

## 5-2 Basic Design II ..... Architecture

### 5-2-1 Design Policies

Following basic policies are to be applied in the design:

- (1) To prepare and arrange in effective ways the architectural facilities which are most fitted to the projected plan.
- (2) To make newly installed equipments and facilities well combined with the existing ones.
- (3) Future expansion of facilities and equipments is to be considered.
- (4) To make new installation of equipments and facilities in harmony with the existing ones.
- (5) To select construction materials and methods which are most suitable and adequate for object of the building and the limited construction term.

### 5-2-2 Basic Design

According to the aforementioned basic policies, definite decisions were made on the construction methods as follows:

First of all, construction method of the broadcasting station is to be of pre-fab type. The reason is as follows:

- o Construction term for the building is limited. Accordingly, it is inevitable to select the shortest construction term for the building, avoid the rainy season so it will not affect the installation work of transmitter to be conducted after implementation of station house.
- o Although the building itself is a very simply fabricated structure, installation and fitting work of air conditioners, air-ducts, ventilation and wiring ladders definitely need remarkably high construction techniques, to be well combined with arrangements of broadcasting equipments and facilities.

- o The structure should be proof against rain water leakage, and against dust.
  
- o As Liberian contractors, even bigger ones, are naturally supposed to be risky in their managements and performances, local contracts should be limited only to foundation portions of the building, and other parts such as components and units imported from Japanese makers, are to be assembled by Japanese skillers at the job-site. Acrylate resins mortar is to be sprayed on all walls of the building in the finishing touch, because importance should be placed on durability, economy, construction and maintenance of the building itself.

Construction areas of the station building were determined based on arrangement and lay-out of the broadcasting equipment and facilities, mentioned above in Design Policies 1 in Chapter 5-1.

The antenna tower with fixed height in accordance with aforementioned transmitting conditions is to be newly installed. With a view to its economical conditions, the tower is to be of guy-supported type in case of wider site, or to be of self-supported type in case of smaller site.

(1) Monrovia Transmitting Station

The transmitting house and a power supply house are to be newly constructed in the site adjoining to the existing antenna tower and power house.

Floor area of the transmitting house is to be such as 23 m<sup>2</sup> for transmitter, 19 m<sup>2</sup> for monitoring and maintenance, and 12 m<sup>2</sup> for auxiliary equipment and facilities such as air-conditioner and others, in total 54 m<sup>2</sup> (6 x 9 m).

Floor area of the power house is in total 35 m<sup>2</sup>, vis, 10 m<sup>2</sup> for power supply transformer, and 25 m<sup>2</sup> for installation space of power supply rack (7 x 5 m).

The existing antenna tower which has constructed a few years ago is found no defective in structure, and still quite durable with zinc galvanized. After technical re-checks on the structure, it is certified that the tower will fully bear both horizontal and vertical loads imposed by installation of new antennas. It is, in consequence, determined to re-use the antenna tower.

(2) Regional Transmitting Stations

The transmitting house, power house and an antenna tower are to be newly constructed adjoining each other. Floor area of the transmitting house is so designed to have 45 square meters, 20 m<sup>2</sup> for transmitter, 16 m<sup>2</sup> for monitoring and maintenance, and 9 m<sup>2</sup> for auxiliary facilities such as air ventilation and other equipment. In addition to the above, 9 square meters for two rooms with one set of bed each and a toilet are provided for emergency use. All in all, 54 square meters (6 x 9 m).

The power house is to be, 4.6 m<sup>2</sup> for power supply transformer, 9.4 m<sup>2</sup> for electric rack, and 22.0 m<sup>2</sup> for emergency engine generator, in total 36 m<sup>2</sup> (6 x 6 m).

1) Gbarnga

The guyed mast is to be of triangle trussed with height of 100 meters. Design parameter for maximum instantaneous wind velocity is to be 30 m/S at 10 m above ground level and bearing capacity of ground is to be 40 ton/m<sup>2</sup> (minus 0.8 m below ground). Design parameter to be applied to transmitting and power houses is to be in accordance with the above figures.

3) Bomi Hills

Main particulars of design parameter to be applied to this construction are same as in case of Gbarnga, except bearing capacity of ground. This capacity for Bomi Hills is to be 10 ton/m<sup>2</sup>.

(3) Studio Facilities in Monrovia

Improvement for studio B is as follows:-

a) Suspending grids for lighting apparatuses

Grids are to be of latticed type with zinc galvanized carbon steel pipes (1.5 inch dia.) at height of 4.5 meter from floor. All lightings are to be suspended from above grids. All steel pipes and materials to be used for the structure are zinc galvanized proof types against corrosions.

The weight of the lighting equipment is principally 100 to 200 kg/m<sup>2</sup>, but sometimes some heavy substances are suspended from the grid-pipes. The diameter and the pitch of grid-pipes are decided taking this facts into consideration. Pipes are galvanized for rust-proof because they are placed near the ceiling and the growth of the rust would not be found easily.

In general, steel pipes or steel channels are used for studio construction materials. In case of small sized studio construction, steel pipes are much recommended to be used because heavy weight lighting apparatus are suspending from ceiling structure.

b) Air Conditioning facilities

In the studio, outdoor and indoor air conditioning units (condensing and package type air handling unit) and pipings connecting both units are to be all renewed and replaced. Among air conditioning ducts (for supply and return) over the ceiling, some portions near air conditioner are to be removed and two muffling elbows are to be inserted instead. For other portions, double layer of plaster boards (12 mm thick) are to cover over the portions to improve sound insulation.

c) Sound insulation door

Three sound insulation doors (sound insulation efficiency : 30 db, steel-fabricated type) are to be provided between outside and scenery room, between scenery room and studio, and between sound lock room and studio. Studio door between studio and sub-control room is to be newly replaced with aluminum fabricated type (sound insulation efficiency: 50 db, aluminum fabricated type).

As a general rule, in comparison of sound insulation efficiency between aluminum fabricated door and steel fabricated door, sound insulation efficiency of the former is higher due to higher quality of fabrication, and more durable on hinged portions, due to lighter weight material. Thus, the sound insulation efficiency is easy to maintain.

However, as the door of first floor of TV studios are apted to be damaged when carrying scenery sets in and out, a strong steel fabricated door is usually used.

d) Others

A steel fabricated stair case will be installed between the sub-control room and the studio floor and a part of the studio floor will be repaired.

5-2-3 Basic Design Drawings

Drawings of house and antenna tower are shown in Fig. 11 to 25.

- Fig. 11 Site Plan (Monrovia)
- Fig. 12 LBS 1st Floor Plan (Monrovia)
- Fig. 13 LBS 2nd Floor Plan (Monrovia)
- Fig. 14 Studio B 1st Floor Plan (Monrovia)
- Fig. 15 Studio B 2nd Floor Plan (Monrovia)
- Fig. 16 Layout of Transmitter house (Monrovia)
- Fig. 17 Layout of Power house (Monrovia)
- Fig. 18 Side Elevation of Antenna & Guyed Mast
- Fig. 19 Site Plan (Gbarnga)
- Fig. 20 Site Plan (Buchanan)
- Fig. 21 Site Plan (Bomi Hills)
- Fig. 22 Layout of Transmitter house (Gbarnga, Buchanan, Bomi Hills)
- Fig. 23 Layout of Power house (Gbarnga, Buchanan, Bomi Hills)
- Fig. 24 Side Elevation of Antenna & Guyed Mast (Gbarnga)
- Fig. 25 Side Elevation of Antenna & Self Supported Tower (Buchanan, Bomi Hills)





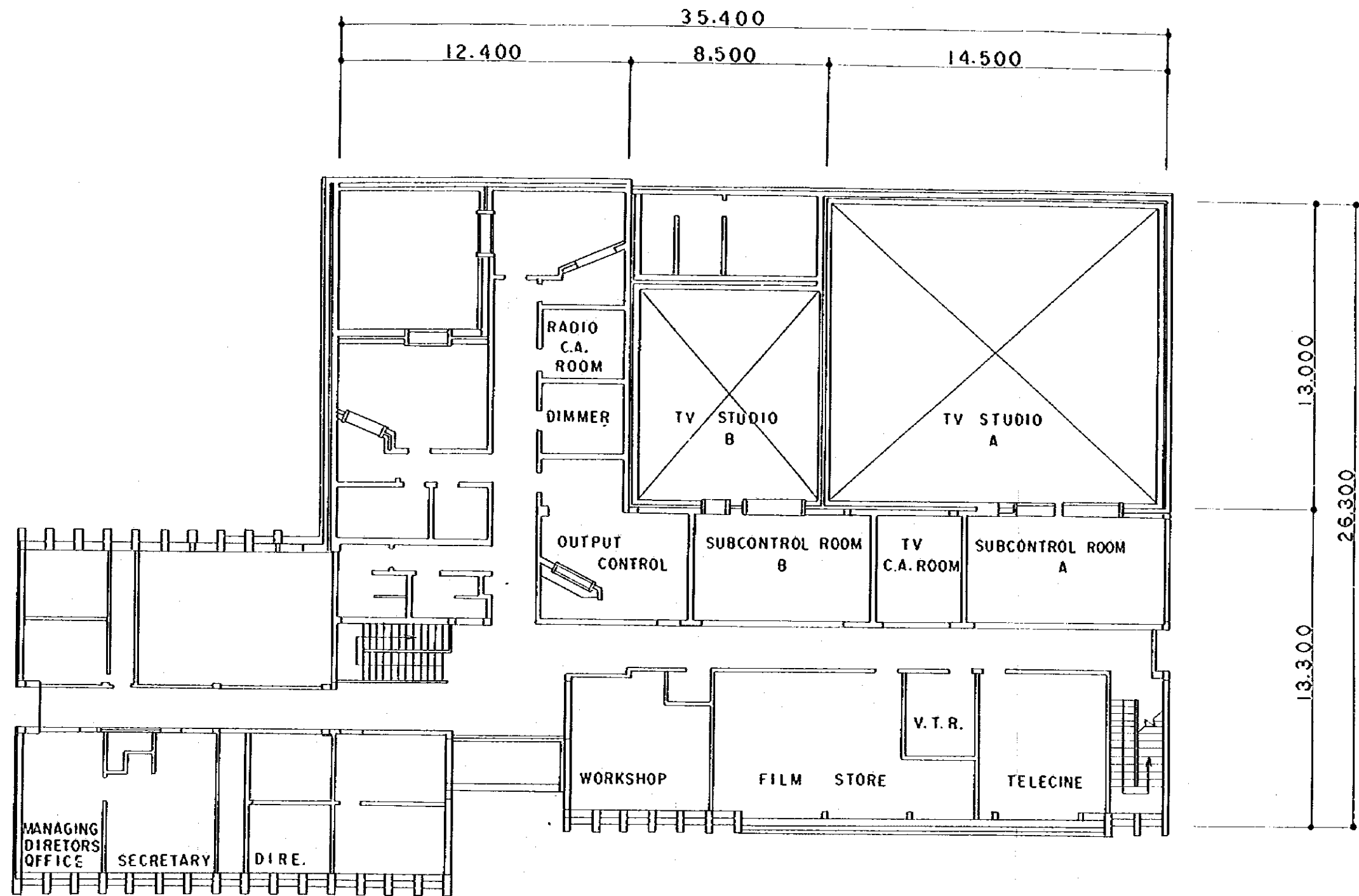


Fig. 13 LBS 2nd Floor Plan (Monrovia)

S 1 : 200



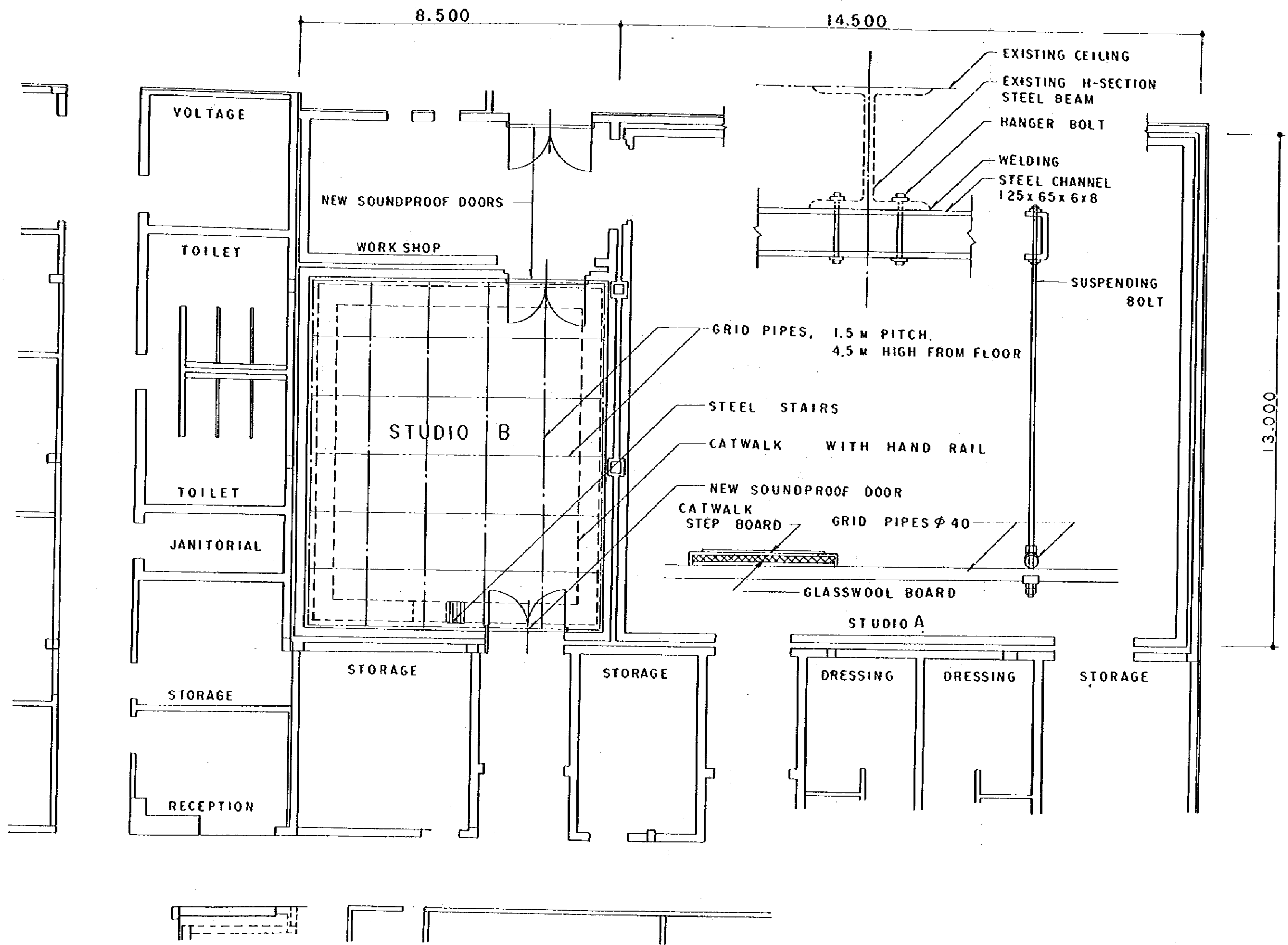


Fig. 14 Studio B 1st Floor Plan (Monrovia)

S 1 : 100

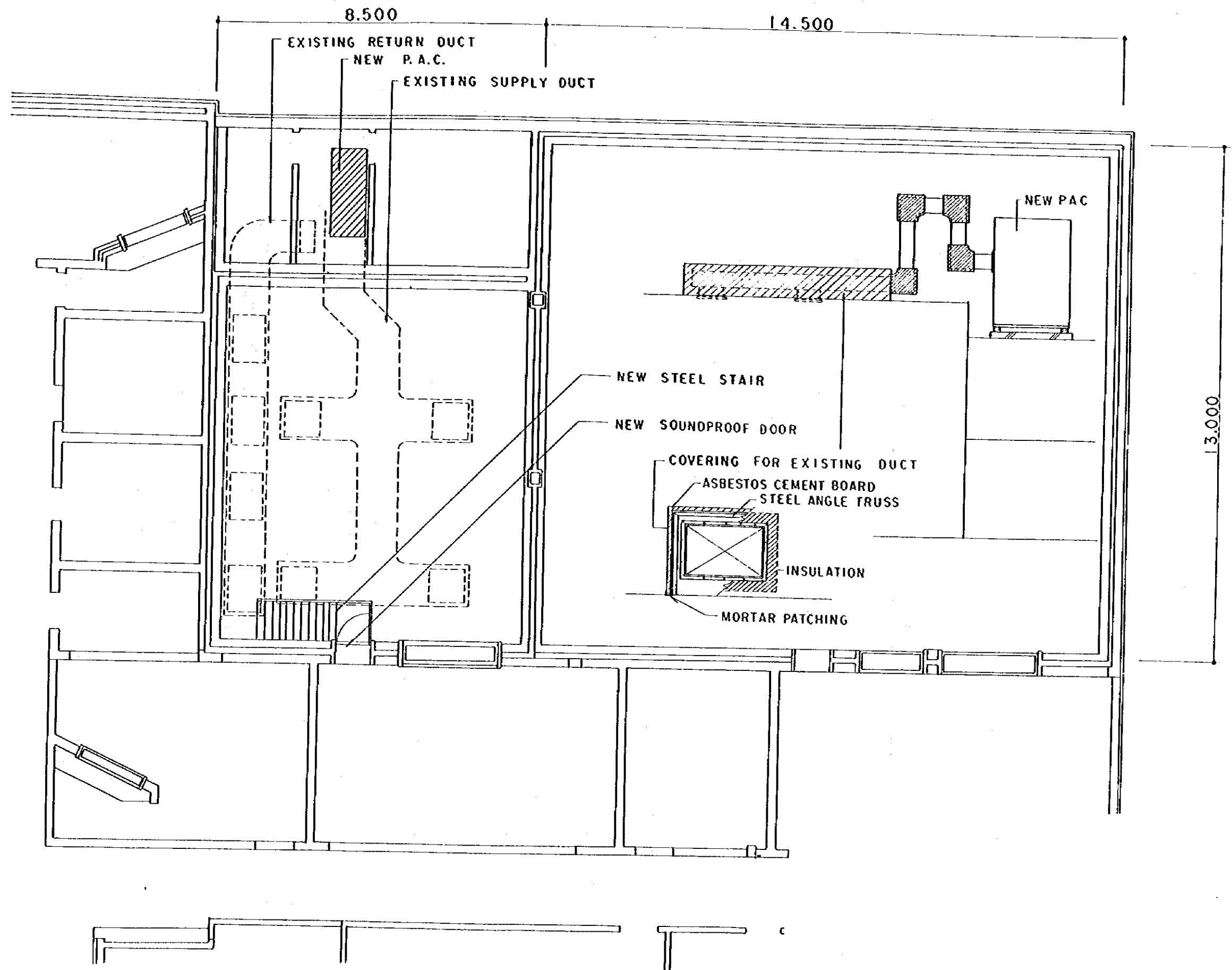
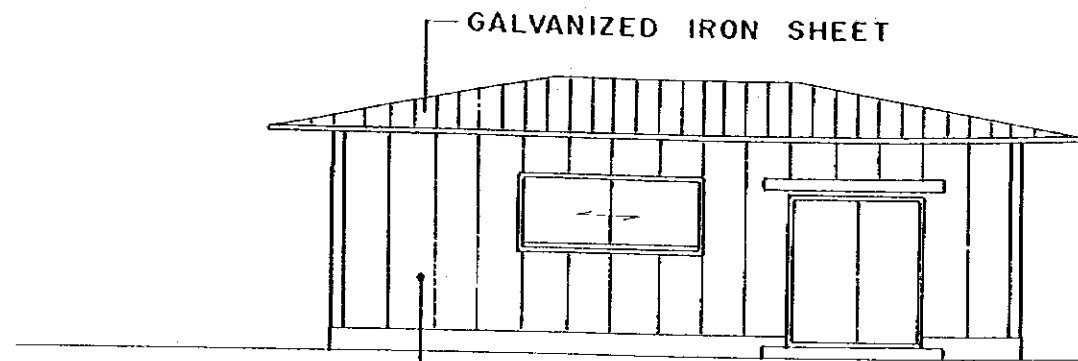
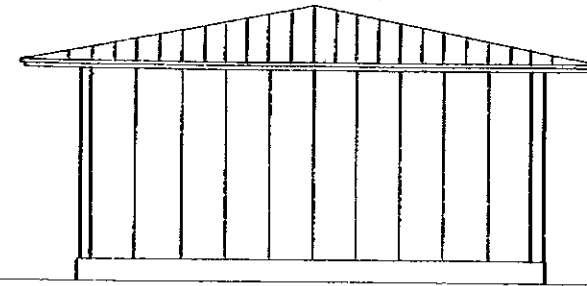


Fig. 15 Studio B 2nd Floor Plan (Monrovia)

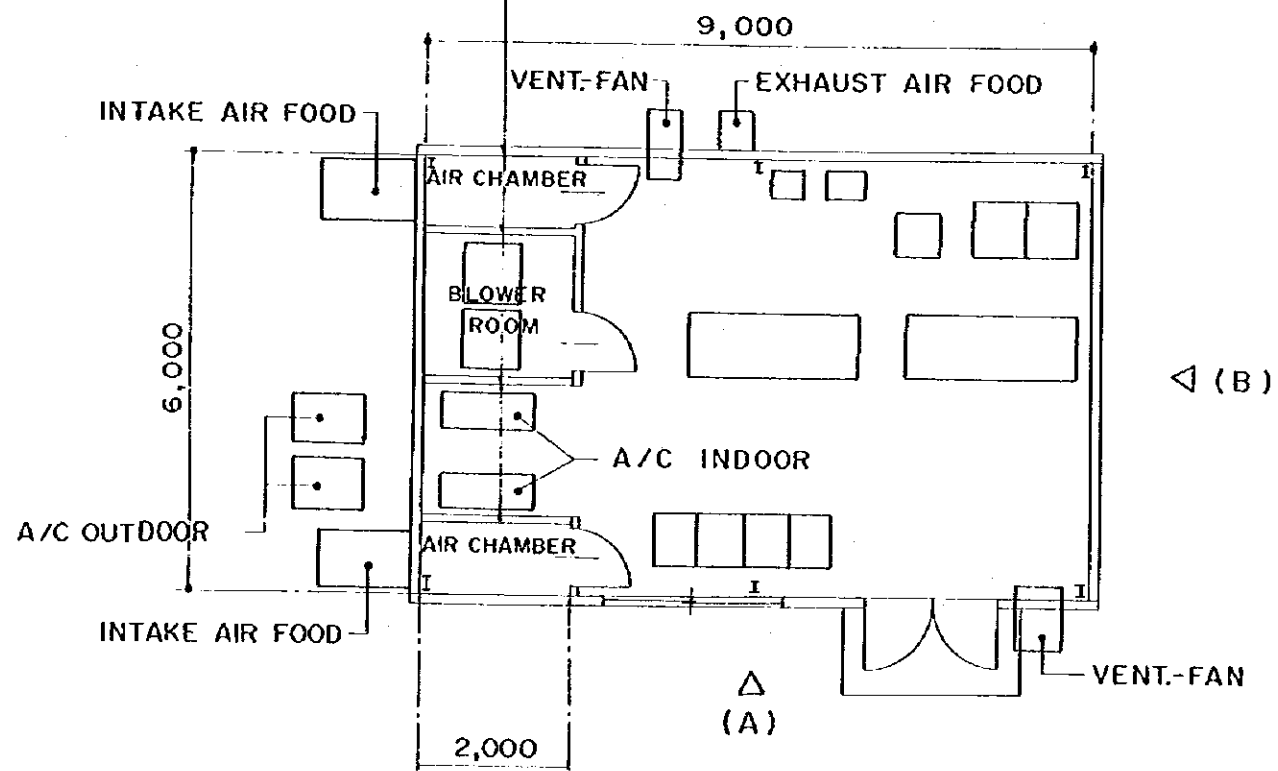
S 1 : 100



ELEVATION (A)

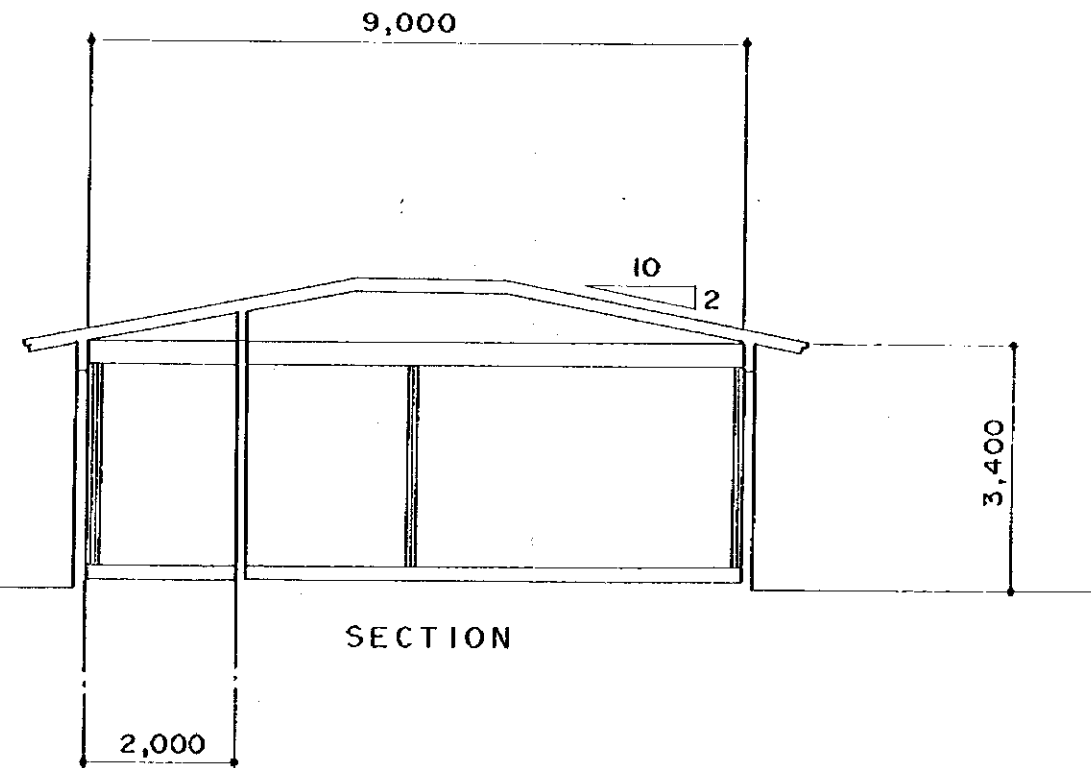


ELEVATION (B)



PLAN

◁ (B)



SECTION

Fig. 16 Layout of Transmitting house (Monrovia)

S 1 : 100

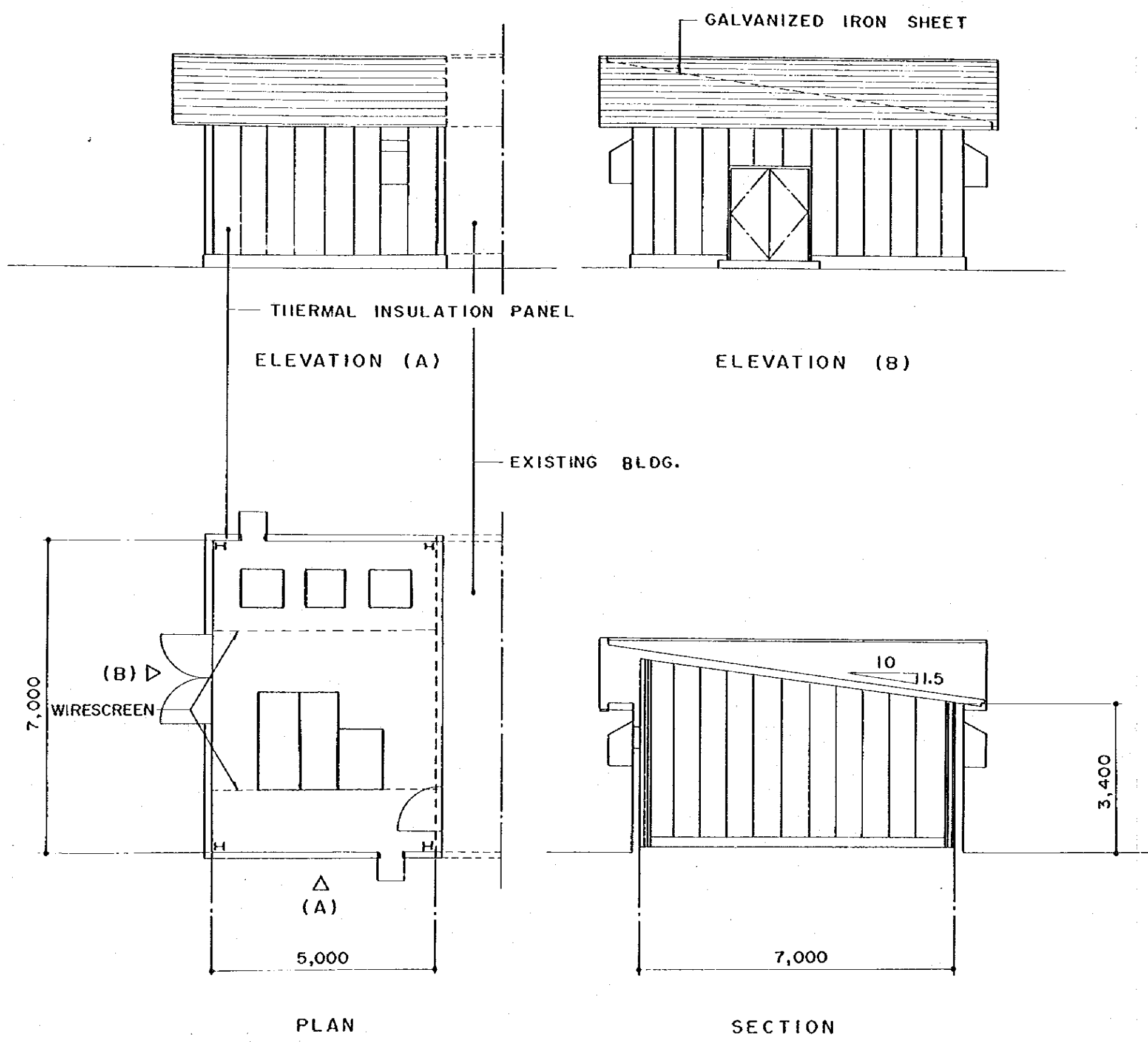
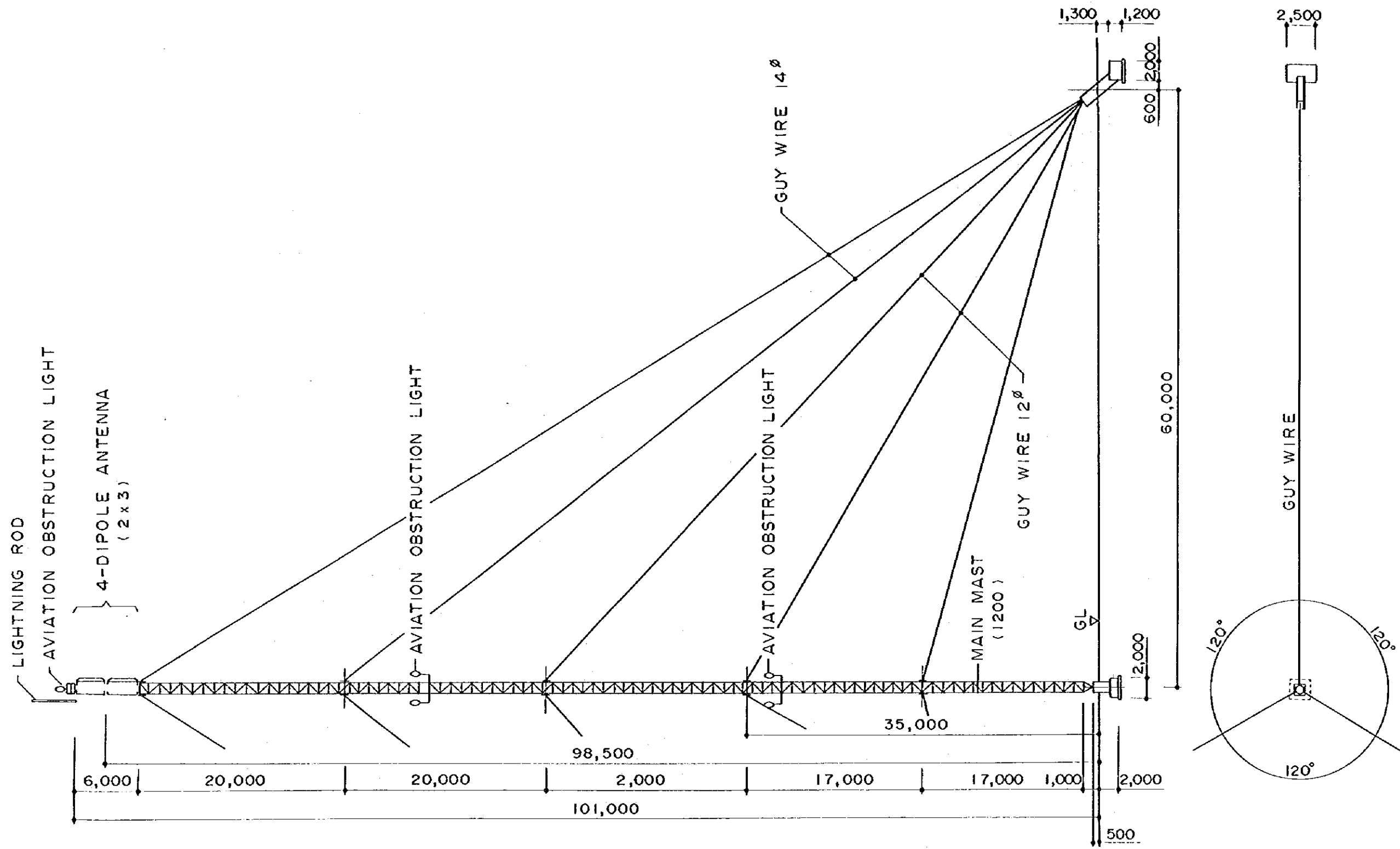


Fig. 17 Layout of Power house (Monrovia)

S 1 : 100



DAYTIME AVIATION OBSTRUCTION MARKING (RED 5R  $\frac{4}{13}$  WHITEN 9.5)

Fig. 18 Side Elevation of Antenna & Guyed Mast

1 : 400

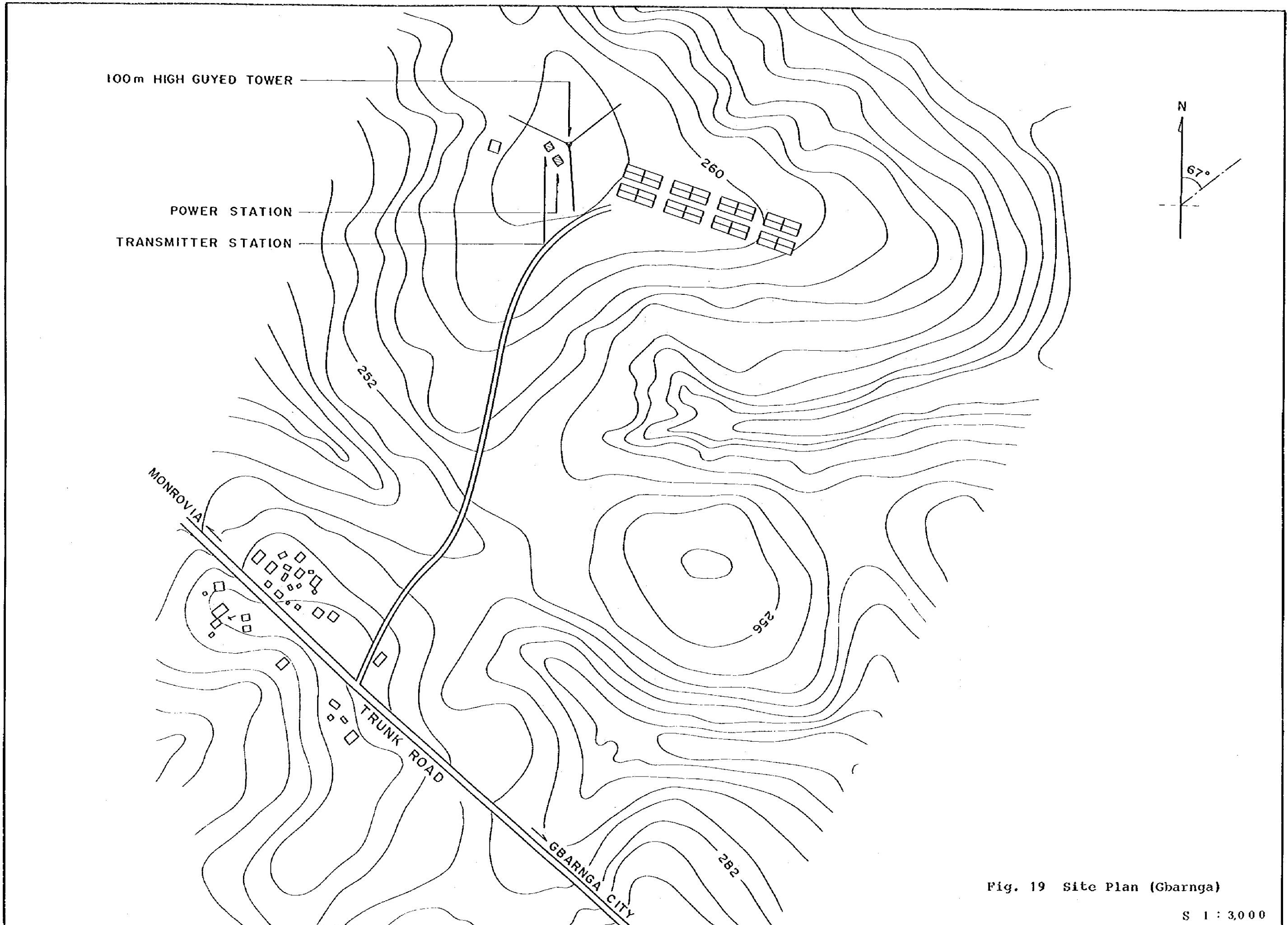


Fig. 19 Site Plan (Gbarnga)

S 1 : 3,000

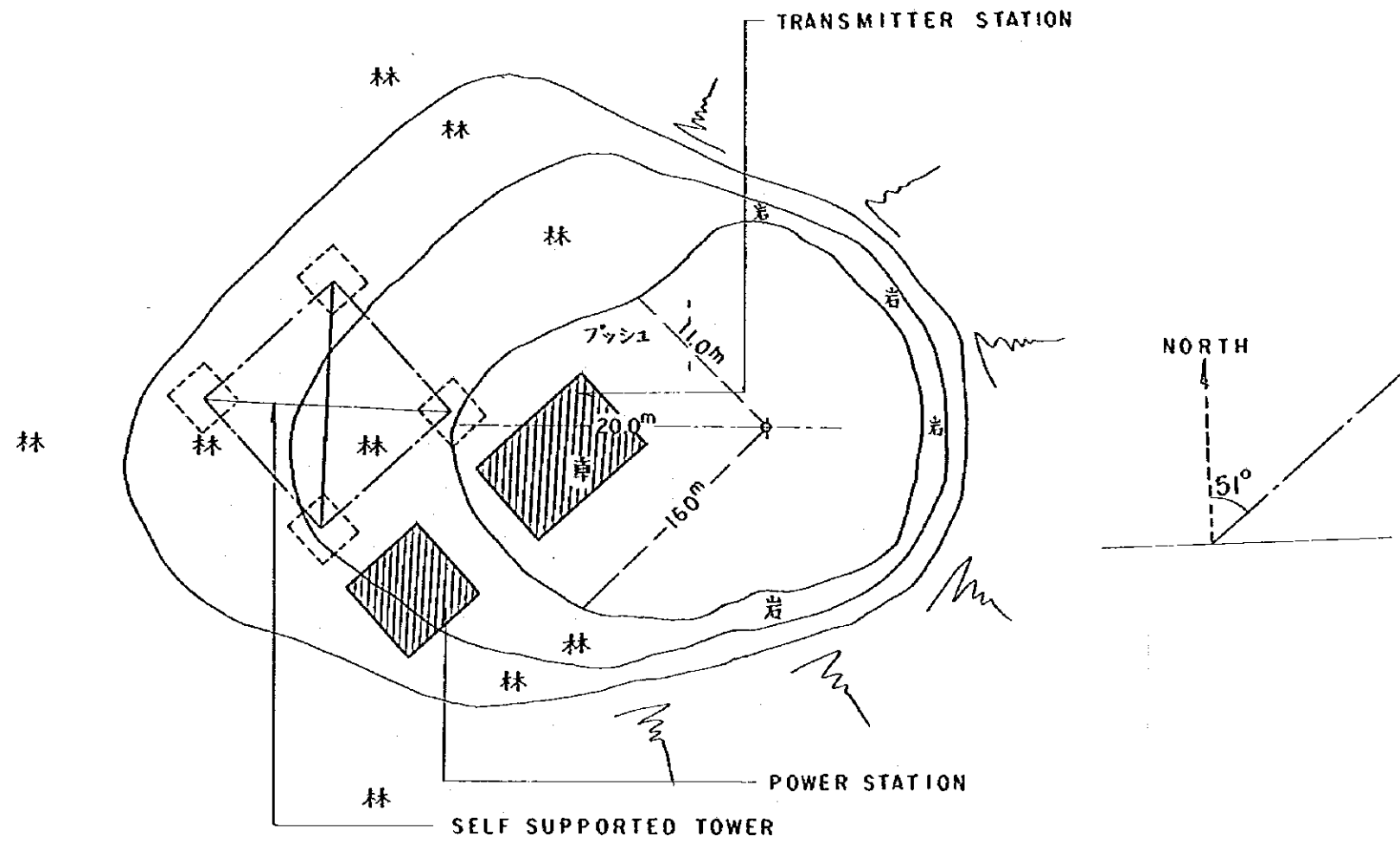


Fig. 20 Site Plan (Buchanan)

1 : 400

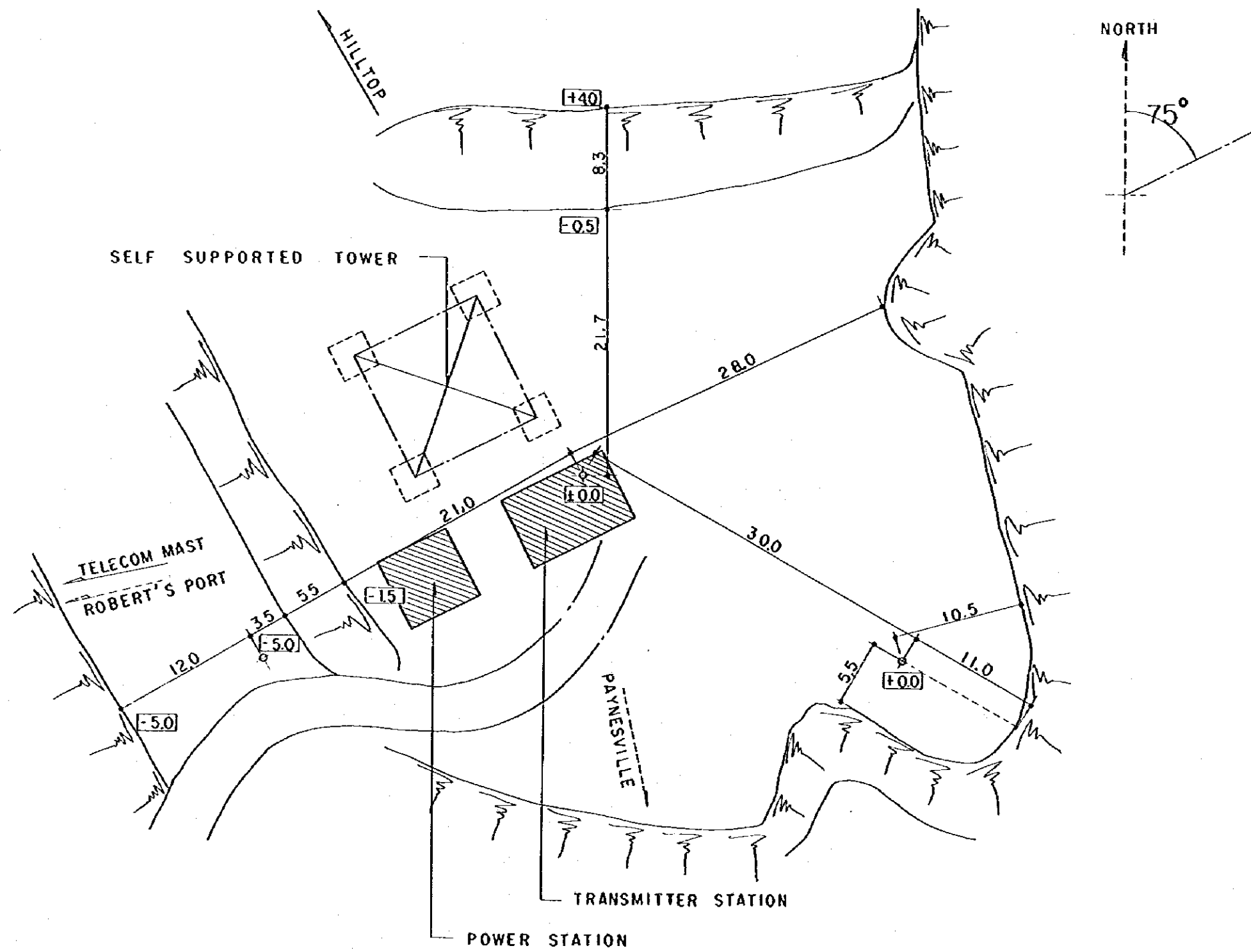


Fig. 21. Site Plan (Bomi Hills)

S 1 : 400



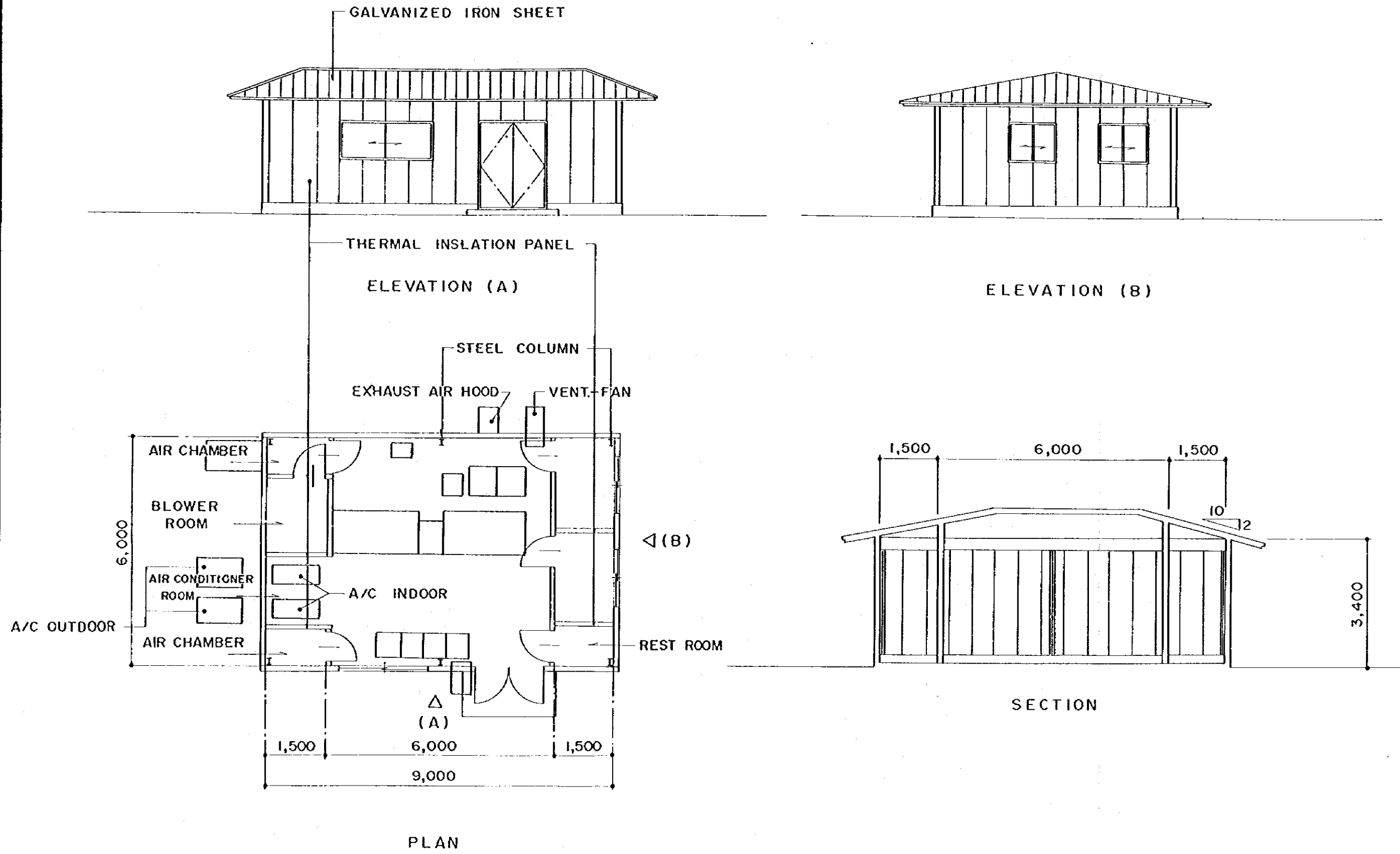


Fig. 22 Layout of Transmitting house (Gbarnga, Bachana, Bomi Hills)

S 1 : 100

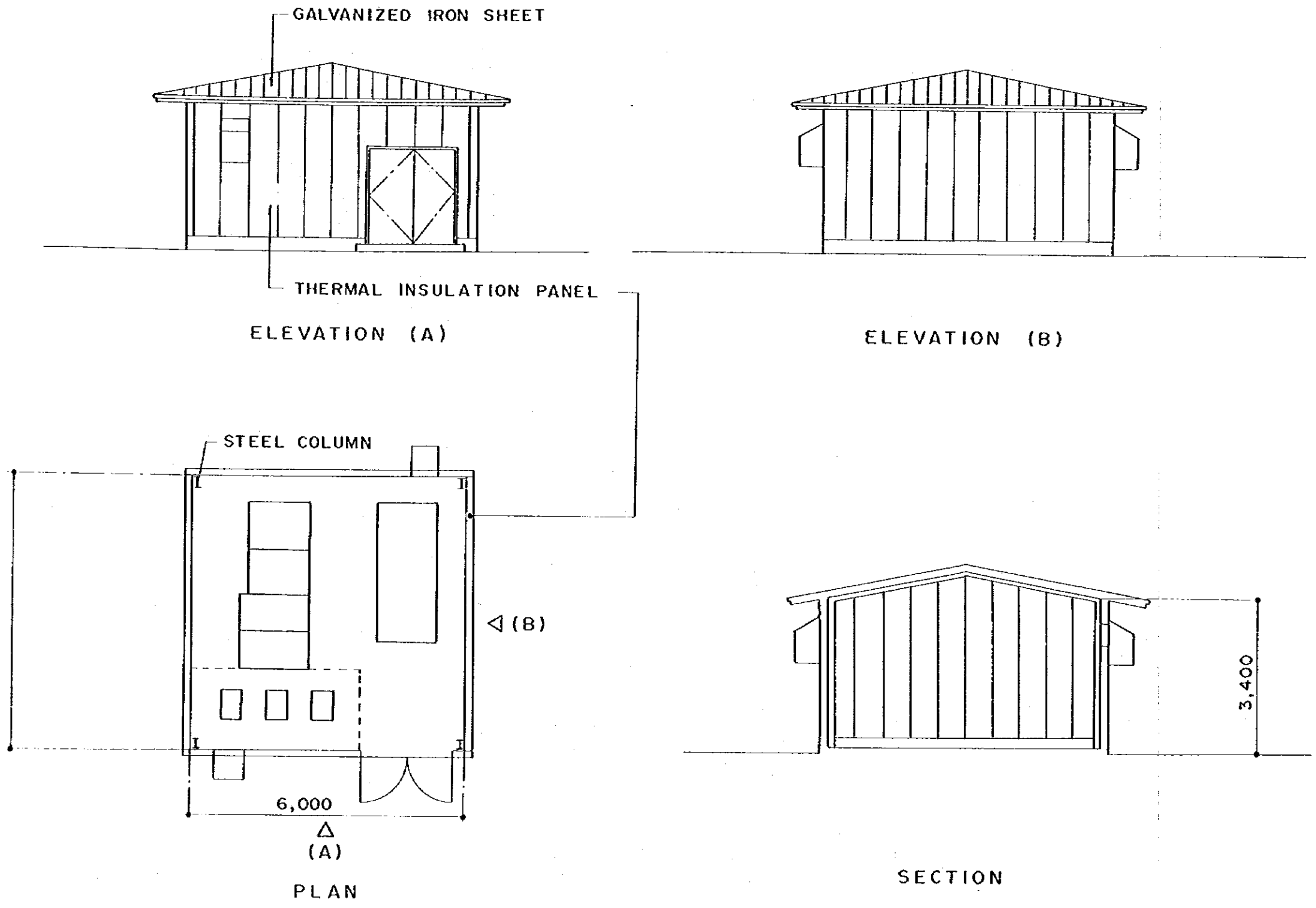


Fig. 23 Layout of Power house (Gbarnga, Bachanan, Bomi Hills)

1 : 100

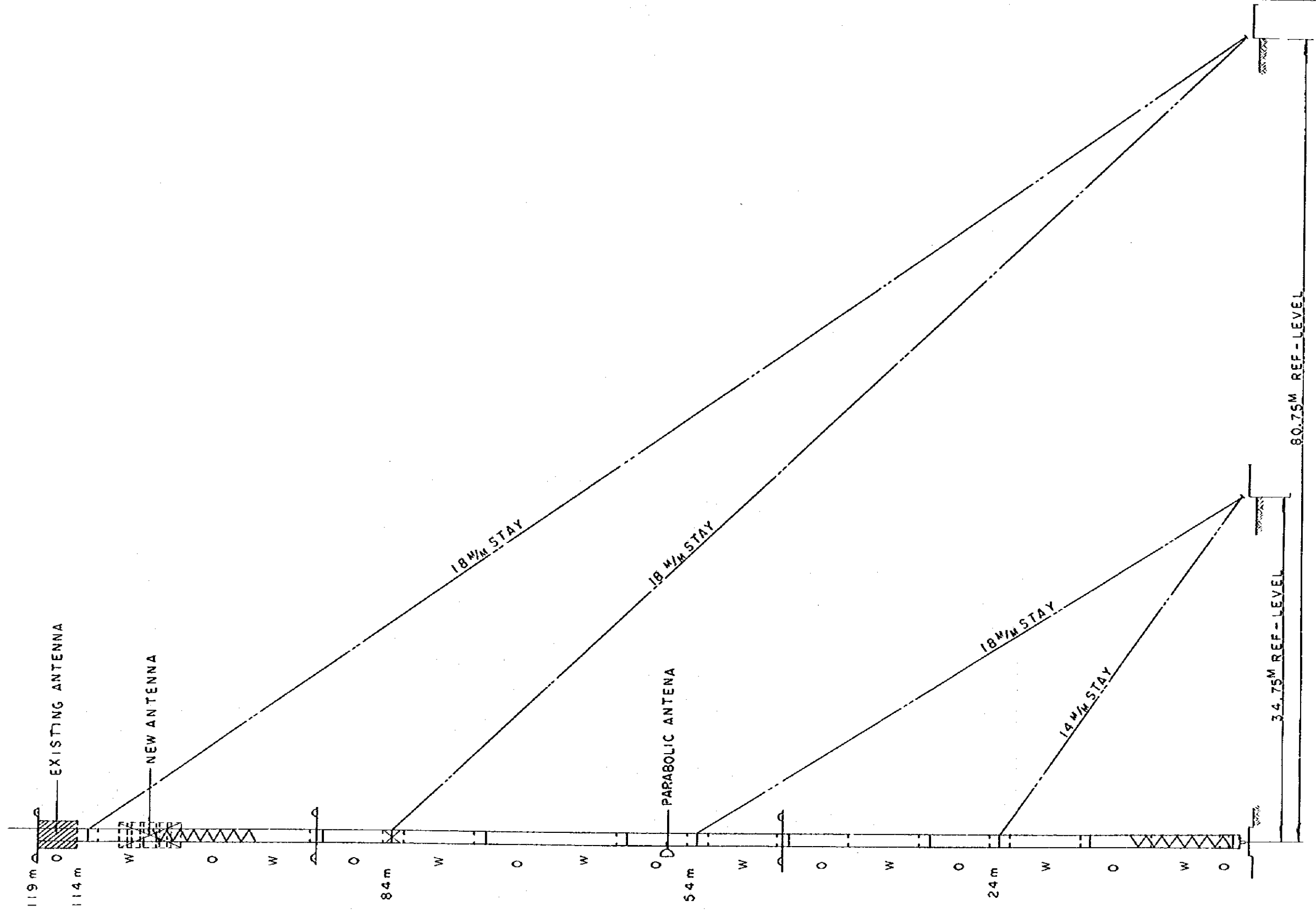


Fig. 24 Side Elevation of Antenna & Guyed Mast (Gbarnga)

1 : 400

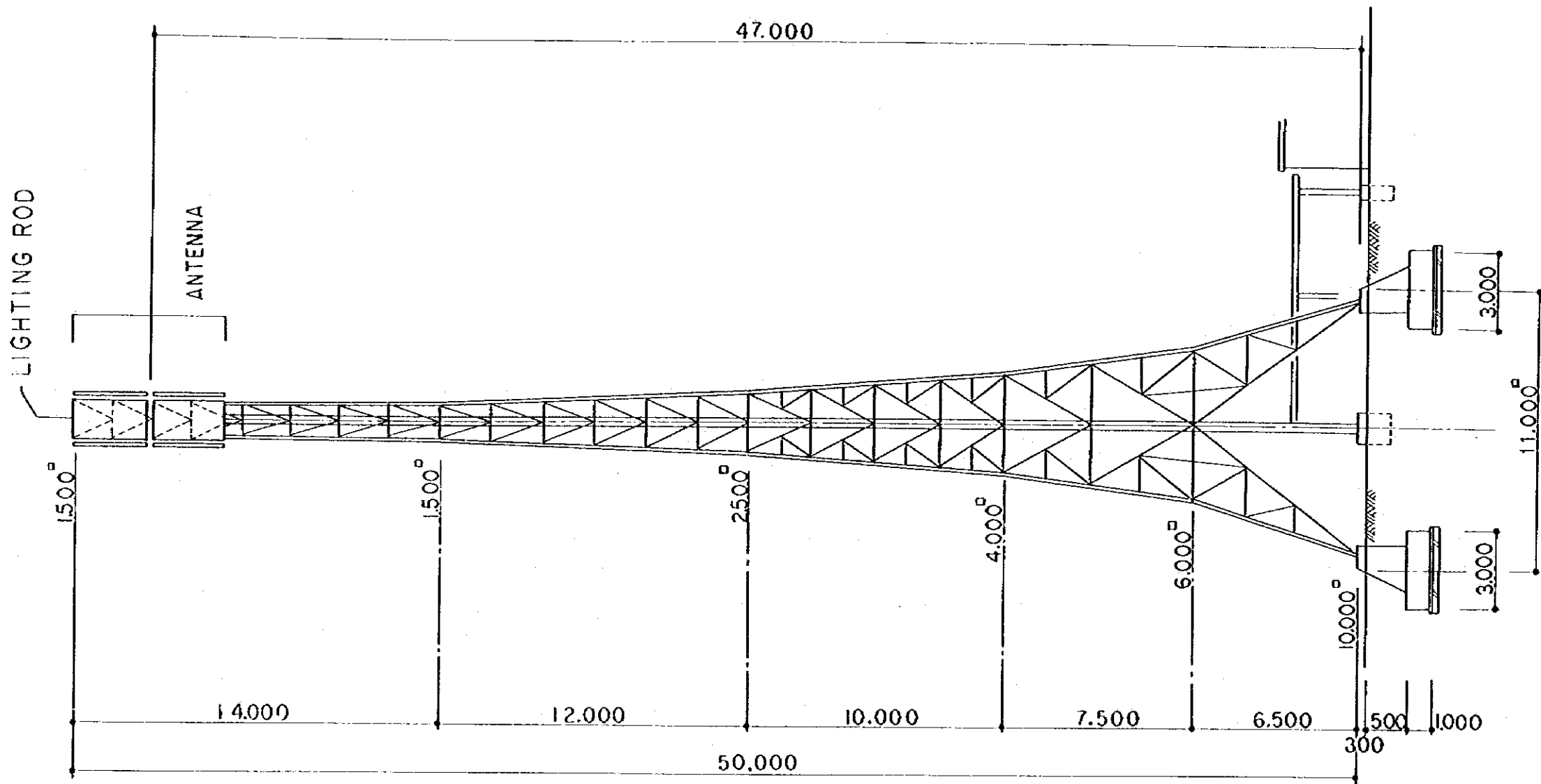


Fig. 25 Side Elevation of Antenna & Self Supported Tower  
(Buchanan, Bomi Hills)

1 : 200



5-3 Cost Estimation

Cost to be borne by the Liberian side for the project is estimated to about \$32,000 as shown in the followings:

Site	\$ 2,000
Access Road	\$ 4,800
Electric Power Line	\$20,000
Drainage and others	\$ 6,000
<hr/>	
Total	\$32,800



**CHAPTER 6**  
**CONSTRUCTION PLAN**





## CHAPTER 6 CONSTRUCTION PLAN

### 6-1 Undertaking Body

LBS is fully conducting the broadcasting business provided with well organized structure and the competent personnels, and is sufficiently qualified as an undertaking body of this project.

PROJECT COORDINATOR TV EXPANSION PROJECT (Broadcasting Dept.) under Director General of LBS, will be in charge of actual execution work and management.

OFFICE of Project Coordinator is in charge of all the contract.

### 6-2 Work Plan

The following items are taken into consideration:

#### (1) General

In order to reduce the number of engineers and experts who are engaging in the construction, works in each station should not be duplicated in the same period.

#### (2) House and Tower

The following works should be conducted principally in the dry season, or in the beginning/last of the rainy season: earth work of house and tower, foundation work, structure work, roofing work, exterior-finishing work, tower construction, outer site work.

Tower construction work should be avoided in the thunderstorm which happens frequently in the last of rainy season.

#### (3) In order to enhance the effect of the project, by serving with high quality program, completion time of works in transmitter station and studio should coincide with.

#### (4) Local Transmitting Station

Considering program relay, the works for setting up of off-air systems at Buchanan and Bomi Hills should be conducted after the power-up of the master station (Monrovia).

The staff of LBS have few experience to operate the Japanese-made equipment related to the project. In the installation works in Monrovia LBS Head Office, some equipment are being used daily, therefore, relevant coordination between new and old ones is essential related to building and equipment rehabilitation work otherwise, the difficulties might be appeared during the process of the project.

### 6-3 Category of Works and Funds

The works conducted by grant aid and Liberian government are as follows:

#### (1) Grant Aid Portion

- 1) Broadcast facilities and their installation, wiring, setup and adjustment.
- 2) Construction of house and tower
- 3) Transportation of broadcasting facilities, materials of house and tower from Japan to Liberia, and in land transportation from Monrovia Port or others to the sites.

#### (2) Work to be executed by Liberian Government

- 1) The following matters related to the proposed sites of transmitting stations:

procurement of the site

cleaning and treatment of trees in and near the site

site preparation

construction of access road to the site

cabling of electric power

water supply and drainage

#### 2) Transportation

Custom clearance and duty free procedure to be taken at Monrovia Port or others.

3) Others

Other expenses necessary for the project which are not included in the scope of works of the grant aid.

6-4 Work Schedule

The work needs about 21 months after the Exchange of Notes. Tentative construction Schedule is shown in Table 8.

Table 8 Tentative Construction Schedule

	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Exchange of Note		▽																						
Detail Design																								
Contract																								
Monrovia Studio B	Building																							
	Facilities																							
Gbarnga Transmitter Station	Building & Tower																							
	Facilities																							
Monrovia Transmitter Station	Building																							
	Facilities																							
Buchanan Transmitter Station	Building & Tower																							
	Facilities																							
Boni hills Transmitter Station	Building & Tower																							
	Facilities																							

 Work in JAPAN
  Transportation
  Work on site

6-5 Management Plan

(1) Personnel Plan

After the accomplishment of the project, increase of the operation staff of local transmitting station, and TV production staff is indispensable. At present, the number of TV technical staff who are engaging in the maintenance and operation of equipment is quite few, counting about ten. Although reliability of the latest TV equipment has been greatly improved, it is necessary to train their technical abilities through operation and maintenance work in order to cope with the emergency and failure. Even so transmitting stations will be operated unattended in future, the attended operation is desirable at the first stage. For attended operation, each station needs at least three persons considering the present broadcast hours, on 5 day working week, and normally four persons, considering emergency and holidays. Consequently, 12 persons are required for three stations.

Although technicians who are in charge of equipment do not engage in the program production at present, participation of technicians is indispensable to ensure high quality video and audio signal. Therefore, three technicians for production and other three for maintenance, totally six persons are necessary.

In order to improve and expand the content of the programs within the present on-air hours, production by two studios is essential. For the purpose, seven persons including camera man, mixer, light man, switcher etc., are needed.

As mentioned in above, totally 25 persons consisting of 18 technical staffs and 7 production personnels should be increased to operate and maintain the new equipment after the accomplishment of the project.

The LBS which is the sole enterprise in TV broadcasting, have to employ qualified new graduates and give them systematic training including "On the Job Training" (OJT) to cope with future installations.

(2) Maintenance of Broadcasting Facilities

In order to maintain the TV service with high quality and stability for a long term, the countermeasures for keeping the performances of equipment are important. For the purpose, periodical check, preventive maintenance, shorten of repair time by the provision of spare parts etc., are requested.

Generally, annual maintenance cost is 1% of total facility price, and this amount is necessary after the inauguration of the project.

At present, maintenance staff who are belonging to the Engineering Dept. are quite few in number, about five. However, after the completion of the project, more maintenance staffs will be necessary in accordance with the expansion of facilities and equipment.

As LBS staffs are not familiar with the new facilities introduced by the project, it is desired to conduct OJT during the period of installation for improving the knowledge of new facilities and level up of handling technique.

Furthermore, to enhance the technical ability of all staff, dispatch of experts is recommended.

(3) Management Cost

The management and maintenance cost will be inevitably increased after the inauguration of the project. LBS should appropriate the necessary amount of the budget for the regular operation and maintenance.

To ensure the budget besides the subsidy, LBS will make attempt in increasing revenue by CM which can contribute to the improvement. On the other hand, early introduction of audience fee system is expected.

1) Personnel Expenses

Assuming 25 persons are newly employed and their average salary is \$200 per month, the total increase of personnel expenses will be about \$60,000 a year.

2) Electricity Cost

With an increase of output power of Monrovia transmitting station and the opening of three regional transmitting stations and others, the total electricity cost will be \$75,000 a year.

Monrovia Transmitting Station	approx. \$20,000
Monrovia Studio	" \$15,000
Gbarnga Transmitting Station	" \$15,000
Bomi Hills Transmitting Station	" \$15,000
Buchanan Transmitting Station	" \$10,000

(Above data is calculated under the assumption that operation hours of a transmitting station is 2,860 hours/year; and power charge is \$0.166 per kWh)

3) Maintenance Cost

In order to maintain all of the TV broadcasting facilities, it is necessary to ensure the budget for maintenance amounting to about 1% of total construction cost including building etc.

4) Lease Cost of TV Line (Monrovia to Gbarnga)

As it is not yet fixed, it should be appropriated.

6-6 Diffusion of TV Receiver

It is expected that about one million of the people could be served with TV broadcasting with the completion of the project.

According to the investigation conducted by the Liberian public organization on the public preference of television reception, more than 85% of people living in the unserved areas showed an interests in purchasing receiver set, and some of TV receiver set sold in the market can be afforded with the average monthly income of ordinary worker. Besides, the LBS has been supplied TV receivers with reasonably low price than in the market.



Under such social circumstance assuming 1% of total population (ie., 800 thousands) purchase TV receiver sets, then 80 thousands TV receivers will be increased, resulting total diffusion of 110 thousands sets together with present sets being used.

As explained in above, it is expected in accordance with the expansion of the broadcasting network by this project, that the diffusion of TV receiver set will be increased and more peoples will be able to watch the TV program compared with present state and the first target will be achievable.

#### 6-7 Procurement Plan

All of the facilities and materials for the project will be procured from Japan except materials such as cement, sand, gravel, timber etc.

Although some iron bar are available in Liberia, they are expensive and its quality is not uniform, so it will be procured from Japan.

Construction materials for house and tower such as wall material, iron frame, thin iron-plate for A/C duct etc., will be brought from Japan and processed in Liberia to reduce the project cost.

Laborers except engineers and specialist will be available in Liberia.

**CHAPTER 7**  
**PROJECT EVALUATION**



## CHAPTER 7 PROJECT EVALUATION

At present, TV broadcasting in general plays an important role for the daily lives of the nation in view of its immediacy not only for the delivery of political and economical informations but also social lives. In developing countries, it would serve as an important means of the government publicity and educational services with its isochronism, extensive coverage to promote the also for the education of the people and development of the country.

After the completion of the project, the present coverage, of Liberian TV broadcasting which served only in Monrovia estimated at about only 10% of total population, will be increased to about 45%, enabling approximately more one million people to receive TV broadcasting program.

When the rehabilitation and improvement of TV studio B is completed by the project, the Monrovia Station will have two studios. This will double the time available for program production and also upgrade the program producing functions, making it possible for LBS to produce qualified programs by using the new function to the utmost with extended production time and new technologies.

The increased hours due to the availability of studios will offer the possibility of developing new school and adult education programs, and providing also the basis for extending the total broadcast time.

It is expected that the project will produce the following definite effects of broadcasting service in the Republic of Liberia.

### 1. Promotion of Education

At present, the LBS is broadcasting many programs purchased from abroad. Imported programs can meet the purpose of education in the fields of natural science, but the LBS will have to produce its own programs for education in the areas of cultural and social sciences which have distinct national traits and characteristics, varying from country to country.

The studio facilities consolidation under the project will enable the LBS to produce such educational programs for themselves, and upgrade the level of its educational broadcasting service as a whole as well as meet with various viewer demands.

Programs for adult education account for a large portion of the LBS's programs at present. With the completion of the studio facilities consolidation, LBS will be able to realize its plan to initiate school hour broadcasting service.

## 2. Elimination of Regional Differences in Public Services

TV broadcasting in Liberia now covers only the capital city, Monrovia and its surrounding areas. When the coverage is expanded under the project, rural inhabitants whose illiteracy rate is comparably high and being limited in the way of information transmissions, will be given much opportunity to learn the official language (English) and acquire the knowledge of health and hygiene.

As pointed out widely, constitution of many tribes with different dialects is one of the hindrance for the unification of the country, and the Government of Liberia has been endeavouring to solve it with the diffusion of education.

Diffusion of English in the Liberian nation would greatly contribute to the publicity of Governmental policy and exchange of opinions among many tribes, and also for penetration of common sense for the unification of the whole nation.

Owing to the poor sanitary condition and the lack of knowledge for child and mother hygiene, the infant mortality in Liberia is as high as 15 %.

Distribution of printed manuals is effective only to some extent in improving the people's knowledge about health and hygiene because of their low literacy rate. Hygiene education by TV broadcasting will produce an immense effect as it appeals directly to the visual sense of the audience.

## 3. Improvement of Agriculture Techniques

At present, traditional agriculture by slash and burn method is widely popularized, however as the climate condition of the country is blessed with tropically high temperature and plenty of rainfall, resulting to massive river flows, it is expected that the production of rice could be promoted, one of the Governmental policies, by diversifying the latest agricultural techniques.

Specifically, it will be possible to augment the rice production by utilizing TV broadcasting to provide timely agricultural advice (cropping season, harvesting operation, insect control etc.) and fast agricultural information service (introduction of new cultural methods, new species etc.), and this in turn will greatly contribute to Liberian agricultural development in the future.



**CHAPTER 8**  
**CONCLUSION AND RECOMMENDATIONS**





## CHAPTER 8 CONCLUSION AND RECOMMENDATIONS

### 8-1 Conclusion

The project was formulated to expand the TV broadcasting network for the purpose of promoting education, improving health and hygiene conditions and enhancing socio-economic development. A detailed study of the project in terms of its social significance, adequacy and effect proved that it would have immense promotional effect on Liberia's national development.

The project will play a vital role in eliminating the large regional differences in education and infrastructure now existing between urban and rural areas, and will also exhibit large effect in promoting the national education along with the Government policy.

It is therefore concluded that the project implementation with Japan's grant aid can be justified as highly significant.

### 8-2 Recommendations

In order to implement the project smoothly and exhibit its effect to the fullest, the competent Liberian authorities are required to urge the recommendations given below.

- (1) Increase of budget and training of staff in the operational sectors.

The LBS is facing financial and operational difficulties owing to the delayed payment of governmental subsidy, however it is desired to extend further efforts for dissemination of TV sets and for securing the financial basis by immediate introduction of the subscriber's fee system which is under study.

The LBS should also employ skillful staffs and conduct systematic training of new personnel.

(2) Establishment of Facilities Maintenance System

In order to maintain all broadcasting facilities and equipment under satisfactory service condition and to serve with excellent picture and sound, it is necessary to ensure sufficient amount of budget and personnel for maintenance and to establish the engineering standards.

(3) Training of Personnel

The LBS is making positive efforts for dispatching its personnel to overseas training institutions to train the staff with advanced knowledge and technology. New techniques obtained by such personnel during the period of their overseas training course should not be left of their own expertised knowledge, and should be diffused extensively by making such personnel as instructors in training courses organized to raise the level of other staff. It is also recommended that the LBS would request relevant Japanese organizations to provide the services of Japanese experts in TV broadcasting technology and to accept Liberian trainees in the training courses in Japan.

(4) Completion of the project will bring Liberia's first-phase broadcasting network development plan to a close. It is hoped that the second-phase plan will be put into execution at an early date to build new transmitting stations in areas not covered by the project and consolidate Studio A facilities necessary for further program upgrading and diversification.

## APPENDIX



I. Members of Survey Team and Schedule

MEMBERS OF SURVEY TEAM

<u>Name (in charge)</u>	<u>Occupation</u>
Shin-ichi Takeuchi (Leader)	Investigating Officer, International Cooperation Dept. Telecommunication Policy Bureau, Ministry of Posts and Telecommunications
Tatsuo Suzuki (Coordination)	Basic Design Division, Grant Aid Dept. Japan International Cooperation Agency
Toshio Sato	International Division, All Japan Radio & (General, Broadcasting Engineering) Television Engineering Services Co., Ltd.
Susumu Toyoda (Broadcasting Engineering)	- ditto -
Akihisa Asano (Tower & Housing)	Architecture division - ditto -

## SCHEDULE IN LIBERIA

13, Jan. 1985 - 18, Feb. 1985 (37 days)

### Survey Site & Survey Item

Jan./

- 13 (Sun) Iv. Narita
- 14 (Mon) Ar. London
- 15 (Tue) Ar. Monrovia
- 16 (Wed) Courtesy visits to Japan Embassy, Ministry of Foreign Affairs, LBS, Minister of Information, LTC
- 17 (Thu) Explanation on Grant AID and Inception Report at LBS, Survey of studio & transmitting station
- 18 (Fri) Survey & Meeting at Liberian Power Corporation & LTC. Survey of Construction Cost
- 19 (Sat) Discussion on the Site by Maps
- 20 (Sun) Preparation of Measuring Instruments
- 21 (Mon) Survey at Bomi Hills
- 22 (Tue) - Ditto -
- 23 (Wed) Pre-survey at Buchanan (Selection of 3 Sites)
- 24 (Thu) Meeting for Survey of Gbarnga, Study on Preset Site
- 25 (Fri) Pre-survey at Gbarnga (Selection of 5 Sites)
- 26 (Sat) Survey at LTC in Monrovia, Survey on Construction Condition
- 27 (Sun) Survey at Gbarnga (Field Intensity, Meeting at LTC)
- 28 (Mon) - Ditto - (Measuring of Site)
- 29 (Tue) - Ditto - (Survey of Service Area)
- 30 (Wed) Survey of Power System & Studio at LBS
- 31 (Thu) Meeting with Producers, Survey of Power System at LBS

Feb./

- 1 (Fri) Survey of Power Room, Maintenance, Studio Facility at LBS
- 2 (Sat) Survey of Production, Program Continuity & Air Condition at LBS
- 3 (Sun) Discussion on Survey in Team
- 4 (Mon) Survey & Meeting of Improvement of Studio at LBS  
Mr. Takeuchi & Mr. Suzuki arrived.
- 5 (Tue) Mr. Takeuchi & Mr. Suzuki visit Japan Embassy, Ministry of Foreign Affairs & LBS; Survey of construction condition
- 6 (Wed) Survey of foundation at Gbarnga, Preparation of Survey of Buchanan
- 7 (Thu) Survey at Buchanan (Field Intensity)
- 8 (Fri) - Ditto - (Measuring of site, Survey of Electricity & TV Receiving Condition)
- 9 (Sat) - Ditto - (Survey of Service Area)
- 10 (Sun) Survey of Transmitter & Antenna at LBS
- 11 (Mon) Meeting in Team
- 12 (Tue) Confirmation on Project with LBS, Meeting, Survey of TV Interference
- 13 (Wed) Meeting with LBS on Minutes, Drawing of Studio
- 14 (Thu) Exchange of Minutes, Report to Japan Embassy
- 15 (Fri) Lv. Liberia
- 16 (Sat) Ar. London
- 17 (Sun) Lv. London
- 18 (Mon) Ar. Narita



II Minutes of Discussions  
on  
Educational Television Broadcasting Project  
In  
the Republic of Liberia

In response to the request by the Government of the Republic of Liberia, the Government of Japan decided to conduct a basic design study on the Educational Television Broadcasting Project (hereinafter referred to as "the Project") and the Japan International Cooperation Agency, an official agency responsible for the implementation of technical cooperation programme of the Government of Japan, despatched a study team (hereinafter referred to as "the Team") headed by Mr. Shinichi Takeuchi, Special Advisor for international cooperation, Communication Policy Bureau, Ministry of Posts & Telecommunications, from January 13, to February 18, 1985.

The Team conducted a field survey, held discussions and exchanged views with the officials concerned of the Government of Liberia.

As a result of the survey and discussions, both sides have agreed to recommend to their respective Governments to examine the result of the study attached herewith towards the realization of the Project.

Monrovia, February 14, 1985

武内 新一  
Shinichi Takeuchi  
Team Leader  
Japanese Study Team

P. L. Nalbow  
Dr. Peter L. Nalbow  
Director-General  
Liberia Broadcasting System

### Minutes

1. The objective of the Project is to provide facilities and equipment for the establishment of television broadcasting networks in order to promote educational and cultural activities.
2. The Liberia Broadcasting System is responsible for the implementation of the Project on the Liberian side.
3. The Team will convey to the Government of Japan the intention of the Government of Liberia that the former takes the necessary measures to cooperate in implementing the Project and providing the facilities and equipment listed in Annex I within the scope of the Japanese economic cooperation programme in grant form.
4. The Government of Liberia will take the necessary measures listed in Annex II on condition that the grant assistance by the Government of Japan is extended to the Project.
5. Liberian side understood the Japanese grant aid system explained by the Team which includes a principle of use of Japanese firms for the implementation of the Project.

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1. Upgrading of transmitting facilities of Monrovia TV station

- Transmitter
- House for transmitter
- Transmitting antenna
- Programme link
- Engine generator, etc

2. Construction of transmitting stations

According to priority, construction sites are as follows:

(1) Gbarnga

- Transmitter
- House for transmitter
- Transmitting antenna with mast
- Programme link
- Engine generator, etc

(2) Buchanan

- Transmitter
- House for transmitter
- Transmitting antenna with mast
- Off air receiver
- Engine generator, etc

(3) Bomi Hills

Same as (2) Buchanan

3. Improvement of TV studios

- Video production equipment
  - Audio production equipment
-

- 
- Monitoring equipment
  - Colour camera
  - Lighting equipment
  - 3/4 inch U-matic VTR
  - Telecine chain
  - Air conditioning facilities
  - Other necessary facilities

- 
1. To secure the lands necessary for each transmitting stations.
  2. To carry out such preparation before commencement of construction works in each transmitting site as follows:
    - 1) clearance
    - 2) leveling
    - 3) access road
    - 4) electric power line (both for temporary and ordinary use)
    - 5) water supply and drainage
  3. To confirm the location of the equipment to be installed at Liberia Telecommunications Corporation for the programme link.
  4. To ensure prompt unloading, tax exemption, customs clearance at the ports of disembarkation in Liberia and prompt internal transportation of the products purchased under the grant.
  5. To exempt the Japanese nationals concerned from custom duties, internal taxes and other fiscal levies imposed in Liberia with respect to the supply of the products and services for the Project.
  6. To provide necessary permissions, licences and other authorizations for carrying out the Project.
  7. To bear all expenses other than those to be borne by the Grant, necessary for the execution of the Project.
-

- 
8. To maintain and use properly and effectively the facilities and equipment purchased under the grant.
  9. To send the following data to the Japan International Cooperation Agency through the Embassy of Japan by the end of February.
    - (1) Data of soil survey at Bomi Hills
    - (2) Data of calculation of strength of the mast at Monrovia
    - (3) Map of electricity distribution



# THE LIBERIAN BROADCASTING SYSTEM

OFFICE OF THE DIRECTOR GENERAL

Ref. LBS/DG/0027/'85

February 5, 1985

Mr. Shinichi Takeuchi  
Special Advisor  
International Cooperation Communications Bureau  
Ministry of Posts & Telecommunications  
JAPAN

Dear Mr. Takeuchi:

Chief Engineers from the International Division of the All Japan Radio and Television Engineering Services arrived in Liberia on January 15, 1985 to begin the basic design study of the Liberia Broadcasting System's Educational Television Project. The team has already travelled to Bomi Hills and Gbarnga and will shortly leave for Buchanan. We are very pleased of the progress being made so far.

With respect to the upgrading of the facilities at Paynesville, we are writing to request the following additional equipment as a priority from your Government:

- a) Rehabilitation of the TV Studios including new cameras *A & B*
- b) Two Telecine
- c) Two ENG Camera Recorder Units
- d) One OB Van
- e) One Standards TV Converter
- f) U-Matic Editing Facilities
- g) Additional Complete Studio

STATIONS ELB3 & ELTV P. O. BOX 594 MONROVIA, LIBERIA-CABLES: BROADCASTS  
TELEPHONE: 271146 - 271250 - 271425

It is our fervent hope that your Government will highly consider this list as part of our desire to expand television services throughout our nation to teach basic illiteracy and hygienic skills to the rural people who make up 70 percent of our population.

Kindest regards,

Sincerely yours,

  
Peter L. Naigow  
DIRECTOR GENERAL



IV. Members of Explanation Team for Draft Final Report and Schedule

Members of Explanation Team

<u>Name (in charge)</u>	<u>Occupation</u>
Naoyoshi Sasaki (Leader)	2nd Basic Design Study Division, Grant Aid Planning & Survey Department JAPAN INTERNATIONAL COOPERATION AGENCY
Toshio Sato	International Division, All Japan Radio & Television Engineering Services Co., Ltd.

Schedule in Liberia

22, May 1985 - 6, June 1985 (13 days)

May 22 (Wed)	Lv. Narita
23 (Thu)	Ar. Brussels
24 (Fri)	Ar. Monrovia
25 (Sat)	Submit the Draft Report to LBS
26 (Sun)	Discussion on the Report and visit at LBS
27 (Mon)	Courtesy visits to Japan Embassy and explanation on Draft Report at LBS.
28 (Tue)	Detailed explanation with LBS on Draft Report
29 (Wed)	Discussion with LBS on Draft Report
30 (Thu)	Meeting with LBS on Minutes
31 (Fri)	Exchange of Minutes, Report to Japan Embassy
June 1 (Sat)	Lv. Monrovia
2 (Sun)	Lv. London
3 (Mon)	Ar. Narita

V MINUTES OF DISCUSSIONS

THE DRAFT REPORT OF THE BASIC DESIGN STUDY ON  
EDUCATIONAL TELEVISION BROADCASTING PROJECT  
IN THE REPUBLIC OF LIBERIA

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At the request of the Government of the Republic of Liberia for grant aid for an Educational Television Broadcasting Project, the Government of Japan decided to conduct a Basic Design Study on the Educational Television Broadcasting Project (hereinafter referred to as "The Project"). Japan International Cooperation Agency (J.I.C.A.) despatched a study team (hereinafter referred to as "The Team") headed by Mr. Shinichi Takeuchi, Special Advisor for International Cooperation, Communication Policy Bureau, Ministry of Posts & Telecommunications, from January 13 to February 18, 1985.

The Mission carried out a field survey and had a series of discussions with the authorities concerned of the Government of the Republic of Liberia.

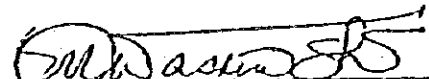
As a result of these survey and discussions, JICA prepared and submitted a Final Draft Report on the Study and despatched a Mission to explain and discuss this Report starting from May 22 to June 3, 1985.

Both parties had a series of discussions on the Report and have agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Monrovia, May 31, 1985

佐々木直義

Mr. Naoyoshi Sasaki  
LEADER OF THE MISSION/JICA.



Mr. G. Moses K. Washington  
DIRECTOR-GENERAL  
LIBERIA BROADCASTING SYSTEM

Attached Sheet:

Major Points of Understanding

1. The Liberian side has principally agreed to the basic design proposed in the Draft Final Report.
2. The Final Report (10 copies in English) on the Project will be submitted to the Liberian side by the middle of July, 1985.
3. The Liberian side understood the system of Japan's Grant Aid Programme and the arrangement to be taken by the Liberian side for realization of the Project.
4. Those points proposed by the Japanese side in Annex 1 - 3 have been confirmed by the Liberian side.

With the Project, CBS should show the following improvement in its TV production and transmission timetable. (Weekdays)

	At Present		With the Project	
	Studio "A"	Studio "B"	Studio "A"	Studio "B"
Program Production Hours	1 hr.	-	2.5 hrs.	2.5 hrs.
Possible Production Time	10:00 - 17:00 (7 hrs.)	-	10:00 - 22:00 (12 hrs.)	10:00 - 17:00 (7 hrs.)
Transmitting Time (Daily)	18:00 - 24:00 (6 hrs.)	-	-	18:00 - 24:00 (6 hrs.)
Number of Programs Productions (Daily)	4 (actual)	-	5	3
Total Program Productions (Daily)	4		8	

NOTE: With the rehabilitation and completion of Studio "B", there should be an increased percentage of local productions as well as an improvement in the quality of production. Transmission hours should also be expanded because of the availability of adequate studio facilities.

## ANNEX 2

In order to examine LBS financial situation, in view of the Project, LBS expenditure and revenue calculation can be done as follows:

Present Annual Operational & Maintenance costs	\$1,347,043
<u>Future Additional Annual Operational Costs (with the Project)</u>	
Personnel Expenses	60,000
Power Expenses	75,000
Maintenance Costs/Spare Parts	<u>60,000</u>
Sub Total	<u>\$1,542,043</u>
<u>Revenue</u>	
Government Subsidy	\$ 880,000
Advertising	1,760,000
*Receiver Fee 2,400,000 X $\frac{1}{2}$	<u>1,200,000</u>
Sub Total	<u>\$3,840,000</u>
Net Benefit	<u>\$2,297,957</u>

\*Assuming objected population 1 million & TV sets one for every ten persons, 100,000 TV sets will be distributed. Also note that the Receiver's fee is \$2.00 X 1,000,000 X  $\frac{1}{2}$ , given 50% successful collection.

PRESENT EMPLOYMENT AND STAFF  
INCREASE, WITH THE PROJECT.

	<u>PRESENT</u>	<u>FUTURE (THE PROJECT)</u>
PRODUCTION	60	67
NEWS	27	27
ENGINEERING	34	52
OTHERS	53	63
<b>TOTAL</b>	<b>184</b>	<b>209 (+25)</b>

NOTE: This figure suggests a slight increase in engineering and production staff due to the high quality of production to be expected, as the result of an increased number of studios and increased percentage of available facilities.

## VI. List of Visited Persons

### Ministry of Information

Mr. Carlton Alexwyn Karpeh                      Minister

### LTC (Liberia Telecommunications Corp.)

Mr. Charles B. Roberts, Jr.                      Managing Director

Mr. Pele Paelay                                      Planning and Development  
Engineer/Manager

### LEC (Liberia Electricity Corp.)

Mr. Andrew K. Dean                                Assist. Manager, Transmission &  
Distribution Department

Mr. Roosevelt K. Logan, I                      Manager, Transmission & Distribution

Mr. Joseph T. Mayor                                Deputy Managing Director/Operations

### LBS-HEAD OFFICE

Dr. Peter L. Naigow                                Director General

Mr. J. Eustace Smith                              Deputy Dir. Gen./Broadcasting

Miss. Wessa Dennis                                Deputy Dir. Gen./Administration

Mr. Sam Bonah                                      Assist. Dir. Gen./Television

Dr. Jerome Boikai                                 Assist. Dir. Gen./Planning,  
Research, Development

Mr. Moses K. Washington                      Assist. Dir. Gen./Special Assist.

Mr. Issac Wesley                                    Chief Engineer

Mr. Peter Amos George, Jr.                      Senior Coordinator/Planning,  
Research, Development

Miss. Victoria Reffell                              Director of Programming and  
Production

Mr. Joseph A. Davies                                Controller

Mrs. Ayodelle T. Weah                              Director of News & Public Affairs

**Ministry of Public Works**

**Mr. James A Tay**

**Physical Planning Division  
Coordinator**

**Mr. Samuel L. Sarwah**

**Chief of Soils Division**

**Milton & Richards, Inc.**

**Mr. Aaron B. Milton**

**Mouchantaf Construction & Maintenance Corp.**

**Mr. J. S. Habib**



VII. List of Collected Materials

1. Republic of Liberia Planning and Development Atlas  
1983 Monrovia
2. Liberia Geographical Mosaics of The Land and the people  
Ministry of Information, Cultural Affairs & Tourism  
1979 Monrovia
3. Economic Survey of Liberia  
Ministry of planning & Economic Affairs  
1983 Monrovia
4. Second National Social Economic Development Plan  
Ministry of planning & Economic Affairs  
1981 - 1985 Monrovia
5. Maps, Scale                    1:50,000                    32 sheet
6. Maps, Scale                    1:250,000                    12 sheet







JICA