1 unit
G-54	Work bench/cabinet/rack, etc.	1 set
G-55	Assorted tools	1 set
G-56	Air conditioner (Separated type)	1 unit
G-57	Cleaner for air conditioner (Capacity: 2kg)	2 units
G-58	Pipe threading machine (Capacity: 15A-100A)	1 unit
G-59	Tool set for air conditioner (17 pcs.)	2 sets
G-60	Tool set for maintenance (45 pcs.)	2 sets
G-61	Freezer (Home use)	1 unit
G-62	Refrigerator (Home use)	2 units
G-63	Recording thermometer/hygrometer	1 unit
G-64	Tube drilling machine (Capacity: 20-50mm)	1 unit
G-65	Pipe bending machine (Capacity: 3/4-2 inches, manual)	2 units
G-66	Pipe cutter (Capacity: 6A-50A)	2 units

No.	Equipment	Q'ty
	< Welding field >	
H-1	Electrode dryer (Capacity 50kg)	2 units
H-2	AC arc welder (Rated output current: 300A)	12 units
H-3	MAG welder (Related output current: 350A, with wire feeder, gas regulator)	1 unit
H-4	TIG welder (Related output current: 300A, with torch, corret)	1 unit
H-5	MIG welder (Related output current: 400A, with wire feeder, gas regulator)	1 unit
H-6	DC arc welder (Rated output current: 300A, with holder, cable)	2 units
H-7	Engine welder (Ratd output current: 300A)	1 unit
H-8	Gas manifold system (with cylinders, torches, regulators)	1 set
H-9	Sport welding machine (Max. input: 25kVA)	2 units
H-10	Automatic gas cutting machine (Capacity: 3~100mm thick, with rail)	2 units
H-11	Shearing machine (Hydraulic, capacity: 13mm thick×2,000mm)	1 unit
H-12	Upright drilling machine (Swing: 550mm, capacity: 50mm)	1 unit
H-13	Bench drill press (Capacity: 13mm, with drill bits, drill stand)	2 units
H-14	Band sawing machine	1 unit
H-15	Hack sawing machine (Stroke: 120mm, capacity: 250mm steel bar)	1 unit
H-16	Double head grinder (Grinding wheel: 255mm dia.)	2 units
H-17	Bending tester	1 unit
H-18	Belt sander	4 units
H-19	Buffing machine	4 units
H-20	Air compressor (Air pressure: 10kg, tank: 60ℓ)	1 unit
H-21	Hole saw set	1 set
H-22	Magnetic detector (3,000AT)	1 unit
H-23	Work bench/cabinet/rack, etc.	1 set
H-24	Assorted tools	1 set
	< Sheet metal field >	
I-1	Work bench/cabinet/rack, etc.	1 set

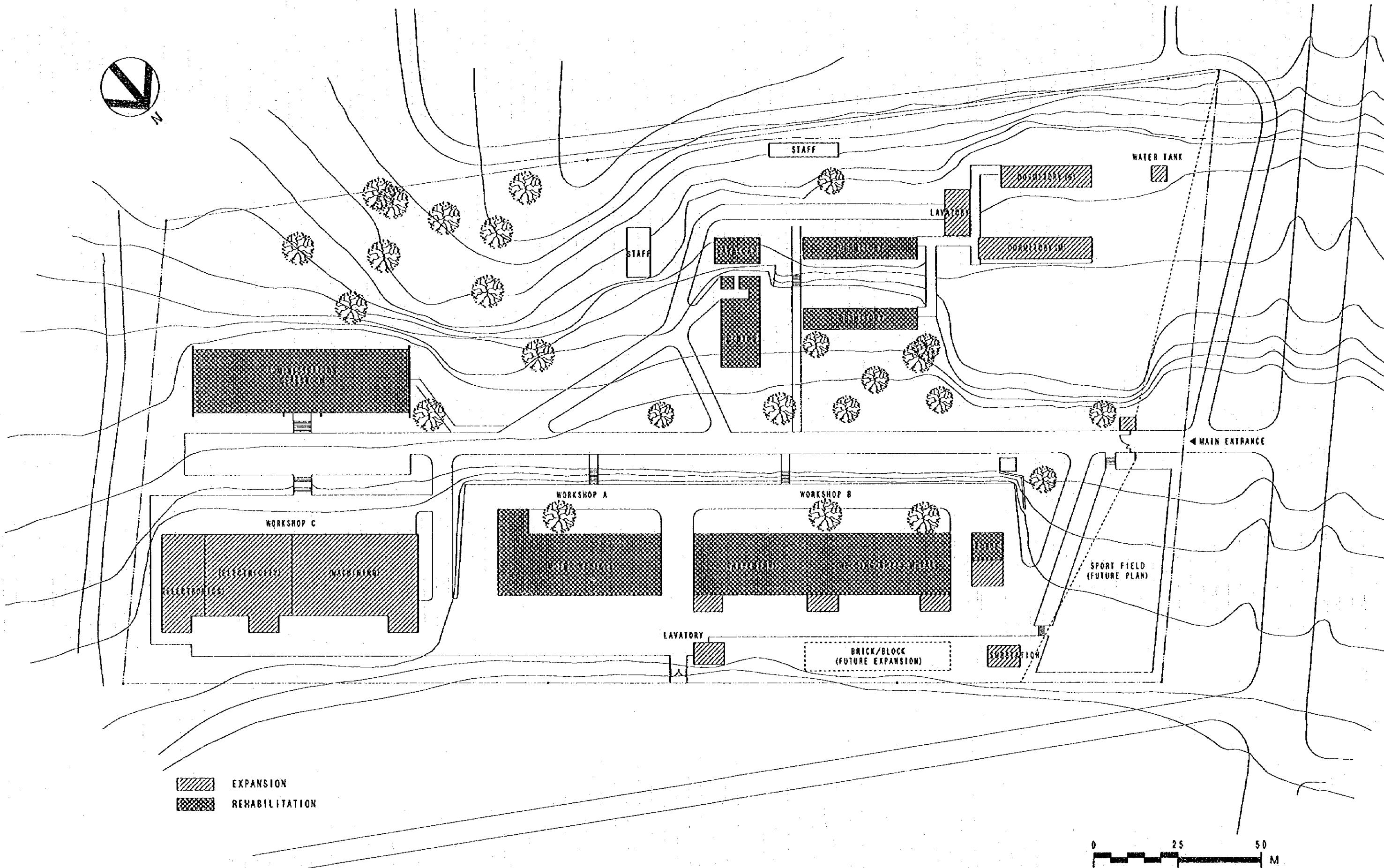
No.	Equipment name	Qty
	< Motor vehicle field >	
J-1	4-pole lift (Capacity: 3tons, lift: 1,700mm)	1 unit
J-2	Car washer (Capacity: 1,100ℓ/h, 60kgf/m ²)	1 unit
J-3	Parts washing stand (Inner size 1,160×640×150mm, 125ℓ)	2 units
J-4	Adjustable reamer set (Range: 10~65mm)	2 sets
J-5	Valve refacer (Capacity: 100mm)	1 unit
J-6	Foot brake pressure gauge (Range: 100kgf)	1 unit
J-7	Brake reliner (Capacity: 2t, stroke: 45mm)	1 unit
J-8	Port power set (Capacity: 5t, with manual pump)	1 set
J-9	Head light tester (Light condensing type, distance: 1m)	1 unit
J-10	Wheel balancer (Applicable size of rim: 10~17in. dia.)	1 unit
J-11	Wheel alignment tester (Applicable size: 254~406mm dia.)	1 unit
J-12	Side slip tester (Capacity: 3,000kg)	1 unit
J-13	Exhaust gas tester (For CO/HC)	1 unit
J-14	Engine scope (For cam angle, injection timing, etc.)	1 unit
J-15	Alternator scope (0~34V, tachometer 0~4,000rpm)	1 unit
J-16	Brake/speed meter tester (Capacity: 3,000kg, braking force: 1,000kg)	1 unit
J-17	Spark plug cleaner tester (Air pressure: 9kg/cm ²)	2 units
J-18	Air filter checker (With dry paper filter)	1 unit
J-19	Sound level meter (Range: 31~8,000Hz)	2 units
J-20	Engine tacho tester (Range: 0~7,500rpm)	4 units
J-21	Coil condenser tester (Range: 0~100kΩ)	4 units
J-22	Multi scope analyzer (For timing advance, ignition timing, etc.)	1 unit
J-23	Engine turner (For point resistance, etc.)	4 units
J-24	Diesel timing tester (For rpm, advance, etc.)	1 unit
J-25	Alternator/starter motor tester	1 unit
J-26	Valve spring tester (Capacity: 80mm dia., 200mm long)	1 unit
J-27	Cam angle tacho tester (Applicable number of cylinders: 2~8)	4 units
J-28	Chassis dynamometer (Capacity: 3,000kg)	1 unit
J-29	Portable load meter (Capacity: 2,000kg/pc.)	1 set
J-30	Fuel consumption meter (Indicator: 0~99.9 km/ℓ)	1 unit
J-31	Battery charger (Output: 6~12V, 70A)	2 units
J-32	Air compressor (Air pressure: 14kg, tank: 260ℓ)	2 units
J-33	Bench drill press (Capacity: 13mm, with drill bits, drill stand)	2 units
J-34	Double head grinder (Grinding wheel: 255mm dia.)	2 units


No.	Equipment name	Qty
J--35	Disc grinder (Grinding wheel: 100mm dia.)	2 units
J--36	Brake lining dust collector (With gun, hose)	1 unit
J--37	Infrared dryer stand (Valve: 250W×6pcs.)	2 units
J--38	AC arc welder (Rated output current: 300A)	2 units
J--39	Spot welder (Rated capacity: 13kVA)	1 unit
J--40	Vacuum cleaner (Motor: 1kW)	2 units
J--41	Electric drill (Capacity: 10mm steel, 21mm wood)	2 units
J--42	Valve seat grinder (Capacity: stem 6~10mm dia., seat 28~60mm dia.)	1 unit
J--43	Tire changer (Applicable size of rim: 12~20in. dia.)	1 unit
J--44	Hydraulic press (Capacity: 35t)	1 unit
J--45	Exhaust hose reel (With blower)	1 unit
J--46	Handy air reel (With 8m hose)	4 units
J--47	Handy reel lamp (With 10m cord)	4 units
J--48	Handy reel (With 10m cord)	4 units
J--49	Valve seat cutter	1 unit
J--50	Portable hydraulic jack (Capacity: 5tons)	2 units
J--51	Garage jack (Capacity: 5tons)	2 units
J--52	Transmission jack (Capacity: 800kg)	1 unit
J--53	Oil bucket pump (Capacity: 18ℓ)	2 units
J--54	Oil changer (Capacity: 13ℓ)	1 unit
J--55	Chassis lubricator (Capacity: 350g/min.)	2 units
J--56	Insulation resistance meter (Capacity: 500V/1,000MΩ)	2 units
J--57	Cut model (gasoline engine)	1 unit
J--58	Tubeless tire valve inserter	4 units
J--59	Slide hammer puller (Capacity: 0~95mm)	4 units
J--60	Nozzle tester (100mm dia.)	1 unit
J--61	Air riveting machine (Hammer: 62mm dia.×340mm)	1 unit
J--62	Digital multi meter	4 units
J--63	Battery tester	4 units
J--64	Work bench/cabinet/rack, etc.	1 set
J--65	Assorted tools	1 set

No.	Equipment	Qty
K-1	< Electronics field > Work bench/cabinet/rack, etc.	1 set
L-1	< Carpentry field > Work bench/cabinet/rack, etc.	1 set

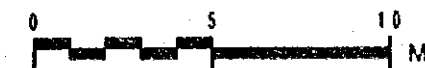
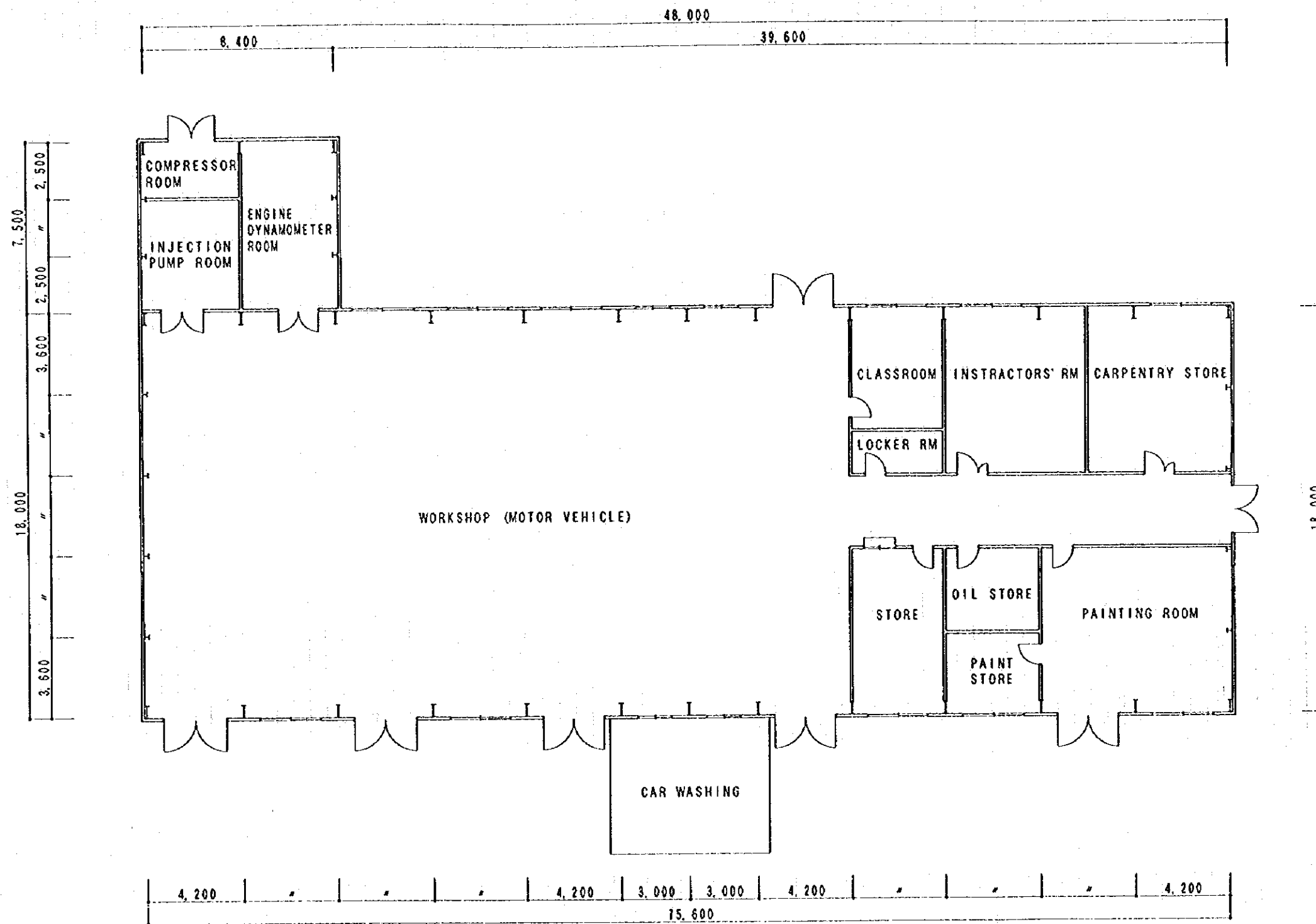
(4) Basic Design Drawings

1. Site Plan
2. Ground Floor Plan, Workshop A
3. Elevation, Workshop A
4. Ground Floor Plan, Workshop B
5. Elevation, Workshop B
6. Ground Floor Plan, Workshop C
7. Elevation, Workshop C
8. Ground Floor Plan, Administration / Lecutre Building
9. Ground Floor Plan, New Dormitory & Lavatory
10. First Floor Plan, New Dormitory
11. Elevation & Section, New Dormitory
12. Floor Plan & Elevation, Forge, Workshop Lavatory and Gate



-  EXPANSION
-  REHABILITATION



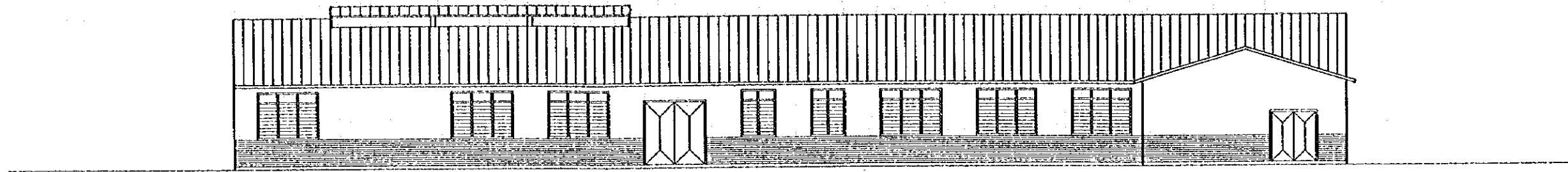


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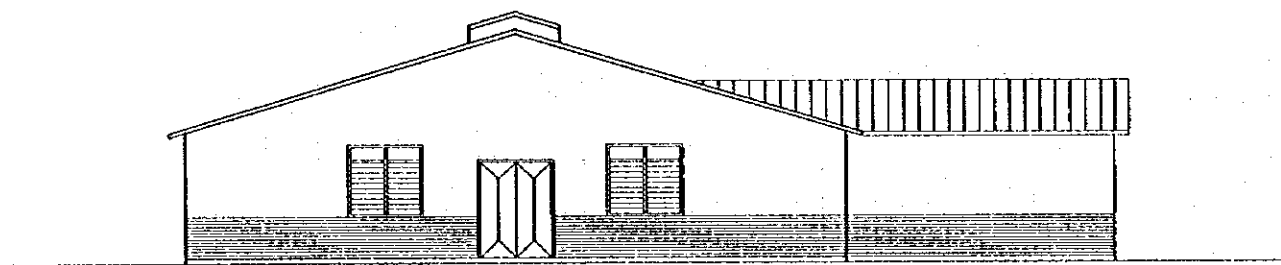
WORKSHOP A
-REHABILITATION-

GROUND FLOOR PLAN

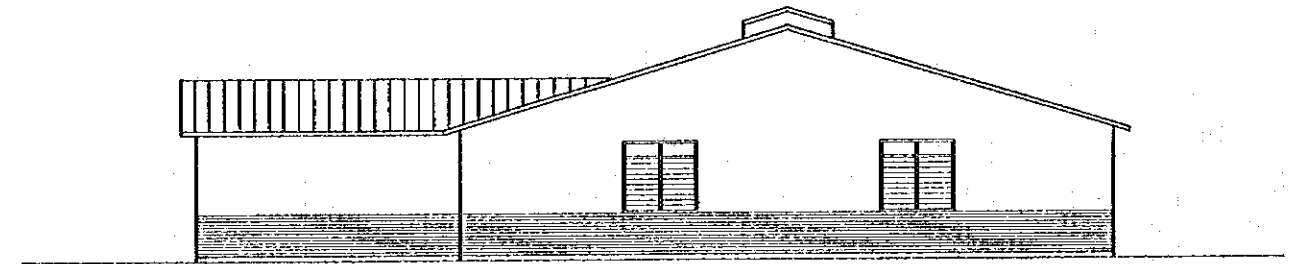
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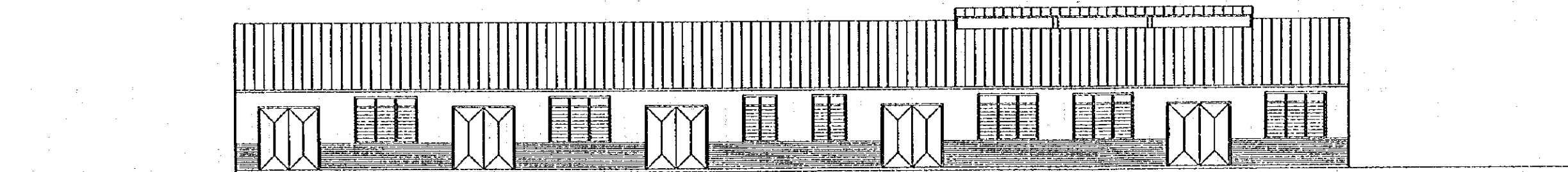
SOUTH WEST ELEVATION



NORTH WEST ELEVATION



SOUTH EAST ELEVATION



NORTH EAST ELEVATION

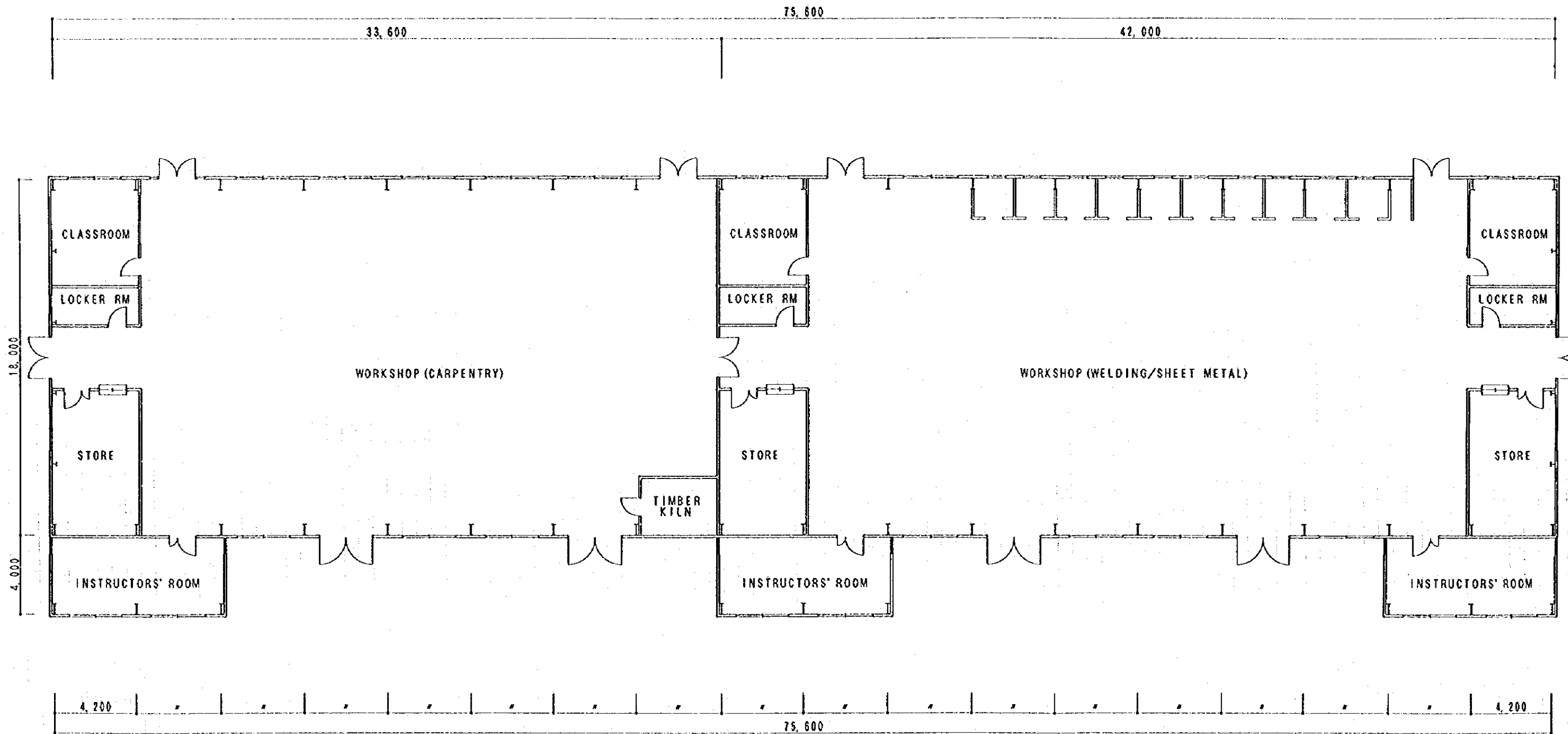


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WORKSHOP A
-REHABILITATION-

ELEVATION

3

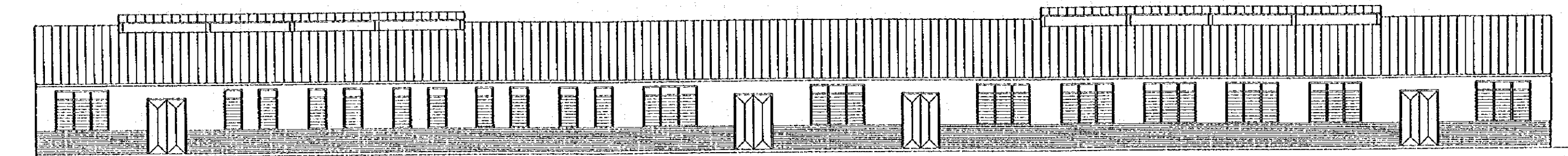


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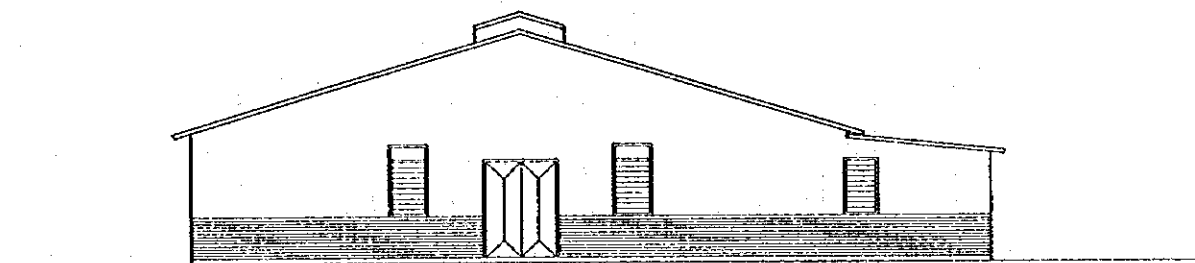
WORKSHOP 8
-REHABILITATION-

GROUND FLOOR PLAN

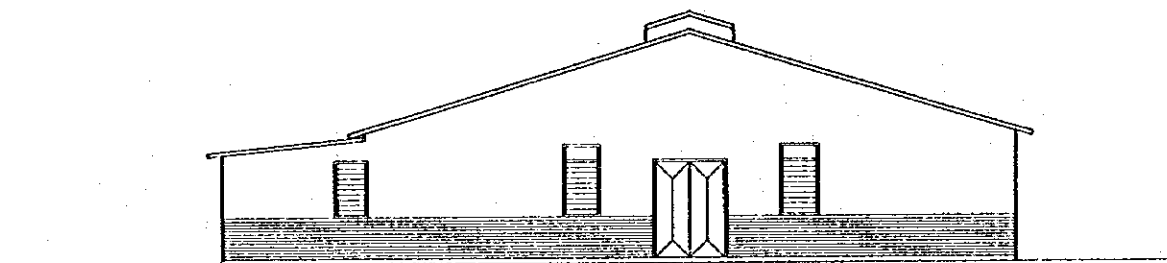
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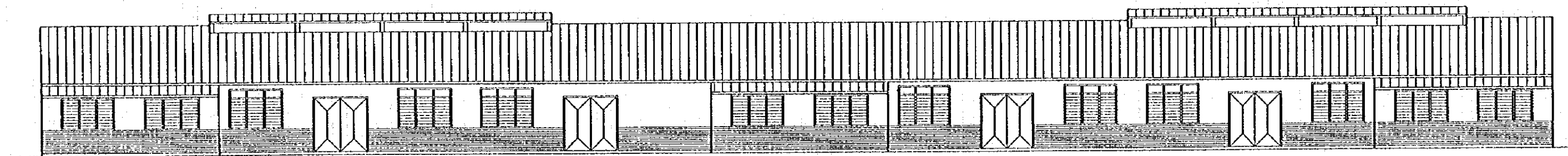
SOUTH WEST ELEVATION



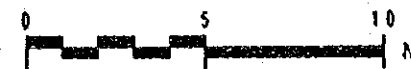
SOUTH EAST ELEVATION



NORTH WEST ELEVATION



NORTH EAST ELEVATION

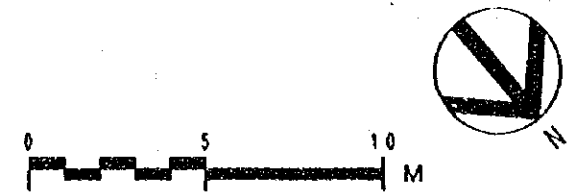
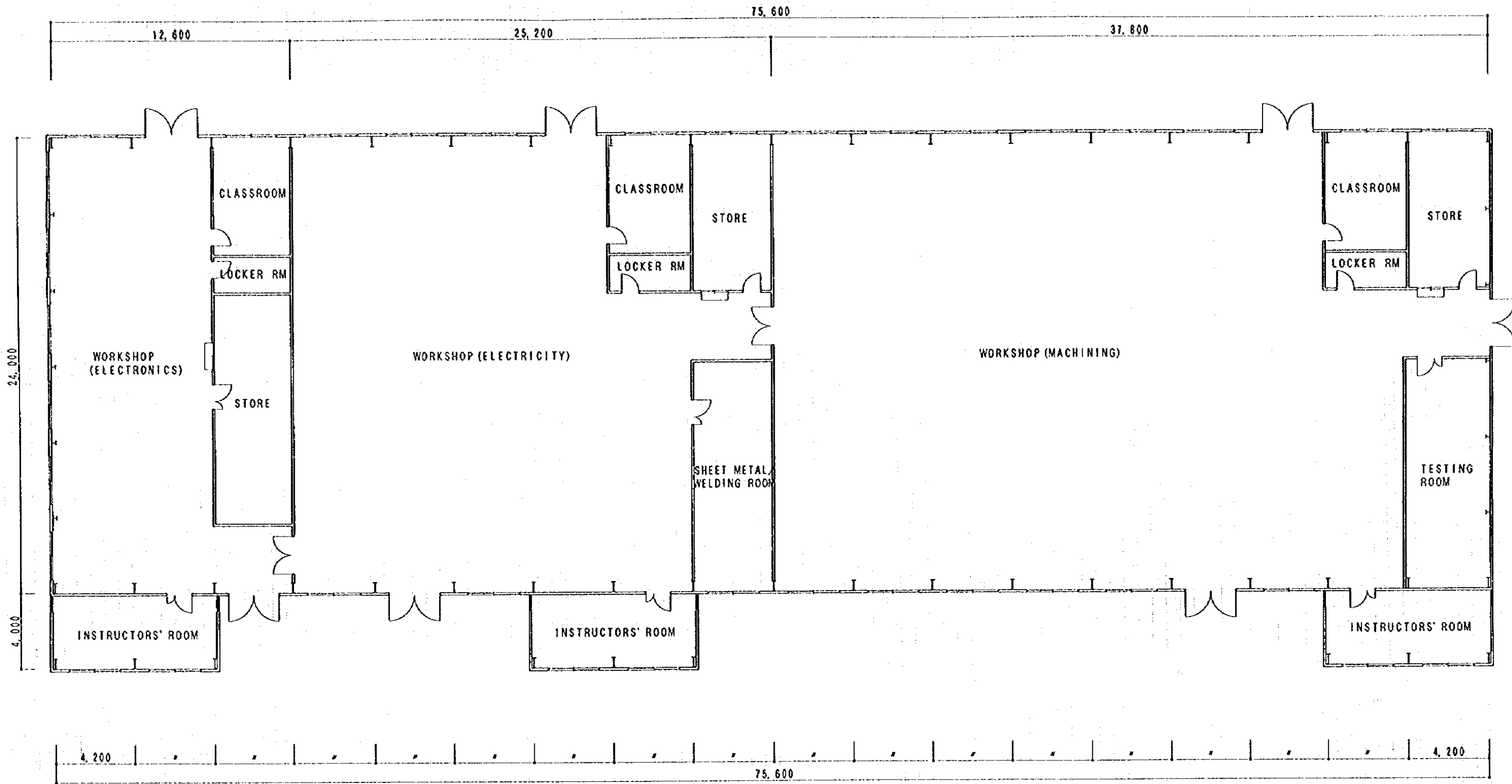


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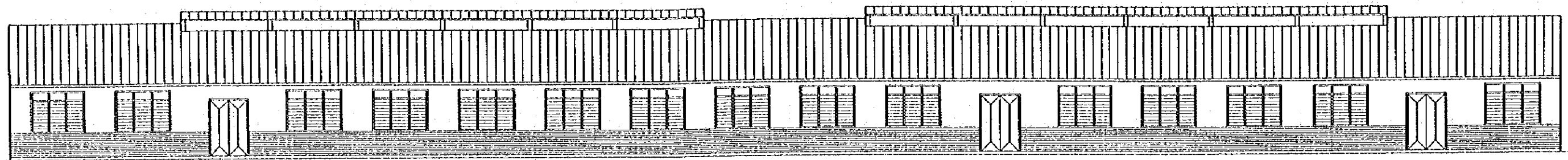
WORKSHOP B
-REHABILITATION-

ELEVATION

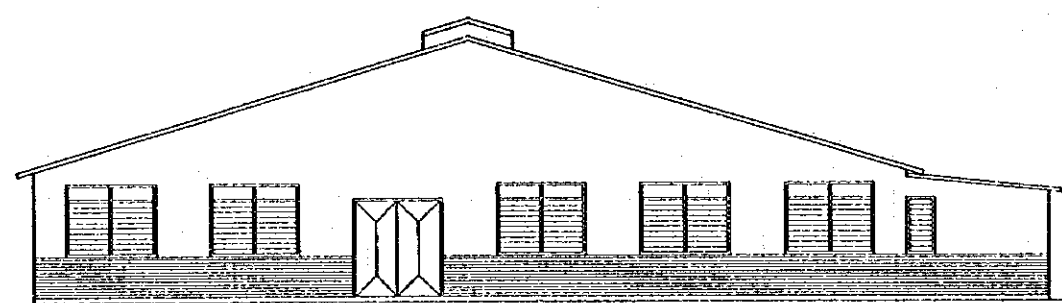
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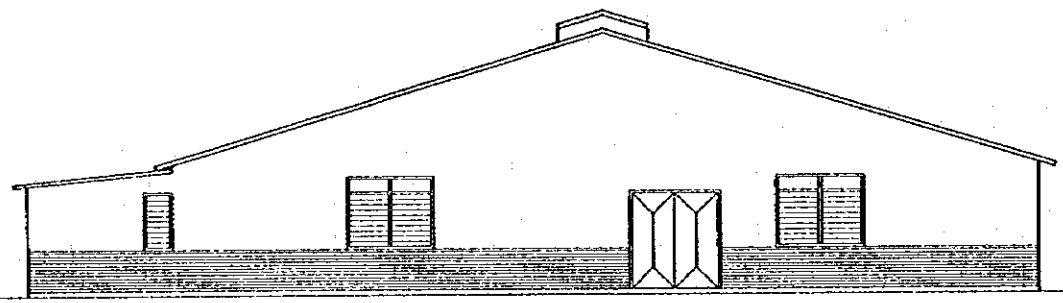
THE PROJECT FOR IMPROVEMENT OF NAKAWA VOCATIONAL TRAINING INSTITUTE WORKSHOP C -EXPANSION- GROUND FLOOR PLAN 6



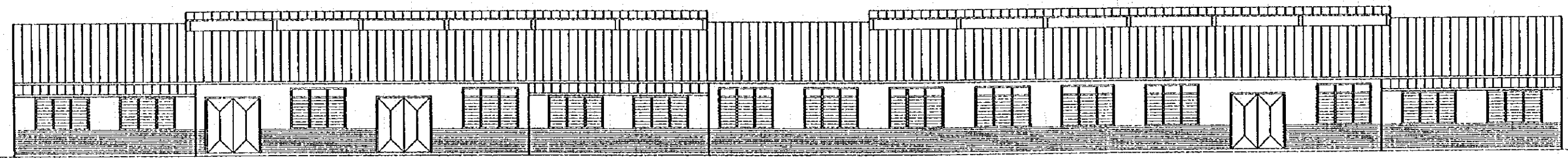
SOUTH WEST ELEVATION



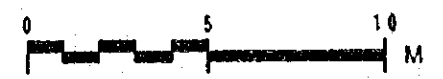
SOUTH EAST ELEVATION

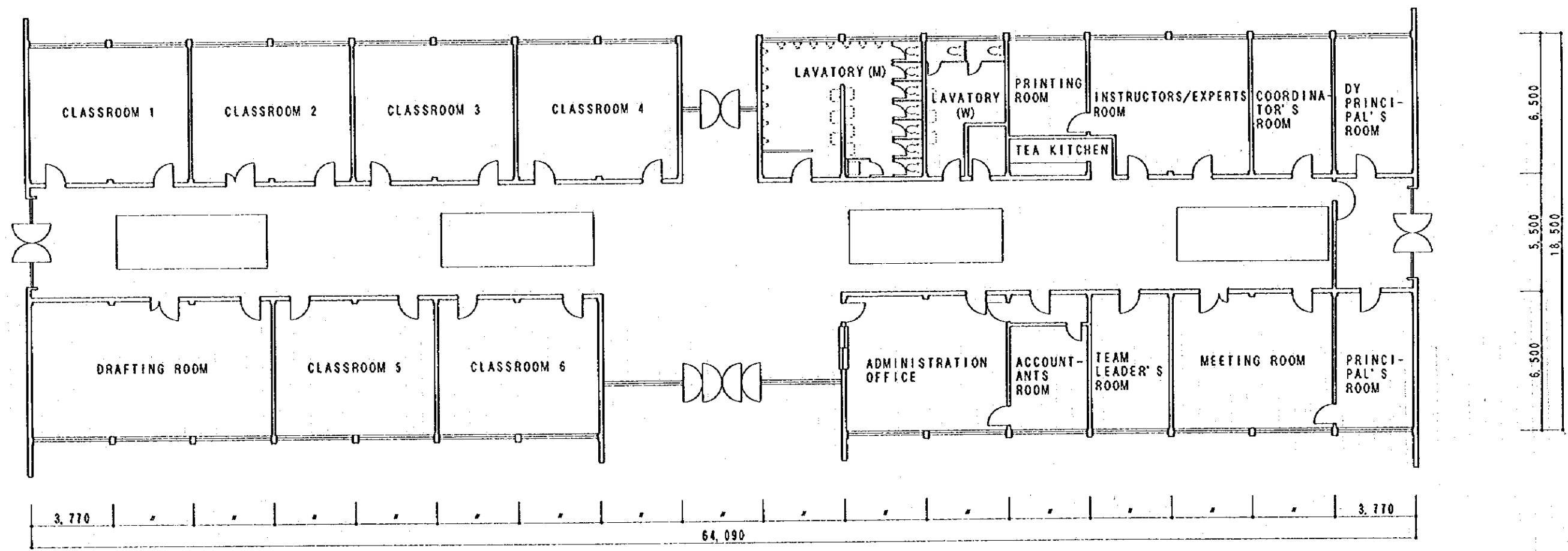


NORTH WEST ELEVATION



NORTH EAST ELEVATION



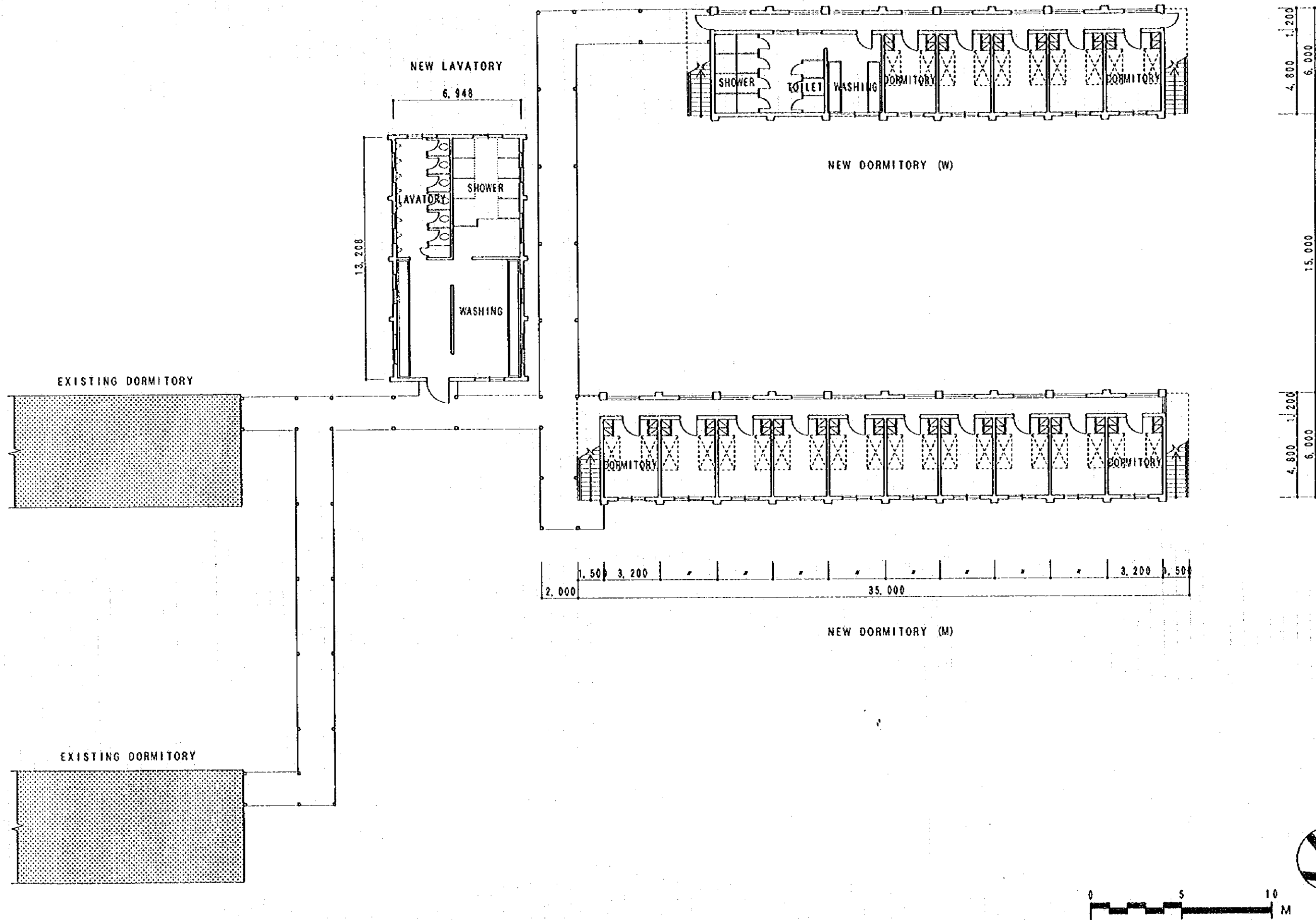


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NAKAWA VOCATIONAL TRAINING INSTITUTE

ADMINISTRATION/CLASSROOM BLDG.
-REHABILITATION-

GROUND FLOOR PLAN

8

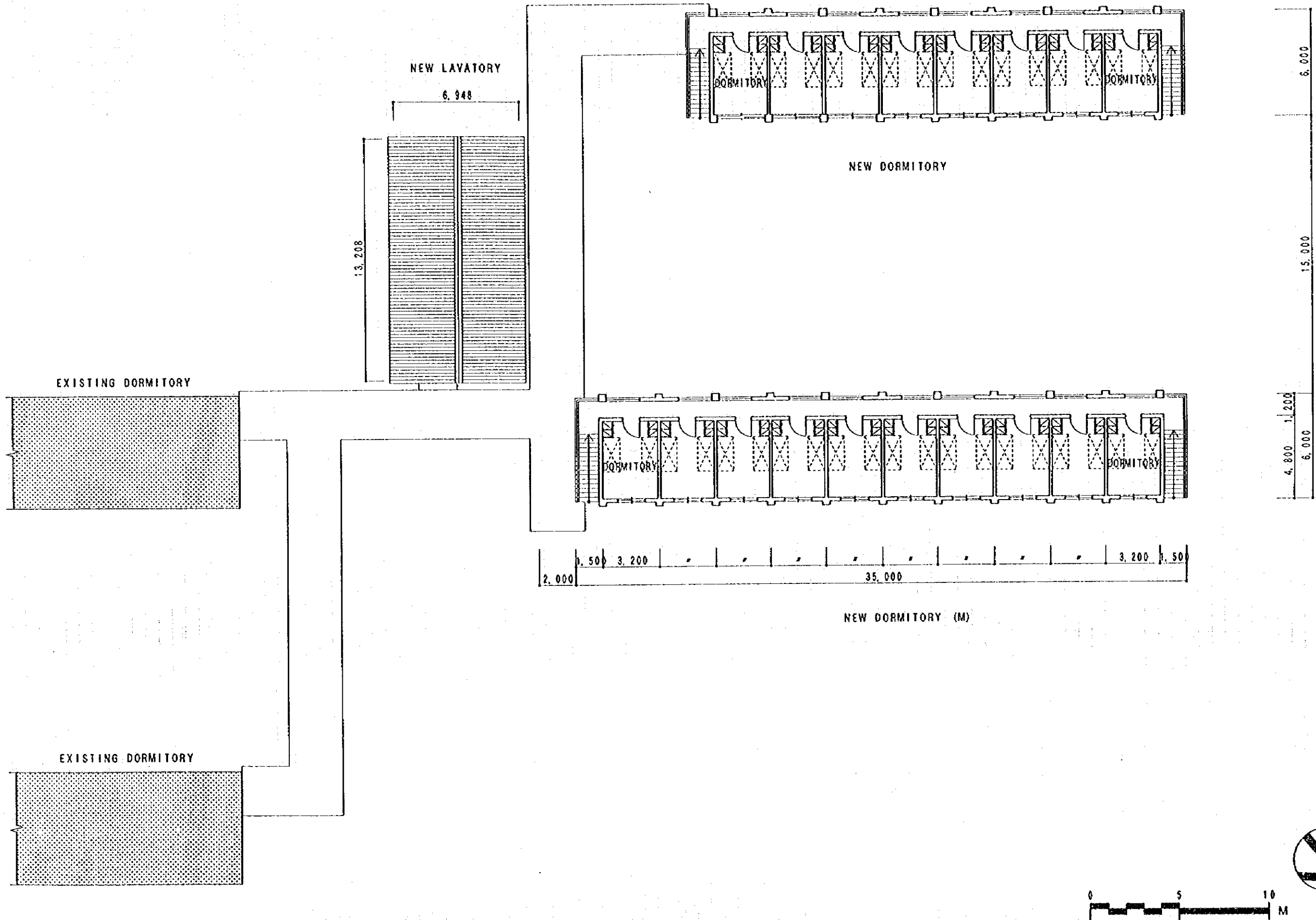


THE PROJECT FOR IMPROVEMENT OF
NAKAWA VOCATIONAL TRAINING INSTITUTE

NEW LAVATORY
NEW DORMITORY (M) (W) -EXPANSION-

GROUND FLOOR PLAN

9

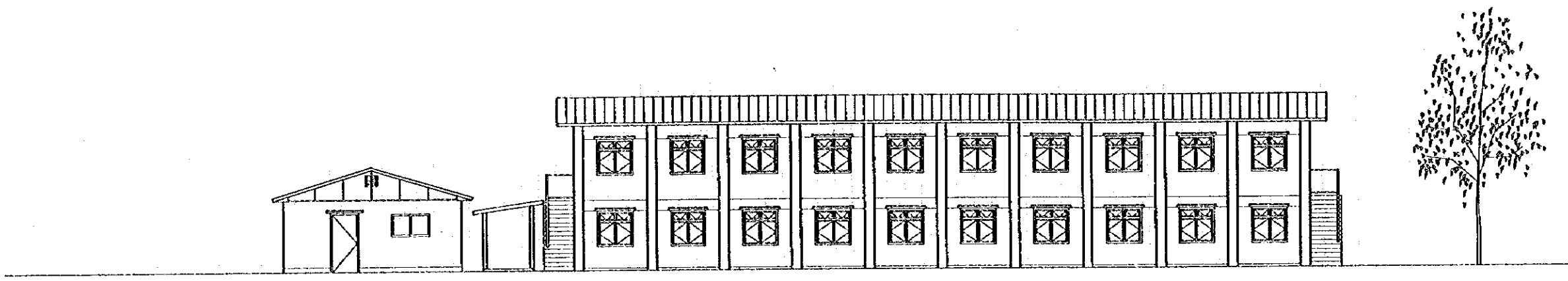


THE PROJECT FOR IMPROVEMENT OF NAKAWA VOCATIONAL TRAINING INSTITUTE

NEW LAVATORY -EXPANSION- FIRST FLOOR PLAN

NEW DORMITORY (M) (W)

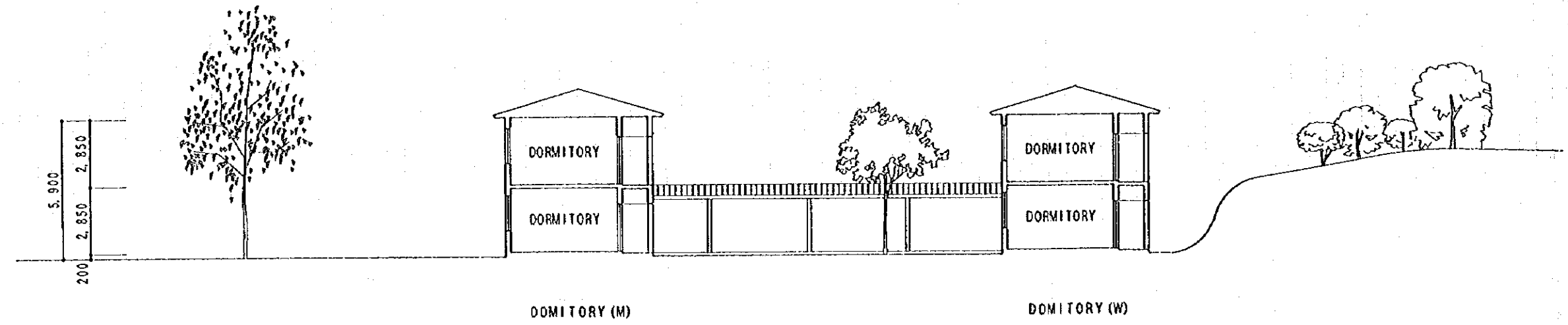
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NEW LAVATORY

DOMITORY (M)

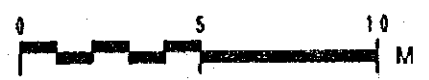
NORTHEAST ELEVATION



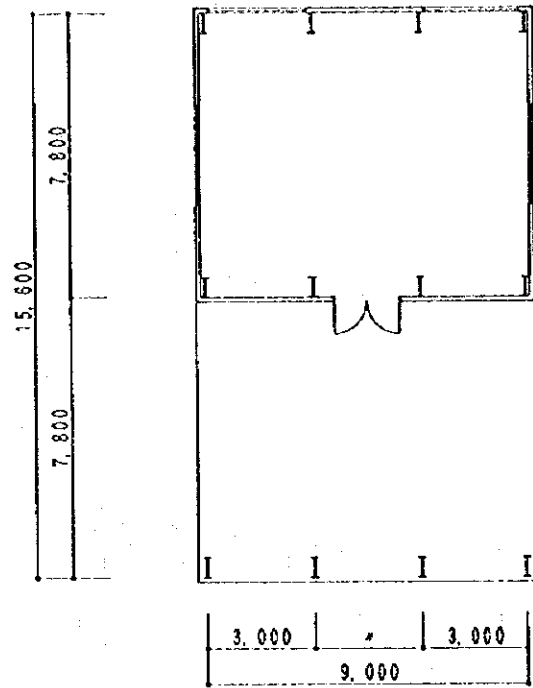
DOMITORY (M)

DOMITORY (W)

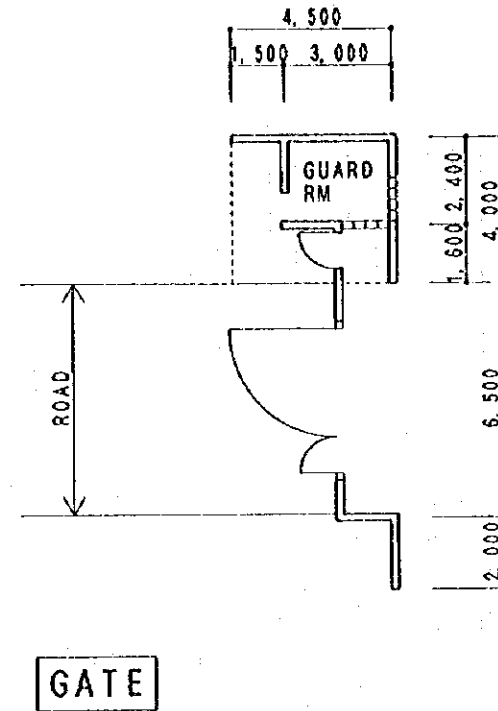
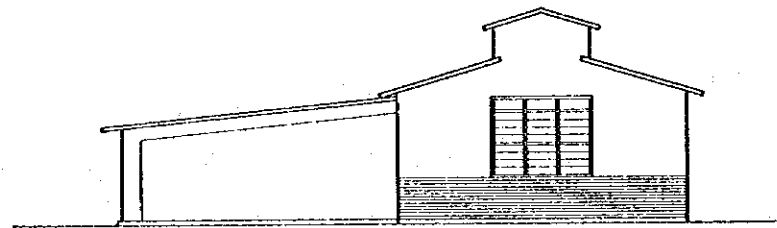
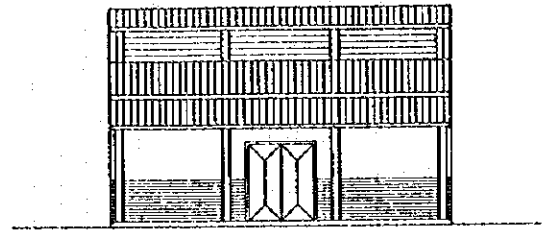
SECTION



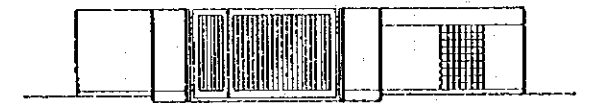
<p>THE PROJECT FOR IMPROVEMENT OF NAKAWA VOCATIONAL TRAINING INSTITUTE</p>	<p>NEW LAVATORY NEW DOMITORY (M) (W) -EXPANSION-</p>	<p>ELEVATION SECTION</p>	<p>11</p>
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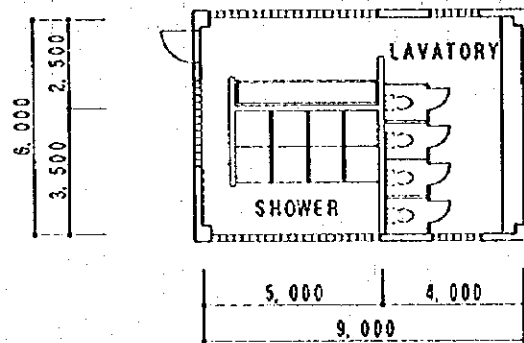
FORGE



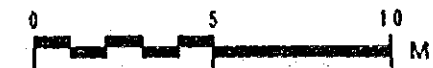
GATE



ELEVATION



LAVATORY



CHAPTER 3 IMPLEMENTATION PLAN

CHAPTER 3 IMPLEMENTATION PLAN

3-1 Implementation Plan

3-1-1 Implementation Concept

The Project is to be implemented under the Government of Japan's grant aid cooperation after the signing of an Exchange of Notes by the governments of both countries, subject to the Government of Japan's approval for it at a Cabinet meeting. Basic matters in implementation of the Project are described as below.

(1) Construction Period

The Project includes the construction work, which consists of 3000m² expansion and 4700m² rehabilitation, and the equipment work, which is to procure and install equipment in the workshops, classrooms etc. Necessary period for both construction work and equipment work is concluded to be 12 months in consideration of contents and scale of each work, condition of the project site, local construction situation, required construction technology as well as the basic policy to continue training activities during construction period.

(2) Contracting System

Judging from the size of both construction work and equipment work as well as the relations between both works, it is appropriate to contract the two works separately. Contractors for each work shall be selected by conditional public tender to be held in Japan.

(3) Implementation System of the Ugandan Side

The Project is to be implemented under the jurisdiction of Ministry of Labour and Social Welfare of the Republic of Uganda. The Directorate of Industrial Training of the Ministry will be the party to be responsible for implementing the Project. Permanent Secretary of the Ministry will be in charge of necessary procedures such as consultant contract, construction contract and banking arrangement of the Project. The Directorate will also take necessary measures for importing construction materials and equipment such as customs clearance as well as allocation of budget for customs duties. Nakawa Vocational Training Institute, to which the Project will be extended, will be in charge of providing necessary information and technical advice in relation to the training and will execute the Ugandan side work.

Ministry of Finance and Economic Planning is the agency representing the Ugandan side to be in charge of implementing grant aid projects. In the Ministry, Asia & Pacific Department is in charge of the Project.

Regarding building permit which is required for building construction, Ministry of Land, Housing and Urban Development will give instructions as well as suggestions in terms of facility planning to the Directorate of Industrial Training.

(4) Execution System

1) Consultant

Immediately after signing of the Exchange of Notes between both governments, the Directorate of Industrial Training will conclude a design and supervision contract with a selected Japanese consultant and have the agreement verified by the Government of Japan. The

consultant is to prepare detail design drawings based on the contents of the basic design study report and then carry out tenders as well as construction supervision.

As there are a number of small scale architectural consultants organized in Uganda, including European firms, it is possible to utilize their assisting services in producing detail drawings, estimation and supervision of construction work.

2) Contractors

Contractors for both the construction work and the equipment work are to be selected from among qualified Japanese companies by public tender. The Directorate of Industrial Training is to conclude both construction contract and equipment contract with the successful tenderers respectively and have the agreements verified by the Government of Japan. It is possible for Japanese contractors to utilize local subcontractors in recruiting labors, procurement of local materials, customs clearance etc. It is not necessary to dispatch Japanese engineers for supervision of specific works except for installation and adjustment of equipment. However, dispatching engineers from the third countries such as Kenya and European countries should be taken into consideration.

3-1-2 Implementation Conditions

Following points shall be noted in implementation of the Project

(1) Minimum Interruption of Training Activities during Construction

Though the construction work will be conducted within the premises of Nakawa Vocational Training Institute, training activities will continue as

much as possible in accordance with the annual training schedule. In order to minimize the period while training activities will be interrupted, completion schedule of each building as well as starting time of rehabilitation work of the existing buildings will be specified in the tender documents besides the progress schedule which is restricted by the Japanese fiscal year. Contractor is required to fulfill the construction schedule of each building and at the same time to take necessary measures for safety of facility users such as instructors and trainees.

(2) High Percentage of Procurement in the Third Countries

Construction materials which can be procured in Uganda are limited to sand, gravel, bricks, roof tiles and concrete blocks. Though cement is produced in the country, supply is not sufficient to meet country's demand. Shortage is covered by import from surrounding countries such as Kenya and Tanzania. Therefore, cement costs two times as expensive as those in Japan. Other items such as aluminum sash, glass, steel and ceiling boards are imported and available in market but are difficult to be procured in large quantity.

With the background stated above, the ratio of the procurement in the third countries is high in the Project such as procurement of steel, aluminium sash, re-bar and paint in Kenya and part of training equipment in UK. Therefore, it is necessary to work out a procurement plan in consideration of procurement condition in the third countries, transport method, packing method and required time for procurement.

(3) Complex Procedures of Customs Clearance and Tax Exemption

Materials and equipment imported to Uganda are transported on road via Kenya. Procedures of customs clearance and tax exemption for those are to be done in Uganda. Tax exemption procedure and commission vary depending

upon origin and procurement method. Therefore, following points shall be noted upon importing materials and equipment to Uganda.

1. In case of procurement in Kenya, necessary procedure shall be completed in Uganda and order shall be made in Uganda as well. This will enable import to be exempted from VAT and other taxes in Kenya.
2. In case of importing materials and equipment from Japan or other third countries via Kenya, security bond equivalent to custom duties shall be submitted to the customs of Kenya. This will enable import to be exempted from customs duties. Security bond will be released by Certificate of Re-export issued by the Kenyan government.

3-1-3 Scope of Works

(1) Scope of Works

The Project is to be implemented through close cooperation between the Government of Japan and the Government of Uganda within the framework of grant aid extended by the Government of Japan. It is reasonable for the Governments of the two countries to undertake scope of works as shown follows.

1) The Work to be done under Japan's Grant Aid

1. Facilities

- Construction of the buildings described in this basic design study report
- Electrical, mechanical and sanitary installations

2. Equipment

- Equipment procurement work
- Equipment installation work

3. Infrastructure

- Substation
- Water supply and drainage work within the premises
- Telephone exchange system

4. Exterior works

- Roads and parking lots within the premises
- Septio tank
- Outdoor lightings

5. Other work related to the above work

- Transportation of equipment and materials from Japan and third countries to Uganda
- Necessary procedure for transportation

2) The Work to be done by the Government of Uganda

1. Site and exterior works

- Securing the site for the project
- Removing existing structures, trees and so on from the project site and leveling of site
- Construction of access roads to the project site
- Construction of exterior structures including fence
- Planting and gardening

2. Infrastructure

- Supply of electricity up to the site
- Installation of telephone lines up to the MDF
- Water supply up to the reservoir and connection of the drainage line

3. Preparatory work

- Provision of sites for temporary construction site office, workshops and material storage places
- Installation of temporary electricity supply and telephone lines
- Relocation of existing equipment as preparation for the rehabilitation work of the existing buildings.

4. Fixtures and furniture

- Fixtures, curtains, furniture, etc. other than those supplied under the grant aid of the Government of Japan

5. Procedural work and its expenses borne by the Ugandan side

- Banking arrangement expenses
- Tax exemption procedure expenses
- Prompt action related to customs clearance and inland transportation
- Necessary measures for exempting the Japanese nationals engaged in the implementation of the Project from customs duties, domestic taxes and other fiscal levies in accordance with the verified agreement
- Arrangement to expedite acquisition of visas, customs clearance, and any other formalities that may be necessary for the entry of Japanese nationals engaged in the implementation of the project
- Maintenance and management expenses for ensuring that the facilities constructed and the equipment installed are operated properly and effectively
- Expenses for the construction-related procedures

3-1-4 Consultant Supervision

In accordance with Japan's grant aid system, the Japanese consultant firm will conclude a consultant agreement with the implementing organization of the Government of Uganda. After concluding the agreement, the consultant will work out detail design documents and supervise the construction work in compliance with the provisions of the consultant agreement. Construction supervision is aimed at ensuring that the construction work will be carried out in accordance with the design documents, and at providing direction, technical advice and coordination throughout the term of services from a fair point of view for the proper implementation and quality control of the construction work. The construction supervision service includes the followings.

1. Assistance in tendering

The consultant shall prepare the documents necessary for tendering the construction work and the equipment procurement/installation work, and assist the client in carrying out tasks such as the public announcement of invitation to tender, acceptance of applications, prequalification, distribution of documents to the tenderers, acceptance of tender, evaluation of the tender results. And the consultant also advise the client on concluding the contract.

2. Instruction, advice and coordination to the contractor

The consultant shall examine the construction schedule, construction plan, the building materials procurement plan and the equipment procurement/installation plan, and shall give the instruction, advice and coordination to the contractors.

3. Examination and approval of shop drawings and manufacturing drawings

The consultant shall examine and approve the shop drawings, manufacturing drawings and other relevant documents submitted by the contractors.

4. Confirmation and approval of building materials and equipment

The consultant shall confirm the consistency with the contract documents of the building materials and equipment which the contractors propose to procure, and shall approve their adoption.

5. Plant inspection

The consultant shall inspect the building materials and equipment at the manufacturers' factories to ensure their quality and performance.

6. Reporting on progress of the construction work

The consultant shall grasp the actual conditions of the construction site and progress, and report them to both Governments.

7. Completion inspection and test operations

The consultant shall inspect the completed facilities and the installed equipment, and make a test run of each piece of equipment, in order to ascertain that all the works of facilities and equipment are completed in compliance with the provisions of the contract documents, and shall submit the Inspection Certificate to the Ugandan side.

8. Training in operation of the equipment

Some equipment installed under the Project will require considerable operating skills as well as good knowledge of their maintenance. For

this reason, it will be necessary to have the engineers of the Ugandan side receive on-site trainings in proper equipment operation and troubleshooting techniques during the installation/adjustment/test-run period. The consultant shall give instruction and advice concerning the training programme.

Judging from the scale of the Project, it is advisable that, in carrying out the aforementioned tasks, the consultant shall station one architect/engineer to Uganda throughout the term of works. The consultant shall also dispatch necessary engineers to the site at relevant occasions for inspection, instruction and coordination, and at the same time assign necessary engineers in Japan to establish a communication and backup system. The consultant shall report the progress of the works, payment procedures, completion of the construction of the facilities and installation of the equipment, and any other relevant matters to the competent agencies of the Japanese Government.

3-1-5 Procurement Plan

(1) Guidelines for Procurement of Building Materials

1) Methods of Procurement of Building Materials

The following different ways of procurement of building materials were studied as possibilities for this project.

Table 3-1 Materials Procurement Method

Methods of Procurement		Main materials and equipment	Remarks
Classification	Method		
Local procurement	1. Procurement of Ugandan-made products	Brick, roof tile, concrete block, cement	Procurement of these products in the country is exempted from taxes. This method is suited particularly for the procurement of bricks and tiles, which are used in large quantities.
	2. Procurement of imported products in the Ugandan market	Cement, paint, sash, reinforcing bar	These products are expensive since their prices include import duties. Since these products are procured through local distributors, this method is suited for the procurement of products which require maintenance services.
Import	3. Procured in Kenya and transported to Uganda	Steel structure, aluminum sash, glass, paint, cement	Products produced or processed in Kenya are exempted from all Kenyan taxes and charges when they are imported into Uganda under the East African countries' common trade promotion policy.
	4. Procured in third countries, processed in Kenya and transported to Uganda	Steel frame, aluminum sash	In case of imported materials processed by Kenyan processors, their export to Uganda is exempted from Ugandan taxes, including import duties.
	5. Direct import from Japan and third countries	Reinforcing bar, aluminum sash, hardware, generator, training equipment	Imported products transported through Kenya are exempted from all Kenyan taxes and charges if they are bonded.

2) Procurement Guidelines and Points to be Noted

Materials and equipment for use in this project are to be procured in accordance with the following guidelines.

1. Local procurement

In principle, building materials for this project should be procured in Uganda so that they can be easily repaired, managed and maintained by the Ugandan side after the completion of the facilities. Heavy building materials such as bricks and tiles, which are to be used in large quantity, should be procured in the country from the standpoint of advantage in transportation. In case of training equipment, which

require maintenance services by the local distributors such as copiers and electrical home appliances, should be imported ones that can be procured in the country.

2. Import

Those materials and items of equipment which are not available in Uganda, which can be procured locally but are judged to be badly defective in terms of quality or which are in short supply and expensive in Uganda should be procured in Kenya and other third countries. Uganda and Kenya are promoting their joint trade promotion policy and as a result, products imported from Kenya into Uganda are exempted from Kenyan taxes and custom duty. In case of importing products from Kenya, the Japanese contractors are required to arrange the prescribed procedures for tax exemption.

(2) Materials / Equipment Procurement Plan

Materials and equipment to be used in the project are planned to be procured in the countries as listed in the following table.

1) Materials Procurement Plan

Table 3-2 Procurement Plan of Building Materials

Work	Material/Equipment	Countries			Remarks
		Uganda	Japan	Third country	
Building Construction	Cement	○			} Ready-mixed concrete is available
	Sand	○			
	Gravel	○			
	Reinforcing bar			Kenya	Ugandan-made reinforcing bars are defective in terms of quality.
	Steel structure			Kenya	Not produced in Uganda.
	Form	○			Timber form is available in the country.
	Brick	○			Can be used for partition walls. Bricks are produced in large quantities in the country.
	Concrete block	○			Can be used for partition wall
	Terrazzo tile	○			Used as flooring material in the country. Types of terrazzo tiles are limited.
	Ceramic tile			Kenya	A few types of ceramic tiles are produced in Kenya
	Glass			Kenya	Available in Kenya.
	Roof tile (cement tile)	○			Widely used in the country.
	Metal roofing material			Kenya	Produced and sold in Kenya.
	Timber	○			Available in the country.
	Steel fittings			○	Supplies of Ugandan-made metal fittings are not steady. They are of poor quality.
Wooden fittings	○			Wooden doors are produced in the country.	
Hardware		○		Not produced in the country.	
Paint	○			For easy maintenance locally procured	
Mechanical Sanitary Work	Pump			UK	Not produced locally
	Fan			UK	Ditto
	Sanitary fittings			Kenya	European-made products are available
	PVC pipe	○			Kenya-made products are available
	Galvanized steel pipe	○			Ditto
	Water tank			Kenya	Quality is reliable
	Hose reel			Kenya	Imported products are available
	Fire extinguisher			Kenya	Ditto
Electrical Work	Distribution panel			Singapore	Quality is reliable
	Generator	○		South Africa	Not produced locally
	Lighting fixture	○			European-made are available
	Telephone exchange	○			European-made are available
	Fire alarm system	○			Ditto
	Wiring conduit	○			Kenya-made are available
	Wire	○			Ditto

2) Training Equipment Procurement Plan

Table 3-3 Procurement Plan of Training Equipment

Course	Equipment	Countries			Remarks
		Uganda	Japan	Third country	
Motor Vehicle	Brake/Speed meter tester		○		Most of vehicles of which trainings conducted are Japan made
	Headlight tester		○		Ditto
	Chasis dynamometer		○		Ditto
	Side sliptester		○		Ditto
Electricity	IVR		○		Not produced locally. Quantity is too small to be procured in the third countries.
	Cynchroscope			UK	Maintenance service is available locally.
	M-G set		○		Special equipment only for training.
	Insulation voltage resistance tester		○		Not produced locally. Quantity is too small to be procured in the third countries.
	Washing machine	○			Available locally
	Electric drill	○			Ditto
Welding	AC arc welder		○		Not produced locally. Quantity is too, small to be procured in the third countries.
	Gas manifold system		○		Special equipment only
	Shearing machine		○		Japan-made is international
	Automatic gas cutting machine		○		Not produced locally. Quantity is too, small to be procured in the third countries.
	Beld sander	○			Available locally
Machining	Precision lathe			UK	UK-made is common locally and advantageous in cost
	Radial drilling machine			UK	Ditto
	Vertical milling machine		○		Japan made is worldwide spread.
	Shaper			UK	UK-made is common locally and advantageous in cost
	Disk grinder	○			Available locally
Common	Work bench/stool	○			Available locally
	Storage cabinet	○			Imported steel products available locally
	Parts cabinet			Kenya	Available in Kenya
	Locker			Kenya	Ditto
	Dormitory bed	○			Available locally

3-1-6 Implementation Schedule

When the Exchange of Notes concerning the implementation of the Project is concluded between the Government of Japan and the Government of Uganda, the construction and equipment works will be implemented with the following procedures.

1. Detail design

The consultant shall prepare the design documents such as detailed design drawings, specifications and tender documents based on the contents of the basic design study report after the conclusion of the consultant agreement. The consultant shall also obtain approval on the above-mentioned documents from the Ugandan side after consultation with them. The time required for completing the procedure is estimated at three months.

2. Tendering

The contractors to take charge of the construction work and the equipment works will be selected separately by tender. The tender work includes tender announcement, prequalification, acceptance of tenders, evaluation of the tenders, designation of the contractors and conclusion of the contracts. The time required for completing this procedure is estimated at about one and a half months.

3. Construction work and equipment work

Judging from the contents and scale of the work and the actual situation of the local construction industry, it will take 12 months to complete the entire project, including the equipment work, provided

the procurement of building materials and the customs clearance of imported articles proceed smoothly.

The overall implementation schedule from the conclusion of the Exchange of Notes to the completion of the project which includes above-mentioned factors will be as shown in table 3-4.

Table 3-4 Implementation Schedule

Month		1	2	3	4	5	6	7	8	9	10	11	12
Detail design		(Detail design)			(Correction)								
					(in Uganda)								
					(Tender)								
					(in Uganda)			(Construction contract)					
		(Total 6.0 months)											
Construction work	1. Workshop (A) (Existing)							(Rehabilitation)			Equipment Installation		
	2. Workshop (B) (Existing)				(Rehabilitation)						(Equipment Installation)		
	3. Workshop (C) (New)				(Construction)						(Equipment Installation)		
	4. Administration/ Lecture Building (Existing)										(Rehabilitation)		
	5. Dormitory (Existing)										(Rehabilitation)		
	6. Dormitory (New)							(Construction)					
	7. Others										(Construction)		
		(Total 12.0 months)											
Equipment procurement & installation work		(Preparation)											
		(Manufacturing/Procurement)											
								(Transport)					
											(Installation/Adjustment)		
		(Total 12.0 months)											
		(Training)											

3-1-7 Obligations of Recipient Country

It was agreed in the Minutes of Discussions that the following necessary measures shall be taken by the Government of Uganda on the condition that the Grant Aid by the Government of Japan is extended to the Project.

1. To provide data and information necessary for the Project;
2. To secure a land for the Project;
3. To clear, level and reclaim the site for the Project prior to the Project implementation;
4. To provide proper access road to the Project area;
5. To undertake gardening, fencing, exterior lighting, and other incidental outdoor works in and around the Project site;
6. To provide the following incidental facilities to the Project;
 - (1) Electricity distributing line to the site
 - (2) City water distribution main to the site
 - (3) Drainage main to the site
 - (4) Telephone trunk line to the site
 - (5) General furniture such as carpet, curtain and others
 - (6) Other incidental facilities necessary for the Project realization;
7. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission;
8. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in Uganda and prompt internal transportation

therein of the materials and equipment for the Project purchased under the Grant Aid;

9. To exempt Japanese juridical and physical nationals involved in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Uganda with respect to the supply of the products and services under the verified contracts.
10. 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 Uganda and stay therein for the performance of their work;
11. To provide necessary permissions, licenses and other authorizations for the Project, if necessary;
12. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project; and
13. To bear all the expenses other than those to be borne by the Japan's Grant Aid within the scope of the Project.

3-2 Operation and Maintenance Plan

Total cost for operation and maintenance of the institute to be borne by the Ugandan side is estimated in the following table.

Table 3-5 Operation and Maintenance Expenses

Item	Cost
1. Facility Operating Expenses -----	168,053,000 Ushs/year
① Electricity	110,260,000
② Telephone	7,760,000
③ Water	8,200,000
④ LP Gas	10,153,000
⑤ Fuel	31,680,000
2. Facility Maintenance Expense -----	19,510,000 Ushs/year
① Building Maintenance Expense	7,667,000
② Facility Equipment Maintenance Expense	3,843,000
③ Training Equipment Maintenance Expense	8,000,000
Sub-total	187,563,000 Ushs/year
3. Training Material Expense	363,384,000 Ushs/year
Total	550,947,000 Ushs/year

(1) Facility Operating Expense

① Electricity charges 110,260,000 Ushs/year

• Max. electricity demand

Item	Demand	Simul-use ratio	Max. consumption
Lighting, socket	200 kW	60 %	120 kW
Ventilation	20 kW	30 %	6 kW
Sanitary facility	30 kW	30 %	9 kW
Equipment	1,500 kW	40 %	600 kW
Others	50 kW	20 %	10 kW
Total			745 kW

- Charges

- Basic charge

$$745\text{kW} \times 12\text{month/year} \times 10,000 \text{ Ushs} = 89,400,000 \text{ Ushs/year}$$

- Unit charge

$$745\text{kW} \times 0.2 \times 8\text{hours} \times 250\text{day/year} = 298,000 \text{ kWh/year}$$

$$298,000 \text{ kWh/year} \times 70 \text{ Ushs/kVA} = 20,860,000 \text{ Ushs/year}$$

$$\text{Total} \quad \quad \quad 110,260,000 \text{ Ushs/year}$$

② Telephone charges 7,760,000 Ushs/year

Assuming ten lines increased, and 68 officers will use telephone.

- Exchange line rental

$$8,000 \text{ Ushs/line} \times 10\text{line} \times 12\text{month/year} = 960,000 \text{ Ushs/year}$$

- Local calls

$$68\text{persons} \times 4\text{min./time} \times 2\text{time/day} \times 250\text{day/year}$$

$$= 136,000 \text{ min./year}$$

$$136,000\text{min./year} \times (100 \text{ Ushs}/2\text{min.}) \times 2 = 6,800,000 \text{ Ushs/year}$$

- Total = 7,760,000 Ushs/year

③ City water charges 8,200,000 Ushs/year

This facility is not provided with water meter and its water consumption is fixed at 360t per month.

- Water charge

$$300 \text{ t/month} \times 2,280 \text{ Ushs/t} \times 12\text{month} = 8,208,000 \text{ Ushs/year}$$

$$\approx 8,200,000 \text{ Ushs/year}$$

④ LP Gas 10,153,000 Ushs/year

- Gas consumption per meal = 800 kcal/meal

- Meals per day

Trainee	252 persons	$\times 3\text{meal/day} =$	756 meal/day
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Staff	107 persons	$\times 1\text{meal/day} =$	107 meal/day
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Total		$=$	863 meal/day
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- Charge

$$863 \text{ meals} \times 800 \text{ kcal/meal} \times 250 \text{ day/year} + 11,900 \text{ kcal/kg} \times 700 \text{ Ushs}$$

$$= 10,152,941 \text{ Ushs}$$

$$\approx 10,153,000 \text{ Ushs}$$

⑥ Fuel 31,680,000 Ushs/year

- Over 2.0ℓ: 2 Nos.

$$760,000 \text{ Ushs/car} \cdot \text{month} \times 2 \text{ cars} \times 12 \text{ month/year}$$

$$= 18,240,000 \text{ Ushs}$$

- Below 2.0ℓ: 2 Nos.

$$560,000 \text{ Ushs/car} \cdot \text{month} \times 2 \text{ cars} \times 12 \text{ month/year}$$

$$= 13,440,000 \text{ Ushs}$$

(2) Facility Maintenance expenses

① Facility maintenance expense 7,667,000 Ushs/year

Assuming average maintenance expense of 20 years to be
1,000 Ushs/m²·year.

$$7,667 \text{ m}^2 \times 1,000 \text{ Ushs/m}^2 \cdot \text{year} = 7,667,000 \text{ Ushs/year}$$

② Facility equipment maintenance expense 3,800,000 Ushs/year

Assuming average maintenance expense of 20 years to be
500 Ushs/m²·year.

$$7,667 \text{ m}^2 \times 500 \text{ Ushs/m}^2 \cdot \text{year} = 3,834,000 \text{ Ushs/year}$$

③ Training equipment maintenance 8,000,000 Ushs/year

(3) Training material 363,384,000 Ushs/year

- Upgrading training course, Apprenticeship training course

$$7,000 \text{ Ushs/person} \cdot \text{day} \times 12 \text{ person/course} \times 7 \text{ course} \times 150 \text{ day/year}$$

$$= 88,200,000 \text{ Ushs}$$

- Basic Training course

$$7,000 \text{ Ushs/person} \cdot \text{day} \times 24 \text{ person/course} \times 7 \text{ course} \times 234 \text{ day/year}$$

$$= 275,184,000 \text{ Ushs}$$

(4) Others (salary, allowance) 472,320,000 Ushs

① Salary 110,900,000 Ushs

(Annual total for 107 public servants)

② Allowances 323,130,000 Ushs

• Rank : 21,240,000 Ushs

• Overtime : 186,480,000 Ushs

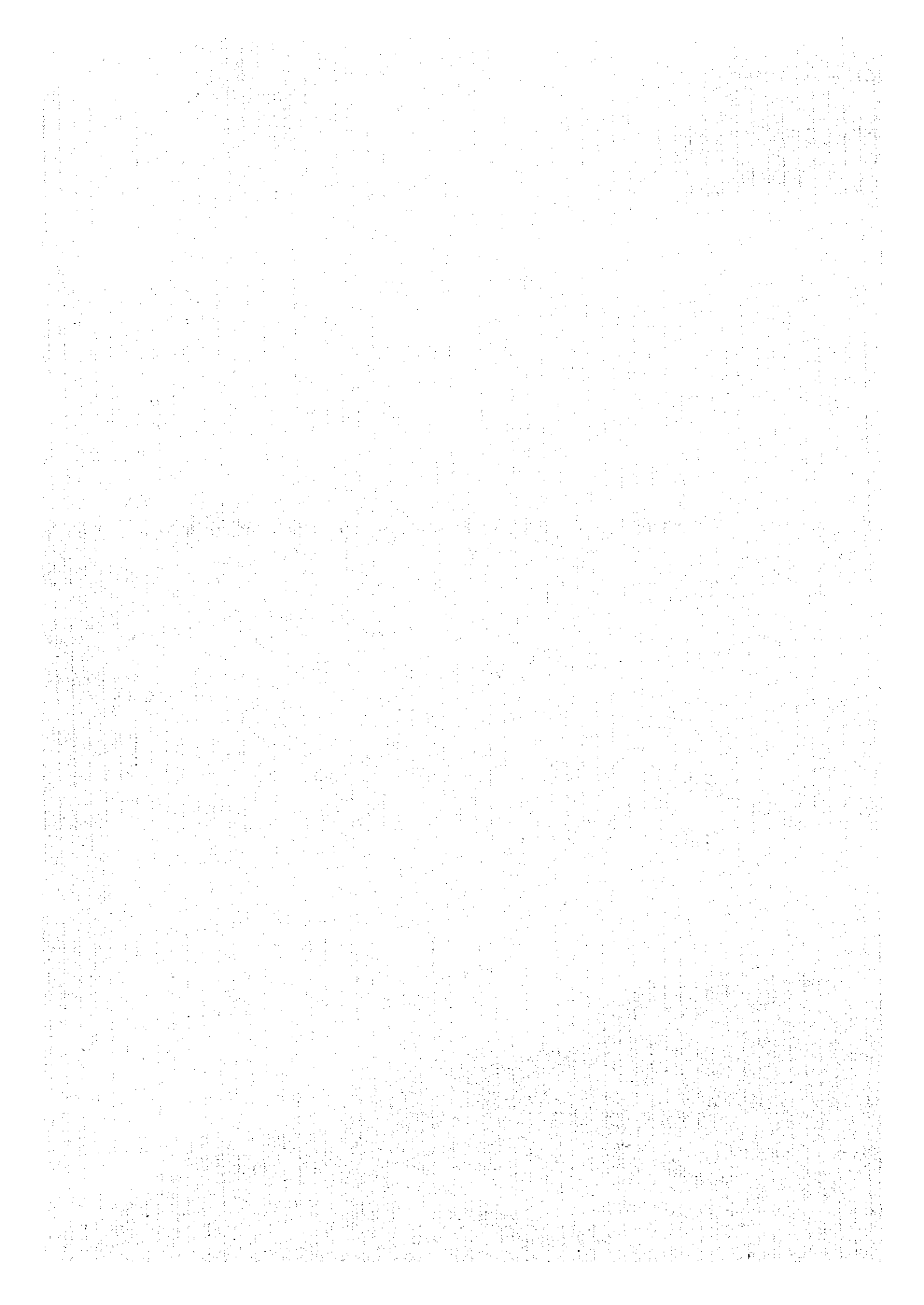
• Meal : 60,450,000 Ushs

• Housing : 54,960,000 Ushs

③ In-service training 38,280,000 Ushs

(Staff training in and out of the country)

CHAPTER 4 Project Evaluation and Recommendation



CHAPTER 4 PROJECT EVALUATION AND RECOMMENDATION

4-1 Project Effect

(1) Expected Effects

When the Project is implemented and consequently the facilities and equipment are operated and managed properly by the Ugandan side, it is expected that the Project will result in the following positive effects and improvements.

1) Opening the "Basic Training Course"

In Uganda demand for skilled workers is increasing in keeping with the growth of the country's industry. And at the same time social demand for vocational training, especially basic training for O level secondary graduates, is increasing.

Nakawa Vocational Training Institute holds upgrading training course and apprenticeship training course for workers of companies and factories at present. However, the Institute has a difficult situation to open new training courses and also to increase number of trainees due to its superannuated facility and equipment.

This Project includes rehabilitation and expansion of the facilities and equipment of Nakawa Vocational Training Institute. Implementation of the Project will make it possible for the institute to open the two year "basic training" course which is planned to enroll annually 84 general secondary school graduates as trainees.

Besides Nakawa Vocational Training Institute, there are only four governmental vocational training institutes where training courses in industrial fields are offered. Therefore, founding basic training

course at the institute will contribute to expanding the training opportunity for minors as well as to human resource development.

2) Expansion of Training Fields

Nakawa Vocational Training Institute, which was founded in 1971, is offering training courses in the fields of machining, electricity, welding and motor vehicle. With the background of the growth and development of the country's industry, which diversify demand for labor, the institute is now faced with a need to expand the scope of training fields.

Implementation of the Project will enable the institute to conduct training activities in the new training fields of electronics, sheet metal, carpentry in addition to the existing 4 training fields. As the result, training of 588 trainees in totaling 7 training fields can be achieved annually, which is expected to contribute to supply of labor to the Ugandan industry.

3) Training of Trainees from Rural Area

Except for Nakawa Vocational Training Institute, other governmental training institutions have no accommodation facilities, and therefore, it is difficult to enroll trainees from rural area.

The Project includes construction of new dormitories with sleeping accommodation for 132 trainees in addition to rehabilitation of the existing dormitories. As the result, approximately 200 trainees will be accommodated in total. Thus it is possible to accommodate about 80 percent of the trainees who will be enrolled in the institute simultaneously and consequently to expand the opportunity for the trainees from rural area to take training courses.

Measures taken under the Project to resolve the present problems will be limited to those related to facilities and equipment. However, when Nakawa Vocational Training Institute's training facilities and equipment are improved, the number of trainees accepted will be increased and the training fields will be expanded. This will promote bringing up skilled workers and in turn is expected to contribute to the further growth of Uganda's industry.

(2) Verification of the Appropriateness of the Project

1) Possibility of Enlistment of General Secondary School Graduates

Nakawa Vocational Training Institute will open a new two-year "Basic Training Course" when this project is completed. The course is targeted for training O level secondary school graduates and its tuition fees will be borne by the trainees themselves. In order for effective operation of the facilities, enlistment of a sufficient number of trainees in the new "Basic Training Course" is necessary. Therefore, it is important to verify the possibility that a sufficient number of O level secondary school graduates apply for the training course.

① Number of applicants

At present, Basic Training Course is held at Lugogo Vocational Training Centre, which is located in the neighborhood of Nakawa Vocational Training Institute. The course is targeted for training O level secondary school graduates who come out annually 40,000. Basic Training Course at Lugogo Vocational Training Centre is a three-year course and its tuition fees is 65,000 Ushs for three months. Since Lugogo Vocational Training Centre is the only vocational training institute offering a basic training

course in the Kampala metropolitan area, the number of applicants is four times larger than the number of trainees accepted. Under the Project, Nakawa Vocational Training Institute is to open a two-year Basic Training Course, which is shorter than the one offered at Lugogo Vocational Training Centre. This means that the trainees of Nakawa VTI will be able to finish the basic training course earlier than those of Lugogo Vocational Training Centre by paying the equal quarterly tuition fee. For this reason, it is very likely that a larger number of O level secondary school graduates will apply for the Basic Training Course at Nakawa VTI than Lugogo.

⊗ Tuition fees

Tuition fees to be collected at Nakawa VTI shall be determined by the Industrial Training Council of the Ministry of Labour and Social Welfare taking into account the situation of the other public vocational training institutions. Tuition fees for the new Basic Training Course has not yet been decided. But the quarterly tuition fee, is expected to be 150,000 Ushs including the boarding fee (65,000 Ushs without boarding fee). In view of the fact that the amount of the quarterly tuition fee for O level secondary school is 300,000 Ushs, that for the new Basic Training Course is not considered large. The trainees can receive vocational training with a sum half of the tuition fee of O level secondary school. It is very likely, therefore, that a sufficient number of O level secondary school graduates will apply for the new Basic Training Course at Nakawa VTI.

Judging from above considerations, in terms of number of applicants to other vocational institutions and comparison of tuition fee, it is

concluded that applicants to the Basic Training Course of Nakawa VTI will be considerable number.

2) Operating System

The number of trainees will be increased and the scope of training will be expanded at Nakawa VTI through the implementation of the Project. In compliance with expansion of training activities, the institute plans to increase total number of staff members from 54 to 107. The number of instructors, in particular, is planned to be increased by 31 resulting 42 in total. The institute is planning to recruit additional instructors through newspaper advertisements. This recruit method is customary in the country and many job seekers are desirous to work in and around Kampala, the capital of the country. In addition, the Project is to be implemented under the Government of Japan's grant aid cooperation. In light of these facts, it is considered possible to recruit the necessary number of new instructors.

3) Operating Budget

The Directorate of Industrial Training estimates the budgetary provision for the operation of the Project at about 1 billion Ushs, of which about 350 million Ushs will be for personnel expenditures, 450 million Ushs for training expenditures and the remainder for facility maintenance expenditures. The Directorate of Industrial Training says that these budgetary appropriations can be secured when the Project is officially approved by the governments of the two countries. As regards the revenues, on the other hand, it is expected that Nakawa VTI will earn about 300 million Ushs in tuition fees and about 100 million Ushs from training services. However, the total sum of these

revenues will account for only about 40 percent of the total operating budget, with the result that the balance of 600 million Ushs will have to be covered by the government's budget.

Personnel and training expenditures will account for about 80 percent of the operating budget. Appropriation of these budget will be decided upon approval of the training plan. In other words, appropriation of the budget largely depends on the factors related to the government policies, such as positioning of "vocational training" in the country and its order of priority. The government of Uganda has a clear understanding of the importance and necessity of the Project and has made a definite promise to make necessary budgetary appropriations for the Project.

Thus, it is judged to be very reasonable in terms of expected benefits, the feasibility of the training programme, the project operating system and budgetary appropriations to implement the Project.

4-2 Recommendation

When the Project is implemented, the facilities and equipment of Nakawa VTI will be improved and its training fields as well as training courses will be expanded. In the institute upgrading training courses and apprenticeship training courses will be continuously held for skilled workers of private companies and basic training courses will be started for O level secondary school graduates. As a result, it is expected that an increasing number of skilled workers will be nurtured who can meet the demand for labour and the level of industrial engineering in the country will be raised, which in turn will contribute to the further growth of the country's industry.

The Project is expected to produce many benefits in terms of human resource development, and at the same time is expected to contribute to the sound socioeconomic development of the country. For this reason, it is considered reasonable to implement the Project under the Government of Japan's grant aid cooperation. The following recommendations are made for the prompt implementation of the Project and that the planned facilities and items of equipment will be operated smoothly and effectively so that the initial objective of the Project will be achieved.

(1) Securing Budgetary Appropriations for the Implementation of the Project

When the implementation of the Project is formally approved by the governments of the two countries, it is important that the Government of Uganda secure budgetary appropriations for implementation of the Project. The site preparation work and the customs clearance of materials and equipment, which are to be carried out by the Ugandan side, are important for smooth execution of the works implemented

under Japan's grant aid. It is necessary to make budgetary provision for these operations.

(2) Maintenance and Management of the Facilities and Equipment

In order for smooth execution of the vocational training, Nakawa VTI will have to endeavor for maintenance and management of the facilities and equipment to implement a proper staff assignment, to secure sufficient supplies of spare parts and supply training materials. For this reason, the Government of Uganda will have to secure the personnel and budgetary appropriations necessary for the maintenance and management of the facilities and the equipment.

(3) Prompt Formalities for Contracts and Approval Procedures

Since the Project is to be implemented within the framework of Japan's grant aid cooperation, there will be time restrictions on the Project. The Project will have to be completed by the time limit as set forth in the Exchange of Notes or by the end of the Government of Japan's fiscal year. For this reason, the Ugandan side will be required to promptly complete necessary procedures such as conclusion of the Exchange of Notes and the consultant agreement, approval of the detail design documents worked out based on the basic design study report, obtaining of government approvals, the conclusion of construction contracts, exemption of imported materials and equipment from import duties.

(4) Sound Implementation of the Project-Type Technical Cooperation

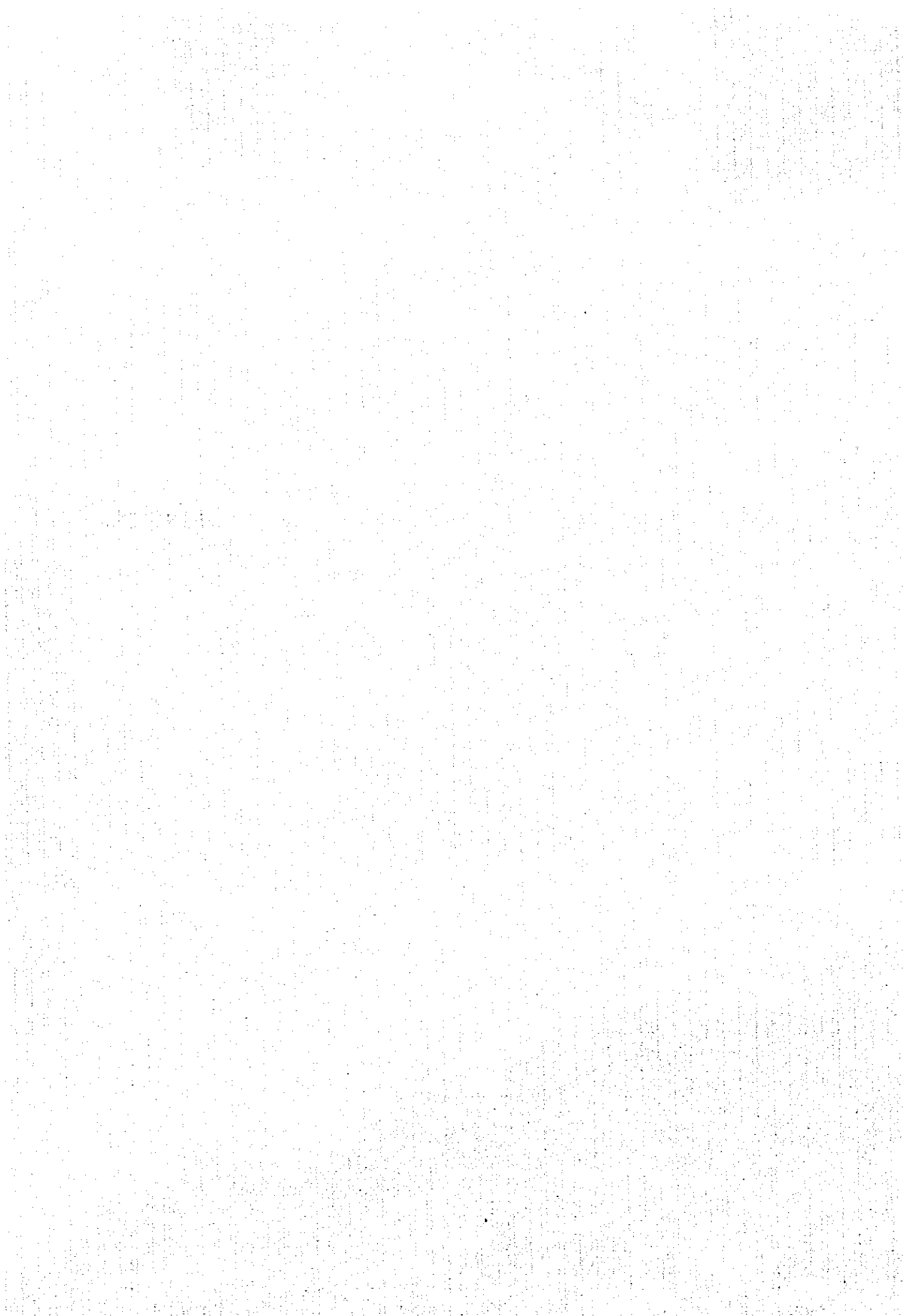
This project is aimed at supporting the project-type technical cooperation which is scheduled to be implemented in 1997. Therefore, facilities and equipment planned in the Project are those which are

indispensable for the training programme planned under the project-type technical cooperation. On the other hand, regarding construction of the facilities, construction schedule is planned in consideration of the implementation plan of the project-type technical cooperation to minimize the period while training activities are interrupted. Since the Project is planned in such close relation with the project-type technical cooperation, implementation of the Project depends considerably on whether the project-type technical cooperation will be implemented on schedule.

The equipment plan of the Project does not include ones which to be provided under the project-type technical cooperation. This is the result of the coordination with the project-type technical cooperation which clarify roles of both projects for improvement of Nakawa Vocational Training Institute. Therefore, implementation of this project is not sufficient, in terms of training equipment, for Nakawa Vocational Training Institute to expand its training courses as well as training fields.

As stated above, in order for achievement of the objective of the Project, it is indispensable that the project-type technical cooperation is implemented as planned in association with this project.

APPENDICES



1. MEMBER LIST OF THE SURVEY TEAM

(1) Basic Design Study (July 29 ~ August 28, 1995)

- ① Mr. Takahiko SUGIYAMA Leader
International Cooperation Specialist,
JICA
- ② Mr. Shinji TOTSUKA Project Coordinator
Second Basic Design Study Division,
Grant Aid Study & Design Department,
JICA
- ③ Ms. Mayumi TAKAHASHI Technical Cooperation Planner
Second Social Development Cooperation Division,
Social Development Cooperation Department,
JICA
- ④ Mr. Satoru TANOKURA Technical Advisor
International Cooperation Division,
Human Resources Development Guidance Department,
Employment Promotion Corporation
- ⑤ Mr. Takanori TANAKA Project Manager
Yamashita Sekkei Inc.
- ⑥ Mr. Kunihiko INADOME Building Construction Planner
Yamashita Sekkei Inc.
- ⑦ Mr. Kazuo TONOSHI Facilities Planner / Cost Estimator
Yamashita Sekkei Inc.
- ⑧ Mr. Koji SATO Training Equipment Planner
Yamashita Sekkei Inc.
- ⑨ Mr. Toshio SHINKO Training Equipment Planner
Yamashita Sekkei Inc.

(2) Explanation of Draft Basic Design (November 20 ~ December 1, 1995)

- ① Mr. Takahiko SUGIYAMA Leader
International Cooperation Specialist,
JICA
- ② Ms. Fujiko YOSHIDA Grant Aid Cooperation
Assistant Director,
Grant Aid Division, Economic Cooperation Bureau,
Ministry of Foreign Affairs
- ③ Mr. Takanori KAWASHIMA Technical Advisor
Deputy Director,
Overseas Cooperation Division,
Human Resources Development Bureau,
Ministry of Labour
- ④ Mr. Takanori TANAKA Project Manager
Yamashita Sekkei Inc.
- ⑤ Mr. Kunihiko INADOME Building Construction Planner
Yamashita Sekkei Inc.
- ⑥ Mr. Koji SATO Training Equipment Planner
Yamashita Sekkei Inc.

2. SURVEY SCHEDULE

(1) Basic Design Study (July 29 ~ August 27, 19965)

No.	Date	Schedule
1	Jul. 29 (Sat)	• Lv. Tokyo Arr. London
2	Jul. 30 (Sun)	• Lv. London
3	Jul. 31 (Mon)	• Arr. Nairobi • Courtesy call on the Embassy of Japan • Meeting at the JICA Kenya Office • Lv. Nairobi Arr. Kampala
4	Aug. 1 (Tue)	• Courtesy call on Ministry of Foreign Affairs, Ministry of Labour and Social Welfare, Ministry of Finance and Economic Planning • Survey of Nakawa VTI
5	Aug. 2 (Wed)	• Meeting at Nakawa VTI (Submission of questionnaire and explanation of the inception report)
6	Aug. 3 (Thu)	• Meeting at Nakawa VTI
7	Aug. 4 (Fri)	• Survey of similar institutions (Mukono, Jinja, Nile)
8	Aug. 5 (Sat)	• Analysis of collected data • Meeting on soil survey • Survey on related manufacturers
9	Aug. 6 (Sun)	• Meeting within the team • Preparation of Minutes of Meeting
10	Aug. 7 (Mon)	• Courtesy call on PS of Ministry of Foreign Affairs • Signing on Minutes of Meeting
11	Aug. 8 (Tue)	• Lv. Kampala Arr. Nairobi (Mr. Sugiyama, Mr. Totsuka, Ms. Takahashi, Mr. Tanokura) • Report to the Embassy of Japan and JICA • Meeting at Nakawa VTI (Survey schedule) • Survey on building regulation
12	Aug. 9 (Wed)	• Lv. Nairobi Arr. London (Mr. Sugiyama, Mr. Totsuka, Mr. Tanokura) • Meeting at Nakawa VTI
13	Aug. 10 (Thu)	• Lv. London (Mr. Sugiyama, Mr. Totsuka, Mr. Tanokura) • Lv. Nairobi (Ms. Takahashi) • Meeting at Nakawa VTI

No.	Date	Schedule
14	Aug. 11 (Fri)	<ul style="list-style-type: none"> ● Arr. Tokyo (Mr. Sugiyama, Mr. Totsuka, Mr. Tanokura) ● Survey of existing facilities at Nakawa VTI ● Market research on equipment
15	Aug. 12 (Sat)	<ul style="list-style-type: none"> ● Arr. Tokyo (Ms. Takahashi) ● Survey on construction materials ● Market research on equipment
16	Aug. 13 (Sun)	<ul style="list-style-type: none"> ● Analysis of collected data
17	Aug. 14 (Mon)	<ul style="list-style-type: none"> ● Survey on construction materials ● Market research on equipment
18	Aug. 15 (Tue)	<ul style="list-style-type: none"> ● Meeting at Nakawa VTI
19	Aug. 16 (Wed)	<ul style="list-style-type: none"> ● Survey on infrastructure ● Survey on construction materials ● Market research on equipment
20	Aug. 17 (Thu)	<ul style="list-style-type: none"> ● Lv. Kampala Arr. Nairobi (Mr. Sato, Mr. Shinko) ● Survey on infrastructure ● Survey on construction materials
21	Aug. 18 (Fri)	<ul style="list-style-type: none"> ● Lv. Kampala Arr. Nairobi (Mr. Tanaka, Mr. Inadome, Mr. Tonoshi) ● Market research on equipment
22	Aug. 19 (Sat)	<ul style="list-style-type: none"> ● Survey on construction materials ● Market research on equipment
23	Aug. 20 (Sun)	<ul style="list-style-type: none"> ● Analysis of collected data
24	Aug. 21 (Mon)	<ul style="list-style-type: none"> ● Survey on construction materials ● Market research on equipment
25	Aug. 22 (Tue)	<ul style="list-style-type: none"> ● Survey on construction materials ● Market research on equipment
26	Aug. 23 (Wed)	<ul style="list-style-type: none"> ● Lv. Nairobi Arr. London (Mr. Tanaka, Mr. Inadome, Mr. Tonoshi, Mr. Sato, Mr. Shinko)
27	Aug. 24 (Thu)	<ul style="list-style-type: none"> ● Survey on construction materials ● Market research on equipment
28	Aug. 25 (Fri)	<ul style="list-style-type: none"> ● Survey on construction materials ● Market research on equipment
29	Aug. 26 (Sat)	<ul style="list-style-type: none"> ● Lv. London (Mr. Tanaka, Mr. Inadome, Mr. Tonoshi, Mr. Sato, Mr. Shinko)
30	Aug. 27 (Sun)	<ul style="list-style-type: none"> ● Arr. Tokyo

(2) Explanation of Draft Basic Design (November 20 ~ December 1, 1995)

No.	Date	Schedule
1	Nov. 20 (Mon)	● Lv. Tokyo Arr. London Lv. London
2	Nov. 21 (Tue)	● Arr. Nairobi ● Courtesy call on the Embassy of Japan ● Meeting at the JICA Kenya Office
3	Nov. 22 (Wed)	● Lv. Nairobi Arr. Kampala ● Courtesy call on the Ministry of Foreign Affairs and the Ministry of Labour and Social Welfare
4	Nov. 23 (Thu)	● Explanation Draft Basic Design at Nakawa VTI ● Discussion on the Minutes of Meeting
5	Nov. 24 (Fri)	● Signing on Minutes of Meeting
6	Nov. 25 (Sat)	● Lv. Kampala Arr. Nairobi ● Meeting within the team
7	Nov. 26 (Sun)	● Analysis of collected data
8	Nov. 27 (Mon)	● Explanation of Draft Basic Design at Ministry of Lands and Settlement
9	Nov. 28 (Tue)	● Meeting within the team
10	Nov. 29 (Wed)	● Signing on Minutes of Meeting
11	Nov. 30 (Thu)	● Lv. Nairobi Arr. Rome Lv. Rome
12	Dec. 1 (Fri)	● Arr. Tokyo

3. LIST OF PARTY CONCERNED IN THE RECIPIENT COUNTRY

Ministry of Labour and Social Welfare

Hon. Dr. S. C. Chebrot	Minister
Ms. Jassie Rosie Kisakye	Permanent Secretary
Mr. Alex M. Oluka	Under Secretary
Mr. Wilberd Ogera-Ochabal	Under Secretary
Mr. Claudine M. Olweny	Director
Mr. William K. Kizito	Commissioner
Mr. Vincent Ntega	Principal Economist
Mr. James Mayoka	Senior Economist

Nakawa Vocational Training Institute

Mr. G. K. Kurinamanyire	Principal
Mr. A. Tuzinde	Deputy Principal
Mr. G. Shillingi	Head
Mr. E. H. Mukasa Kiyaya	Sr. Instructor
Mr. E. Katumba Malagala	Sr. Instructor
Mr. B. R. Ahangana	Instructor
Mr. T. T. Wakabi	Instructor

Ministry of Foreign Affairs

Mr. Chris Katsigazi	Permanent Secretary
Ms. Catherine Sebitosi	Ac. Director
Mr. A. Nabeta	

Ministry of Finance and Economic Planning

Mr. Mathew Rukikaire	Minister of State
Mr. W. Ndolerlire	

Ministry of Land, Housing and Urban Development

Mr. Harry Kazahuura	Chief Architect
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Vocational Training Centre, Lugogo

Mr. C. B. Kiwanuka Makumbi	Principal
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Uganda Firebrigade

Mr. Joseph Mugisa

Chief Fire Officer

Uganda Electric Board

Mr. Kyabaggu

Regional Manager

Uganda Posts & Telecommunication Corp.

Mr. V. Obulengo

Chief

National Water & Sewerage Corp.

Mr. J. Amayo

Area Engineer

Kampala City Council

Mr. Emmanuel Bakkabulindi

Sr. Executive Engineer

Embassy of Japan In Kenya

Mr. Nobusuke HORIUCHI

Ambassador

Mr. Osamu SHIOZAKI

Minister

Mr. Kiyoshi SAKAI

First Secretary

Mr. Kokichi KOGURE

Second Secretary

JICA Kenya Office

Mr. Minoru TAGAMI

Resident Representative

Mr. Toshikazu NAGASHIMA

Former Resident Representative

Mr. Yukio ISHIDA

Deputy Director

Mr. Sumio AOKI

Former Deputy Director

Ms. Eri SUGITA

Assistant Resident Representative

JICA Experts

Mr. Takeshi EJIRI

JICA Expert

Mr. Shigekatsu SUZUKI

JICA Expert

4. MINUTES OF DISCUSSION

(1) Basic Design Study

**MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON
THE PROJECT FOR REHABILITATION AND EXPANSION
OF
NAKAWA VOCATIONAL TRAINING INSTITUTE
IN
THE REPUBLIC OF UGANDA**

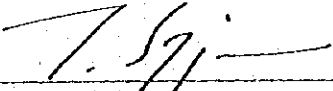
In response to a request from the Government of the Republic of Uganda, the Government of Japan has decided to conduct a Basic Design Study on the Project for Rehabilitation and Expansion of Nakawa Vocational Training Institute in the Republic of Uganda (hereinafter referred to as "the Project"), and entrusted the study to Japan International Cooperation Agency (JICA).

JICA dispatched to Uganda the Basic Design Team (hereinafter referred to as "the Team") headed by Mr. Takahiko SUGIYAMA, International Cooperation Specialist, JICA and is scheduled to stay in the country from the 31st of July to the 19th of August 1995.

The Team held discussions with the officials concerned of the Government of Uganda and conducted a field survey at the study area.

As a result of discussions and field survey, both parties confirmed the main items described on the attachment.

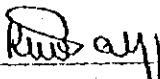
Kampala, 7th August 1995



Mr. Takahiko SUGIYAMA

Leader

Basic Design Study Team, JICA



Ms. Justine R. KISAKYE

Permanent Secretary

Ministry of Labour and Social Welfare

The Republic of Uganda

ATTACHMENT

1. OBJECTIVE OF THE PROJECT

The objective of the Project is to increase capacity and efficiency of training in Nakawa Vocational Training Institute through rehabilitation and expansion of the facilities along the agreement on the Technical Cooperation for the Nakawa Vocational Training Institute Project.

2. PROJECT IMPLEMENTING AGENCY

The Ministry of Labour and Social Welfare is responsible for implementation of the Project.

3. PROJECT SITE

The project site location is shown in Annex-1.

4. CONTENTS OF THE REQUEST BY THE UGANDAN SIDE

After a series of discussions, the Ugandan side finally requested for the Project contents as shown in Annex-2 for Japan's Grant Aid. However, the contents of the Project will be recommended in the Basic Design Report after further study by the Team in Japan.

5. CHARACTERISTICS OF JAPAN'S GRANT AID PROGRAMME

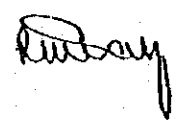
The Ugandan side has understood the system and characteristics of Japan's Grant Aid Programme explained by the Team as shown in Annex-3.

6. NECESSARY MEASURES TO BE TAKEN BY THE UGANDAN SIDE

The Government of Uganda will take necessary measures described in Annex-4 for smooth implementation of the Project on the condition that the Grant Aid by the Government of Japan is extended to the Project.

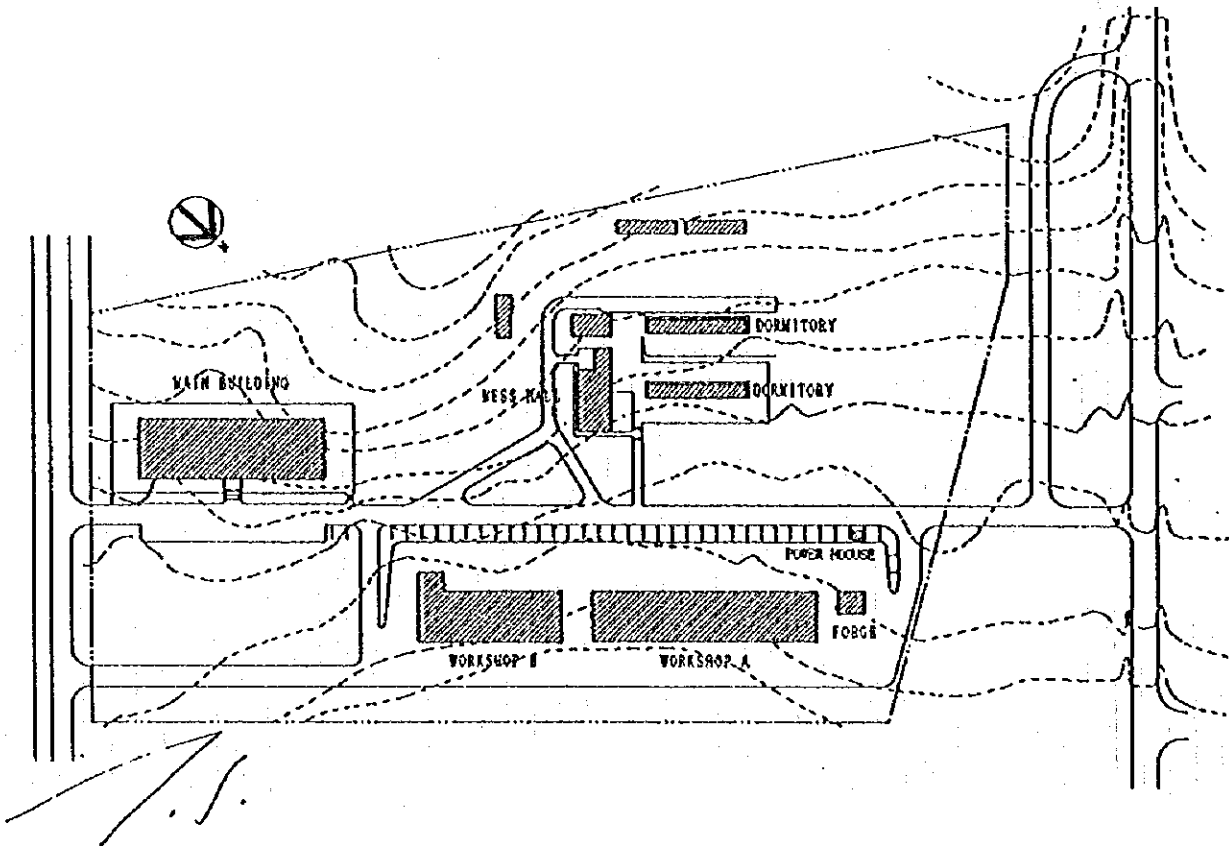
7. FURTHER SCHEDULE OF THE STUDY

- (1) The consultant will proceed to further studies in Uganda until the 19th August 1995.
- (2) JICA will prepare a Draft Study Report and dispatch a Draft Report Explanation Team in October, 1995 in order to explain and to confirm the contents of the Draft Study Report.
- (3) In case that the Draft Study Report is accepted by the Ugandan side, JICA will complete the Study Report and send it to the Ugandan side by February, 1996.



ANNEX-1 LOCATION OF THE SITE

The Project site is located in the premise of Nakawa Vocational Training Institute, Jinja Road, Nakawa Area.

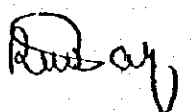
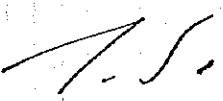


D. S.

ANNEX-2 CONTENTS OF THE REQUEST FOR JAPAN'S GRANT AID

The contents of the Project covered under Japan's Grant Aid finally requested by the Ugandan side are as follows;

1. Facilities
 - (1) Rehabilitation and expansion of workshops
 - (2) Rehabilitation of administration building to classrooms
 - (3) Expansion of administration building
 - (4) Rehabilitation and expansion of trainees' hostels
 - (5) Rehabilitation and expansion of trainees' canteen
2. Training equipment for;
 - (1) Common and general use
 - (2) Machining field
 - (3) Electricity field
 - (4) Welding field
 - (5) Sheet metal field
 - (6) Motor vehicle field
 - (7) Electronics field
 - (8) Carpentry field
3. Vehicles for field study



ANNEX-3 JAPAN'S GRANT AID PROGRAMME

1. Japan's Grant Aid Procedures

Japan's Grant Aid Programme is extended in the following procedures.

- Application : A request made by the recipient country
- Study : Basic Design Study conducted by JICA.
- Appraisal & Approval
 - : Appraisal by the Government of Japan and approval by the Cabinet of Japan
- Determination of Implementation
 - : Exchange of Notes between both Governments
- Implementation: Implementation of the Project

At the first step (Application), a request made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs), whether or not it is suitable for the Grant Aid. If the request is confirmed that it has a high priority as the project for the Grant Aid, the Government of Japan instructs JICA to conduct the Study.

At the second step (Study), the Basic Design Study is conducted by JICA basically under contracts with a Japanese consulting firm to carry it out.

At the third step (Appraisal & Approval), the Government of Japan appraises whether or not the Project is suitable for Japan's Grant Aid Programme based on the Basic Design Study Report prepared by JICA and then submitted for approval by the Cabinet.

At the fourth step (Determination of Implementation), the Project approved by the Cabinet is officially determined to implement by signing the Exchange of Notes between both Governments.

In the course of implementation of the Project, JICA will take charge of expediting the execution by assisting the recipient country in terms of the procedures of tender, contract and others.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Study conducted by JICA is to provide basic documents necessary for the appraisal by the Government of Japan whether or not the Project is viable for Japan's Grant Aid Programme.

The contents of the Study are as follows;

- a) to confirm the background of the request, objectives and effects of the Project and maintenance ability of the recipient country necessary for the implementation,
- b) to evaluate the appropriateness of the Grant Aid from the technological, social and economical points of views,
- c) to confirm the basic concept of the plan mutually agreed upon through discussion between both sides,
- d) to prepare a basic design of the Project,
- e) to estimate the rough cost of the Project.

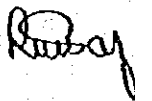
The contents of the original request are not necessarily approved as the contents of the Grant Aid as it is. The Basic Design of the Project is confirmed considering Japan's Grant Aid Scheme.

In the implementation of the Project, the Government of Japan requests the recipient country to take necessary measures in order to promote its self-reliance, those undertakings shall be guaranteed even if the recipient implementing entity does not have jurisdiction. Therefore, the implementation of the Project is confirmed by all relevant organizations in the recipient country in the Minutes of Discussions.

(2) Selection of Consultants

For the smooth implementation of the Study, JICA selects a consultant among those consultants registered to JICA by evaluating proposals submitted by those consultants. The selected consultant carries out the Basic Design Study and prepares a report based upon the terms of reference made by JICA.

At the stage of implementation after the Exchange of Notes, for concluding the contract regarding the Detail Design and Construction Supervision of the Project between a consultant and the recipient country, JICA recommends the same consultant which participated in the Basic Design Study to the recipient country in order to maintain the technical consistency between the Basic Design Study and the Detail Design as well as to avoid undue delay caused by the selection of a new consultant.



3. Japan's Grant Aid Scheme

(1) What is Grant Aid ?

The Grant Aid Programme provides the recipient country with non-reimbursable funds needed to procure facilities, equipment and services (labour, transportation, etc.) for the economic and social development in the country under the following principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not a form of donation in kind of the recipient country.

(2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Exchange of Notes between both Governments, in which the objectives of the Project, period, conditions, amount of the grant, etc. are confirmed.

(3) Period

The period of the Grant Aid is within the Japanese fiscal year in which the Cabinet approved the Project. Within the fiscal year, all procedure such as Exchange of Notes, concluding contracts by the recipient country with the consultant and contractors, and the final payment to them shall be completed.

In case of a big project which requires net construction period more than 12 months, the period of the Grant Aid is designated covering more than one fiscal year depending on the Basic Design Study Report.

However, in case of the delay of delivery, installation or construction due to events such as weather, the period of the Grant Aid can be further extended for one fiscal year at most by mutual agreement between both Governments.

(4) Purchase of the Products and/or Services

The Grant Aid is used properly and exclusively for the purchase of the products, in principle, of Japan or the recipient country and of the services of the Japanese or the recipient country's nationals. The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.

When both Governments deem it necessary, the Grant Aid may be used for the purchase of the products and/or services of the third country (other than Japan or the recipient country).

However, in terms of the principle of the Grant Aid, the prime contractors, that is the consultant, contractor and procurement firm necessary for the implementation of the

Grant Aid, are limited to "Japanese nationals".

(5) Verification

The Government of the recipient country or its designated authority will conclude the contracts in Japanese Yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is necessary because the source of the Grant Aid is the taxes of Japanese nationals.

(6) Undertakings required to the Recipient Country

(As described in Annex-4)

(7) Proper Use

The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the expenses other than those to be borne by the Grant Aid.

(8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese Yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the contracts verified.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

T.S.

ANNEX-4 NECESSARY MEASURES TO BE TAKEN BY THE UGANDAN SIDE

Following necessary measures shall be taken by the Government of the Republic of Uganda on the condition that the Grant Aid by the Government of Japan is extended to the Project.

1. To provide data and information necessary for the Project;
2. To secure a land for the Project;
3. To clear, level and reclaim the site for the Project prior to the Project implementation;
4. To provide proper access road to the Project area;
5. To undertake gardening, fencing, exterior lighting, and other incidental outdoor works in and around the Project site;
6. To provide the following incidental facilities to the Project;
 - (1) Electricity distributing line to the site
 - (2) City water distribution main to the site
 - (3) Drainage main to the site
 - (4) Telephone trunk line to the site
 - (5) General furniture such as carpet, curtain and others,
 - (6) Other incidental facilities necessary for the Project realization;
7. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission;
8. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in Uganda and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid;
9. To exempt Japanese juridical and physical nationals involved in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Uganda with respect to the supply of the products and services under the verified contracts;
10. 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 Uganda and stay therein for the performance of their work;
11. To provide necessary permissions, licenses and other authorizations for the Project, if necessary;
12. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project; and
13. To bear all the expenses other than those to be borne by Japan's Grant Aid within the scope of the Project.

T.S.

Ruby

(2) Explanation of Draft Basic Design

MINUTES OF DISCUSSIONS
ON
THE DRAFT BASIC DESIGN
ON
THE PROJECT FOR REHABILITATION AND EXPANSION
OF
NAKAWA VOCATIONAL TRAINING INSTITUTE
IN
THE REPUBLIC OF UGANDA

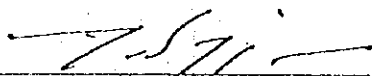
(CONSULTATION OF DRAFT BASIC DESIGN)

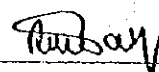
In July 1995, Japan International Cooperation Agency (JICA) dispatched the Basic Design Study Team on "The Project for Rehabilitation and Expansion of Nakawa Vocational Training Institute in the Republic of Uganda" (hereinafter referred to as "the Project") to Uganda, and through discussions, field survey, and technical examination of the results in Japan, JICA has prepared the Draft Basic Design.

In order to explain about and to consult the Ugandan side on the components of the Draft Basic Design, JICA dispatched to Uganda an explanation team (hereinafter referred to as "the Team"), headed by Mr. Takahiko SUGIYAMA, International Cooperation Specialist, JICA and is scheduled to stay in the country from 22nd to 25th of November, 1995.

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

Kampala, 24th November 1995


Mr. Takahiko SUGIYAMA
Leader
The Explanation Team
of Draft Basic Design
JICA


Ms. Justine R. KISAKYE
Permanent Secretary
Ministry of Labour and Social Welfare
The Republic of Uganda

ATTACHMENT

1. Components of Draft Basic Design

The Government of Uganda has agreed and accepted in principle the components of the Draft Basic Design explained by the Team as follows:

(1) Construction of Facilities

- Rehabilitation and expansion of workshops
- Rehabilitation of administration building to classrooms
- Rehabilitation and expansion of trainees' hostels
- Rehabilitation of trainees' canteen

(2) Procurement of Equipment

Training equipment for;

- Common and general use
- Machining field
- Electricity field
- Welding field
- Sheet metal field
- Motor vehicle field
- Electronics field
- Carpentry field

2. Project Site

Location of the Project Site is shown in ANNEX-1.

3. Characteristics of the Japan's Grant Aid Programme

The Ugandan side has understood the system and characteristics of Japan's Grant Aid Programme explained by the Team as shown in ANNEX-2.

TS.

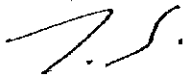
JR.

4. Necessary Measures to be taken by the Ugandan side

The Study Team explained the necessary measures to be taken by the Government of Uganda described in ANNEX-3 for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

5. Further Schedule of the Study

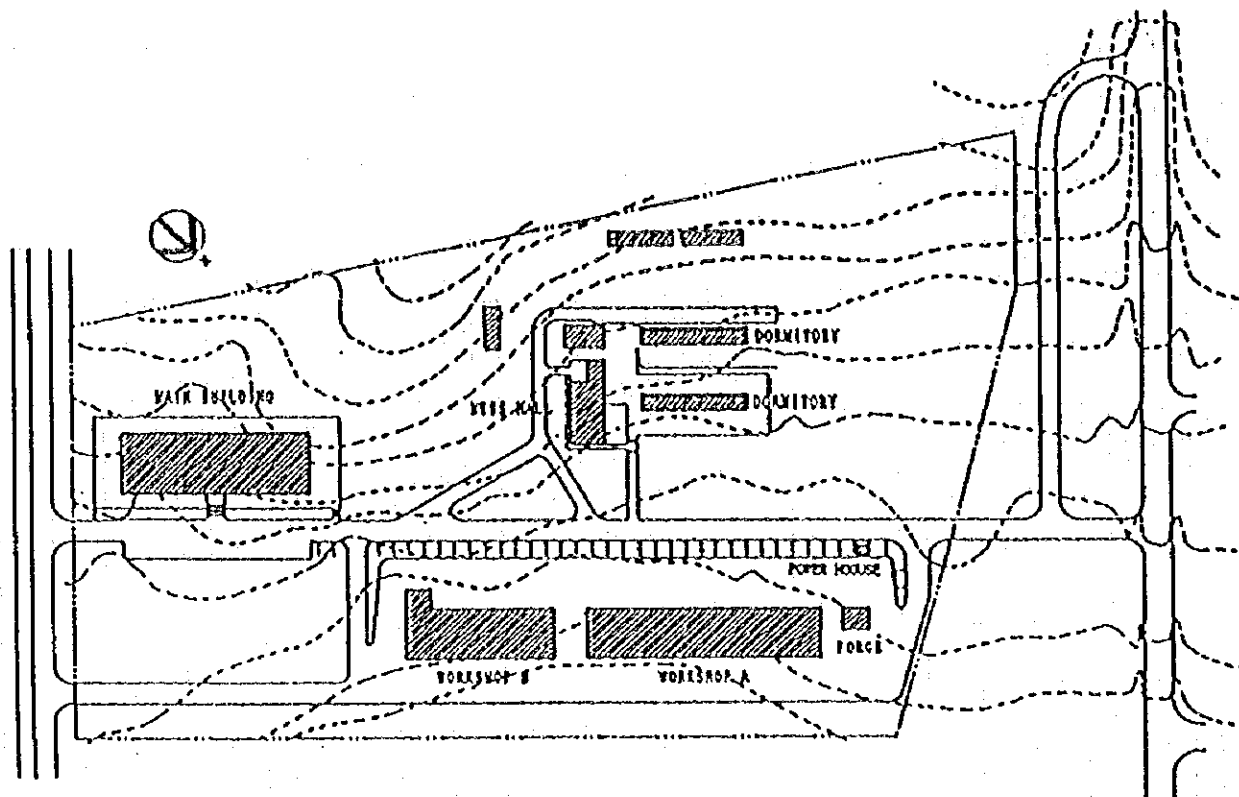
The Team will compile the final report in accordance with the confirmed items and send it to the Government of Uganda through JICA Kenya Office by the end of February 1996.



DRC

ANNEX-1 LOCATION OF THE SITE

The Project site is located in the premise of Nakawa Vocational Training Institute, Jinja Road, Nakawa Area.



Handwritten signature or initials

ERIC

ANNEX-2 JAPAN'S GRANT AID PROGRAMME

1. Japan's Grant Aid Procedures

The Japan's Grant Aid Programme is extended in the following procedures.

- Application : A request made by the recipient country
- Study : Basic Design Study conducted by JICA.
- Appraisal & Approval : Appraisal by the Government of Japan and approval by the Cabinet of Japan
- Determination of Implementation : Exchange of Notes between both Governments
- Implementation: Implementation of the Project

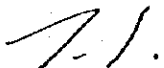
At the first step (Application), a request made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs), whether or not it is suitable for Grant Aid. If the request is confirmed that it has a high priority as the project for Grant aid, the Government of Japan instructs JICA to conduct the Study.

At the second step (Study), the Basic Design Study is conducted by JICA basically under contracts with a Japanese consulting firm to carry it out.

At the third step (Appraisal & Approval), the Government of Japan appraises whether or not the Project is suitable for Japan's Grant Aid Programme based on the Basic Design Study Report prepared by JICA and then submitted for approval by the Cabinet.

At the fourth step (Determination of Implementation), the Project approved by the Cabinet is officially determined to implement by signing the Exchange of Notes between both Governments.,

In the course of implementation of the Project, JICA will take charge of expediting the execution by assisting the recipient country in terms of the procedures of tender, contract and others.



JR/C

2. Contents of the Study

(1) Contents of the Study

The purpose of the Study conducted by JICA is to provide basic documents necessary for the appraisal by the Government of Japan whether or not the Project is viable for Japan's Grant Aid Programme.

The contents of the Study are as follows;

- a) to confirm the background of the request, objectives and effects of the Project and maintenance ability of the recipient country necessary for the implementation,
- b) to evaluate the appropriateness of the Grant Aid from the technological, social and economical points of views,
- c) to confirm the basic concept of the plan mutually agreed upon through discussion between both sides,
- d) to prepare a basic design of the Project,
- e) to estimate the rough cost of the Project.


The contents of the original request are not necessarily approved as the contents of the Grant Aid as it is. The Basic Design of the Project is confirmed considering the Japan's Grant Aid Scheme.

In the implementation of the Project, the Government of Japan requests the recipient country to take necessary measures in order to promote its self-reliance, those undertakings shall be guaranteed even if the recipient implementing entity does not have jurisdiction. Therefore, the implementation of the Project is confirmed by all relevant organizations in the recipient country in the Minutes of Discussions.

(2) Selection of Consultants

For the smooth implementation of the Study, JICA selects a consultant among those consultants registered to JICA by evaluating proposals submitted by those consultants. The selected consultant carries out the Basic Design Study and prepares a report based upon the terms of reference made by JICA.

At the stage of implementation after the Exchange of Notes, for concluding the contract regarding the Detail Design and Construction Supervision of the Project between a consultant and the recipient country, JICA recommends the same consultant which participated in the Basic Design Study to the recipient country in order to maintain the technical consistency between the Basic Design Study and the Detail Design as well as to avoid undue delay caused by the selection of a new consultant.



3. Japan's Grant aid Scheme

(1) What is Grant Aid ?

The Grant Aid Programme provides the recipient country with non-reimbursable funds needed to procure facilities, equipment and services (labour, transportation, etc.) for the economic and social development in the country under the following principles in accordance with the relevant laws and regulations of Japan.. The Grant Aid is not a form of donation in kind of the recipient country.

(2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes between both Governments, in which the objectives of the Project, period, conditions, amount of the grant, etc. are confirmed.

(3) Period

The period of the Grant Aid is within the Japanese fiscal year in which the Cabinet approved the Project. Within the fiscal year, all procedure such as Exchange of Notes, concluding contracts by the recipient country with the consultant and contractors, and the final payment to them shall be completed.

In case of a big project which requires net construction period more than 12 months, the period of the Grant Aid is designated covering more than one fiscal year depending on the Basic Design Study Report.

However, in case of the delay of delivery, installation or construction due to events such as weather, the period of the Grant Aid can be further extended for one fiscal year at most by mutual agreement between both Governments.

(4) Purchase of the Products and/or Services

The Grant Aid is used properly and exclusively for the purchase of the products, in principle, of Japan or the recipient country and of the services of the Japanese or the recipient country's nationals. The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.

When both Governments deem it necessary, the Grant Aid may be used for the purchase of the products and/or services of the third country (other than Japan or the recipient country).

However, in terms of the principle of the Grant Aid, the prime contractors, that is the

consultant, contractor and procurement firm necessary for the implementation of the Grant Aid, are limited to "Japanese nationals"

(5) Verification

The Government of the recipient country or its designated authority will conclude the contracts in Japanese Yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is necessary because the source of the Grant Aid is the taxes of Japanese nationals.

(6) Undertakings required to the Recipient Country

(As described in Annex-3)

(7) Proper Use

The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the expenses other than those to be borne by the Grant Aid.

(8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese Yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the contracts verified.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

T.S.

DRIC

ANNEX-3 NECESSARY MEASURES TO BE TAKEN BY THE UGANDAN SIDE

Following necessary measures shall be taken by the Government of the Republic of Uganda on the condition that the Grant Aid by the Government of Japan is extended to the Project.

1. To provide data and information necessary for the Project;
2. To secure a land for the Project;
3. To clear, level and reclaim the site for the Project prior to the Project implementation;
4. To provide proper access road to the Project area;
5. To undertake gardening, fencing, exterior lighting, and other incidental outdoor works in and around the Project site;
6. To provide the following incidental facilities to the Project;
 - (1) Electricity distributing line to the site
 - (2) City water distribution main to the site
 - (3) Drainage main to the site
 - (4) Telephone trunk line to the site
 - (5) General furniture such as carpet, curtain and others,
 - (6) Other incidental facilities necessary for the Project realization;
7. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission;
8. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in Uganda and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid;
9. To exempt Japanese juridical and physical nationals involved in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Uganda with respect to the supply of the products and services under the verified contracts.
10. 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 Uganda and stay therein for the performance of their work;
11. To provide necessary permissions, licenses and other authorizations for the Project, if necessary;
12. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project; and
13. To bear all the expenses other than those to be borne by the Japan's Grant Aid within the scope of the Project.

T.S.

J.P.R.

5. COST ESTIMATION BORNE BY THE RECIPIENT COUNTRY

(1) Estimated Project Cost to be Borne by the Government of Uganda

The works to be executed by the Government of Uganda and their costs are as listed below.

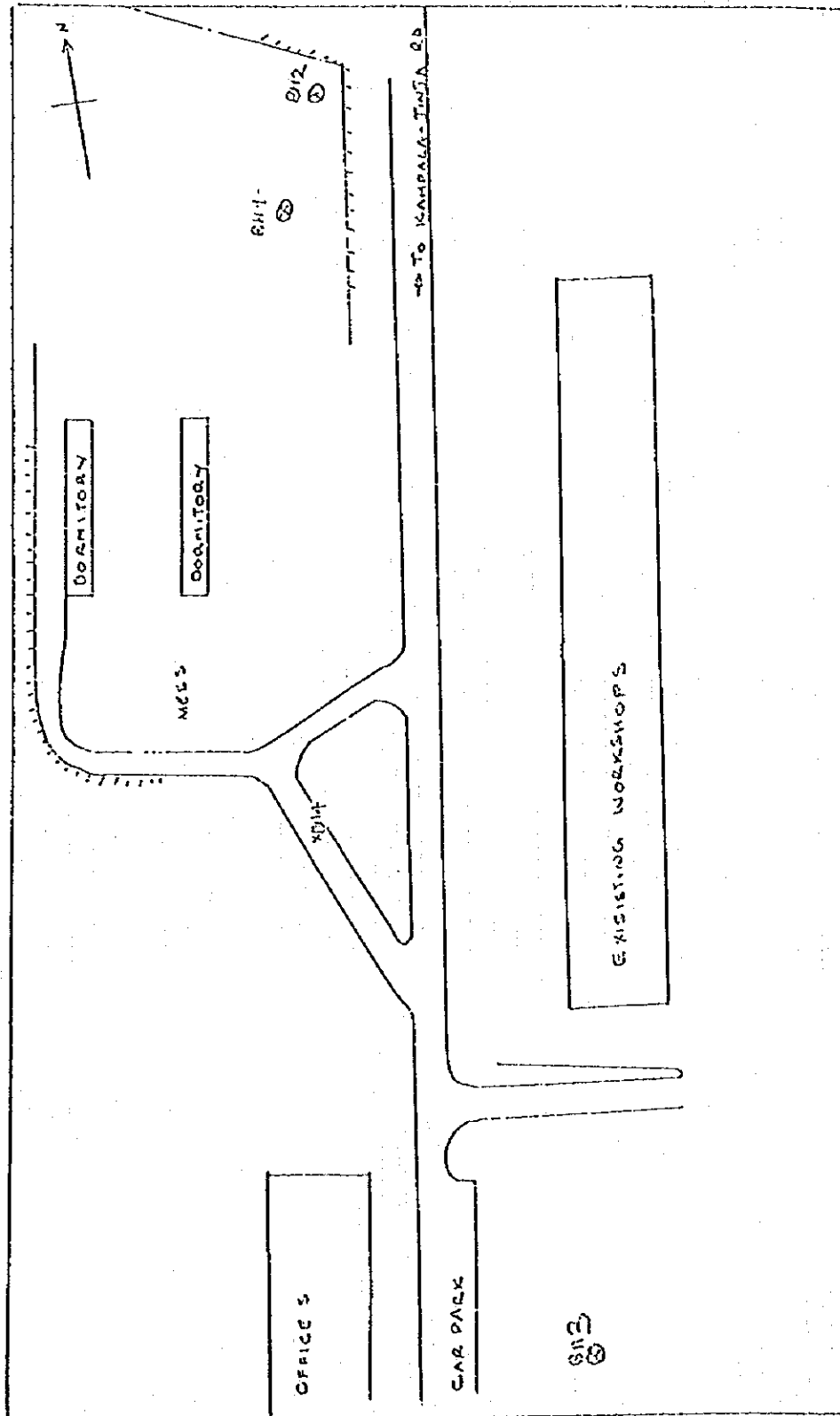
1. Installation of power service wires	5,500,000
2. Increasing the number of telephone lines	1,200,000
3. Water supply	0
4. Sewerage	0
5. Site renovation	20,000,000 (removal of large obstacles, ground leveling)
6. Erection of fences	18,000,000 (600m barbed wire)
7. Furniture, furnishings	6,500,000 (general items of furniture, furnishings)
8. Curtains	700,000
9. Other	8,000,000 (Commission for A/P, banking arrangement)
<hr/>	
Total	59,900,000 Ushs

In case the executing agency of the Ugandan side need to pay custom duty and VAT charged to the Japanese side work of the Project, following amount of budget must be allocated in addition to the above estimated cost.

Custom duty :	790,000,000 Ushs
VAT :	622,000,000 Ushs
<hr/>	
Total	1,412,000,000 Ushs

6. OTHER RELEVANT DARTA (SOIL INVESTIGATION)

LOCATION OF BOREHOLES (SKETCH)



CLIENT:
PROJECT:

M/S KANAMURA MELVIN CONSULTING ENGINEERS
GROUND INVESTIGATION OF THE PROPOSED SITES FOR THE WORKSHOP, EXTENSION OF OFFICE BUILDING
AND RESIDENCES AT VOCATIONAL TRAINING INSTITUTE NAKAWA.

SHEET:

SUBSURFACE EXPLORATION LOG

DEPTH (M)	SPT TEST RESULTS	LOC.	SAMPLE NUMBER, DESCRIPTION OF MATERIAL AND LABORATORY CLASSIFICATION (USCS)	NM %	ATTERBERG LIMITS			GS	GRADING TEST RESULTS						OTHER TESTS	REMARKS	
					LL %	PL %	PI %		10.0 M.M.	60 M.M.	200 M.M.	4.75 M.M.	75 M.M.	150 M.M.			300 M.M.
0.00																	
1.00	1.4	1	1 Red Firm CLAY (CH)	24	56	24	32	2.0	100	96	94	92	88	86	84	82	C.T
2.00		2	2 Red Medium dense gravelly clay (lateritic)	26	53	23	30		100	100	97	91	92	89	86	79	
3.00	4.7	3	3 Red dense lateritic clayey sandy gravel (SC)	19	56	24	32		94	92	75	73	69	65	62	56	T
4.00	12.2	4	4 Red very stiff clay lateritic (CH)	17	63	23	40		98	93	90	74	66	64	62	60	57
5.00		5	5 Red brown very stiff Sandy silts (weathered schists) (MH)	13	32	19	33		76	70	69	50	46	44	41	40	37
6.00		6	6 Red brown very stiff Sandy silts (weathered schists) (MH)	22.9	59	23	36		100	99	96	94	80	86	80	76	C.T
7.00	4.7	7	7 Red brown very stiff Sandy silts (weathered schists) (MH)	21	53	NP	-		90	90	92	91	89	87	86	82	
8.00	8.1	8	8 Red brown very stiff Sandy silts (weathered schists) (MH)	20	61	NP	-		100	99	90	88	85	81	76	68	
9.00	10.1	9	9 Red brown very stiff Sandy silts (weathered schists) (MH)	20	61	NP	-		100	99	90	88	85	81	76	68	
10.00		10	10 Red brown medium dense Sandy silts (weathered schists) (MH)	23	57	NP	-		90	90	97	91	85	78	71	65	50
11.00		10	10 Red brown medium dense Sandy silts (weathered schists) (MH)	30	72	NP	-		100	99	92	85	79	70	64	56	
12.00																	
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BORE HOLE NUMBER 01
SHEET NO. 1 OF 1
CHIEF MATERIALS ENGINEER
P.O. BOX 7188 KAMPALA
TEL: 3750

CLIENT: M/S KANANURA MELVIN CONSULTING ENGINEERS
 PROJECT: GROUND INVESTIGATION OF THE PROPOSED SITES FOR THE WORKSHOP, EXTENSION OF OFFICE BUILDING AND RESIDENCES AT VOCATIONAL TRAINING INSTITUTE NAKAWA.

SUBSURFACE EXPLORATION LOG

DEPTH (M)	SPT TEST RESULTS	LOG	SAMPLE NUMBER, DESCRIPTION OF MATERIAL AND LABORATORY CLASSIFICATION (USCS)	W _u %	ATTERBERG LIMITS			G.S.	GRADING TEST RESULTS					OTHER TESTS	REMARKS				
					L.L. %	P.L. %	P.I. %		100 μm	75 μm	4.75 μm	0.075 μm	0.0075 μm			% PASSING			
0.00									100	63	50	20	0.50	100	100	100	100		
1.00																			
2.00	2.2.3		20 Red firm sandy silty CLAY	28	57	25	32												
2.50			21 (CH)	25	55	27	28												
3.00			22 Red dense quartzitic gravelly SANDS (SC)	8.4	39	14	25		91	00	00	76	03	56	51	16	43	05	C.T.
4.00																			
5.00	26.12.13		23 Red Medium dense quartzitic gravelly sands (SC)	7.6	35	13	22		94	90	06	75	08	58	52	49	45	39	Upper C. Conds - T. Trapper
6.00	14.9.5		24 Light Red Medium dense GRAVELS, traces of Kaolin (sc)	0.4	30	14	24		94	09	75	72	04	52	40	45	37	34	
7.00																			
8.00																			
9.00	6.7.7		25 Green/brownish silt Sandy SILTS (Phyllite) (MH)	25	56	NP	NP		99	00	05	00	00	07	06	05	04	02	
10.00																			
11.00																			
12.00	6.13.17		26 Red brown very silt. Sand SILTS (MH)	26	50	NP	NP		100	00	00	91	07	03	03	03	04	00	

CHIEF MATERIALS ENGINEER
 P.O. BOX 7188 KAMPALA
 URBAN DISTRICT - 8871 - 5712

BORE HOLE NUMBER 03
 DATE ... BOR ...

PROJECT: GROUND INVESTIGATION OF THE PROPOSED SITES FOR THE WORKSHOP, EXTENSION OF OFFICE BUILDING AND RESIDENCES AT VOCATIONAL TRAINING INSTITUTE NAKAWA.

SUBSURFACE EXPLORATION LOG

DEPTH (M)	SPT TEST RESULTS	LOG	SAMPLE NUMBER, DESCRIPTION OF MATERIAL AND LABORATORY CLASSIFICATION (USCS)	WATER CONTENT (%)	ATTENBERG LIMITS			G.S.	GRADING TEST RESULTS						OTHER TESTS	REMARKS	
					LL (%)	PL (%)	PI (%)		75 μm	60 μm	425 μm	75 μm	60 μm	425 μm			75 μm
0.00									100	50	20	10	5	2			
1.00									100	50	20	10	5	2			
2.00	29-37		27 Red very dense clay sand GRAVEL (GC)		40	21	27		100	95	91	69	55	50	48	46	40
3.00			28 Red silt silty CLAY (CH)		51	26	25	7.02		99	99	90	87	80	74	70	65
4.00	6.8.9		29 (Latent) (CH) 30 Red medium dense silty gravelly SANDS (GM)		50	26	24			99	99	91	79	77	75	72	69
5.00	5.7.1.5		31 Reddish creamy firm sandy CLAY, traces of gravels and kaolin (CL)		46	NP				100	99	81	72	69	66	63	59
6.00	3.2.3		32 Creamy silt CLAY (kaolin) (CH)		46	23	23			99	97	96	85	80	66	64	60
7.00										100	99	90	85	80	66	64	60
8.00										100	99	90	85	80	66	64	60
9.00	4.6.9		33 Red brown medium dense sandy silt (weathered, schist, kaolin) (ML)		52	30	22			100	99	90	85	80	66	64	60
10.00										100	99	90	85	80	66	64	60
11.00										100	99	90	85	80	66	64	60
12.00	3.4.7		33 Red brown medium dense sandy silt (weathered, schist, kaolin) (ML)		49	NP				100	99	90	85	80	66	64	60
										100	99	90	85	80	66	64	60

ENGINEER: CHIEF MATERIALS ENGINEER
P.O. BOX 7188 KAMPALA
TEL: 287 287 2857

BORE HOLE NUMBER: 04
DATE: 1988
SCALE: 1:1000

JICA