

2-2-3 Basic Design Drawings

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- Fig. 2-4 : Kyeriba MW Transmitting Station / Site Layout Plan
- Fig. 2-5 : Mawagga and Kyeriba MW Transmitting Station Building / Equipment Layout Plan
- Fig. 2-6 : Mawagga and Kyeriba MW Transmitting Stations / Block Diagram of 50kW MW Transmitting System
- Fig. 2-7 : Mawagga and Kyeriba MW Transmitting Stations / Block Diagram of Solid State Type 50kW Transmitter
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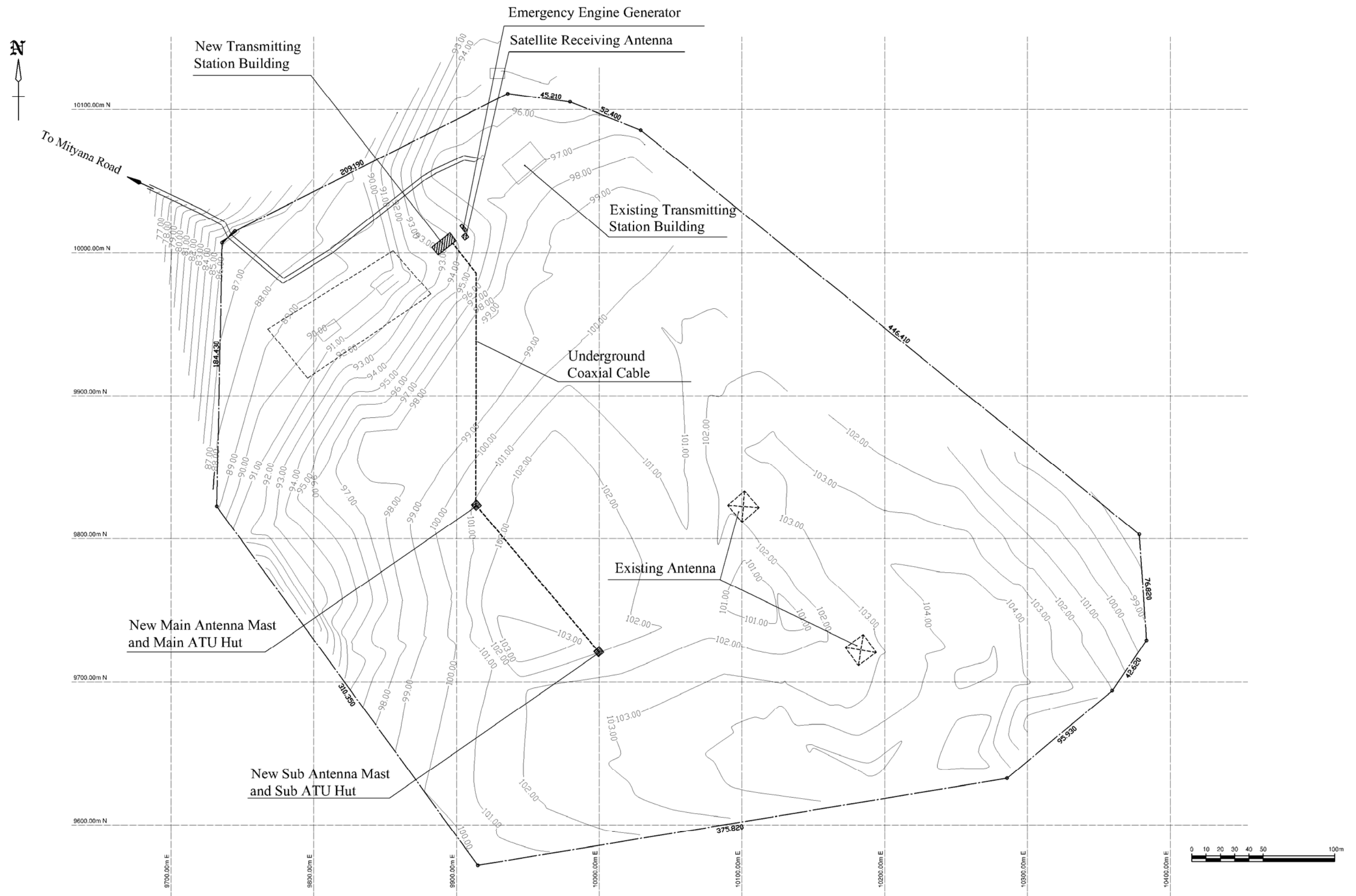


Fig. 2-3 Mawagga MW Transmitting Station / Site Layout Plan S=1/2500

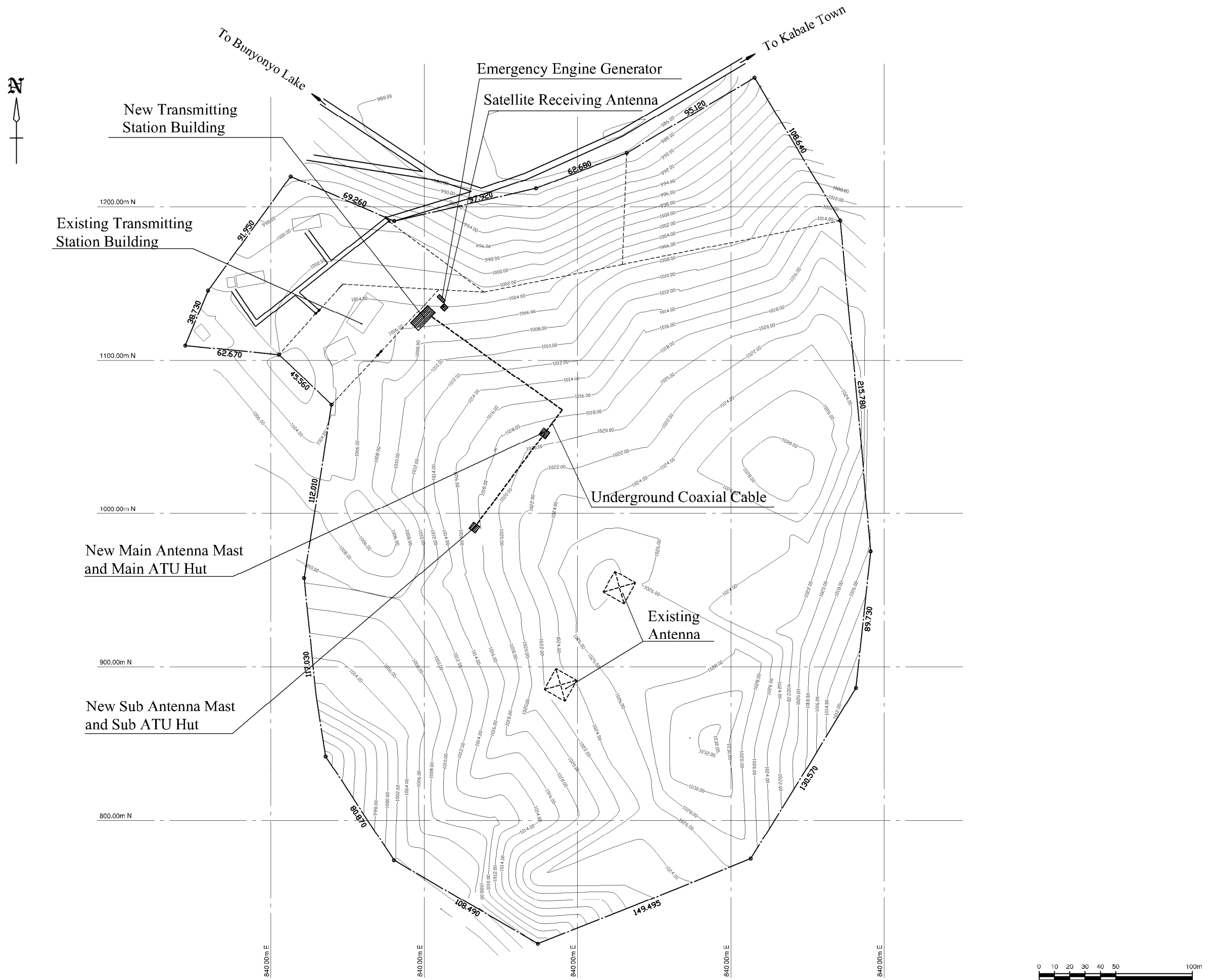


Fig. 2-4 Kyeriba MW Transmitting Station / Site Layout Plan S=1/2500

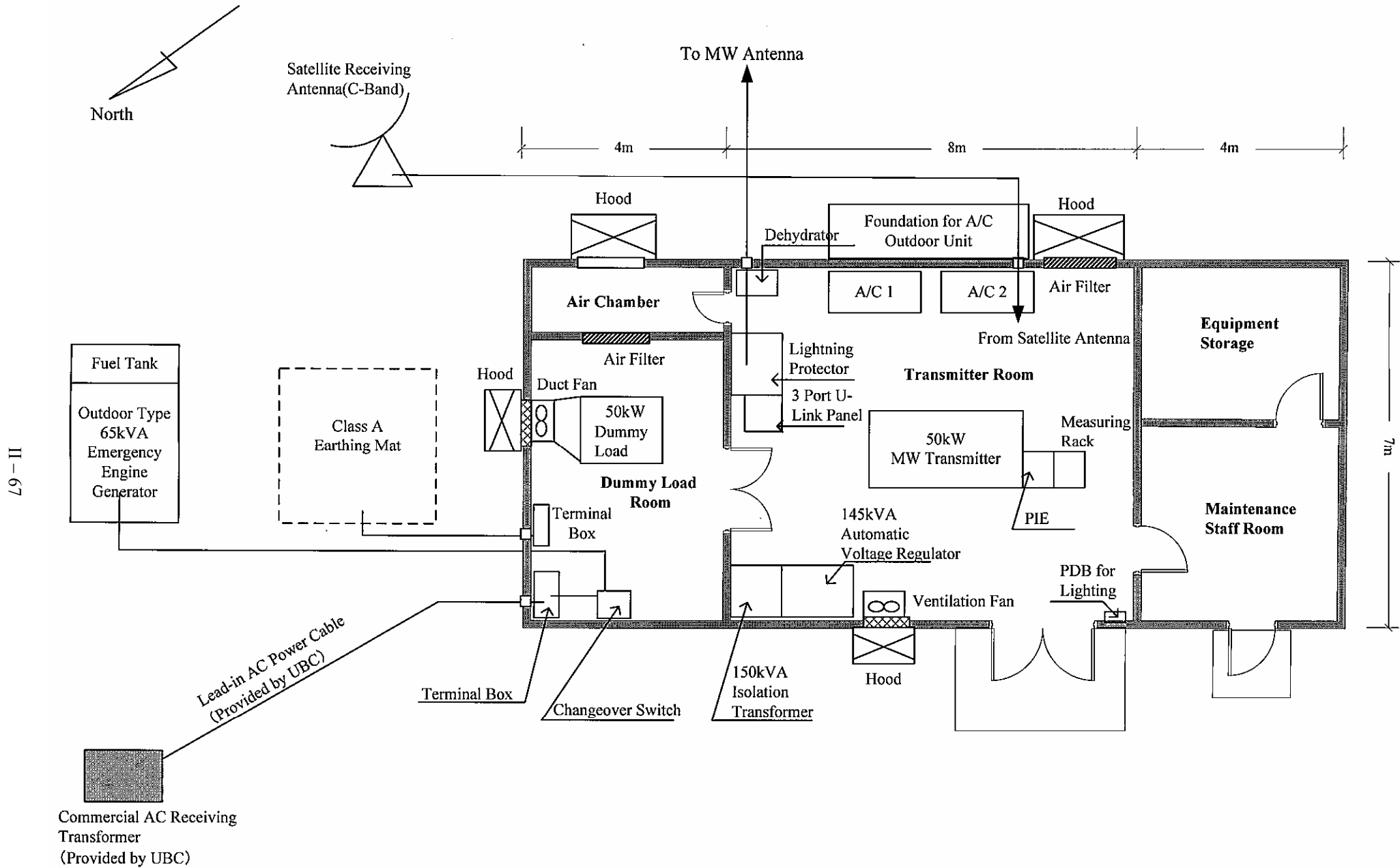


Fig.2-5 Mawagga and Kyeriba MW Transmitting Station Building / Equipment Layout Plan S=1/100

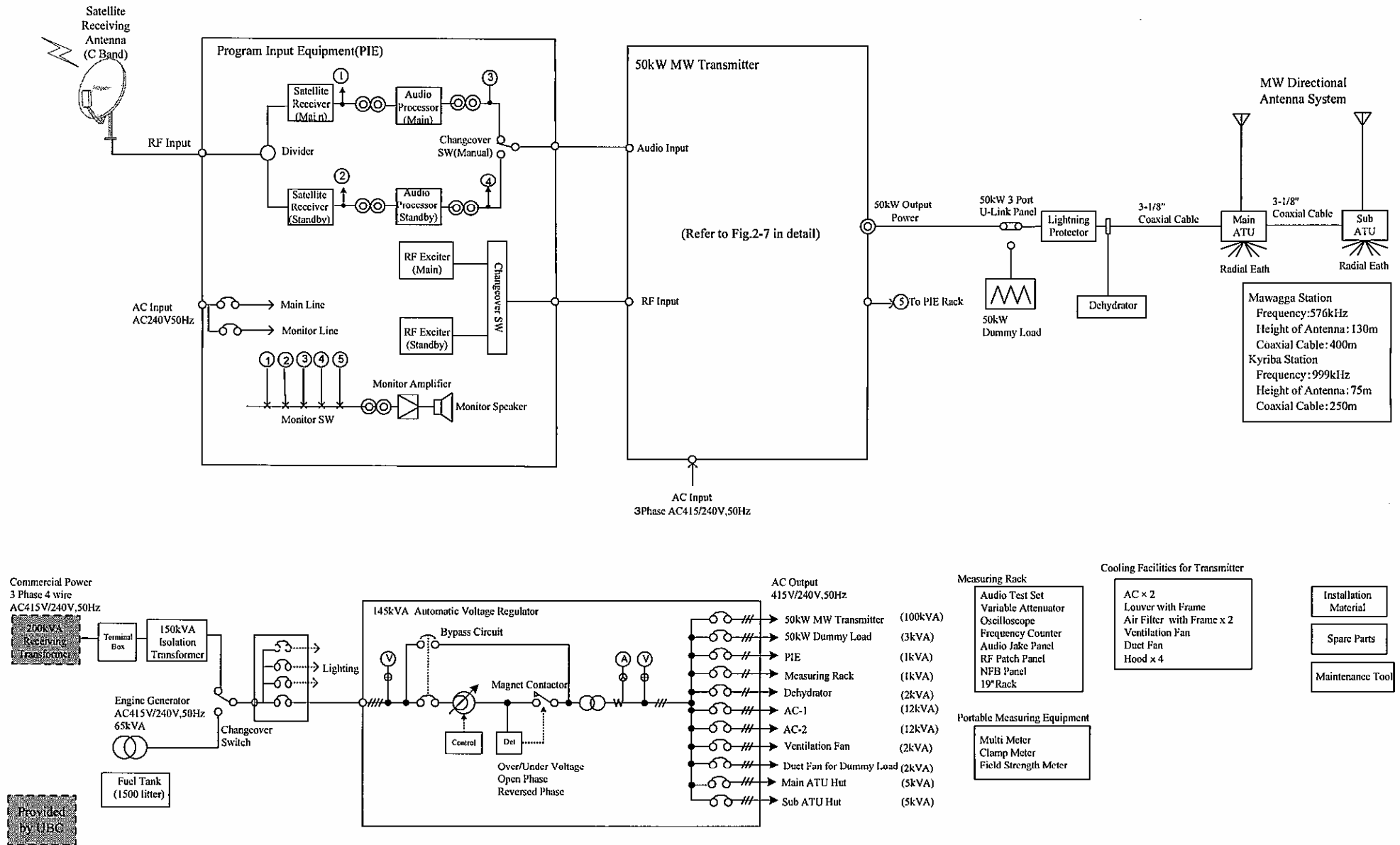


Fig. 2-6 Mawagga and Kyeriba MW Transmitting Stations / Block Diagram of 50kW MW Transmitting System

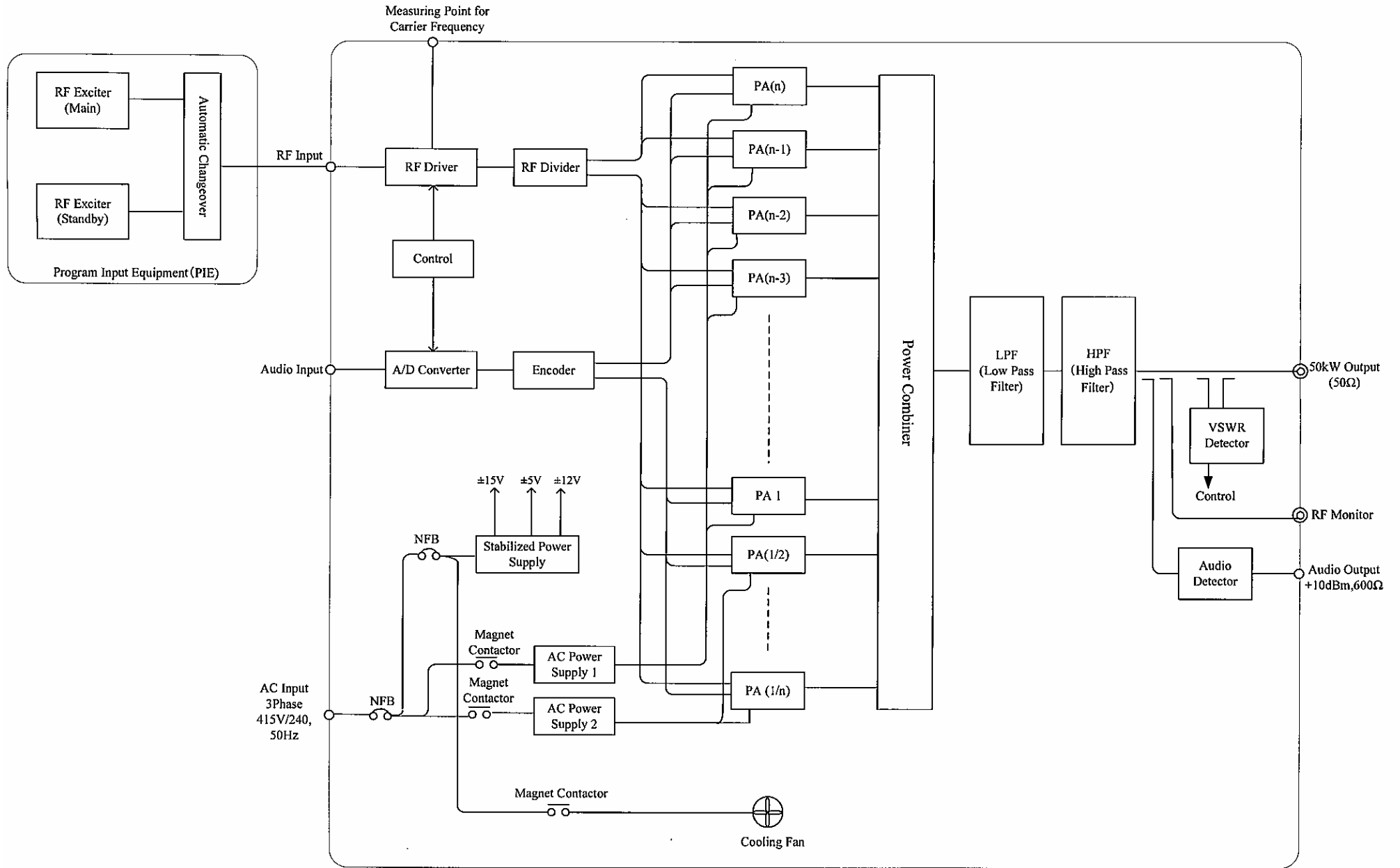


Fig. 2-7 Mawagga and Kyeriba MW Transmitting Stations / Block Diagram of Solid State Type 50kW MW Transmitter

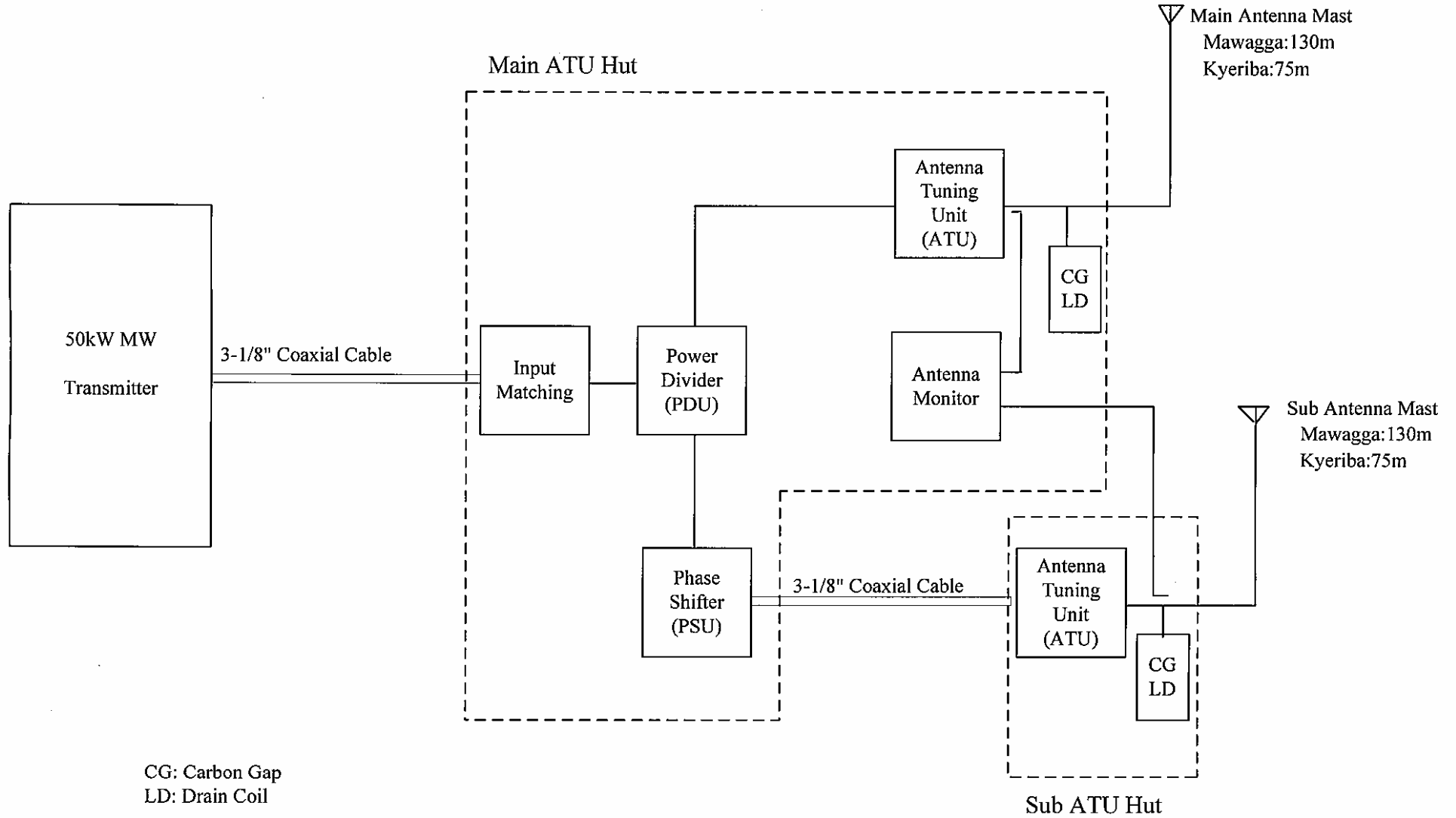


Fig. 2-8 Mawagga and Kyeriba MW Transmitting Stations / Block Diagram of 50kW MW Directional Antenna System

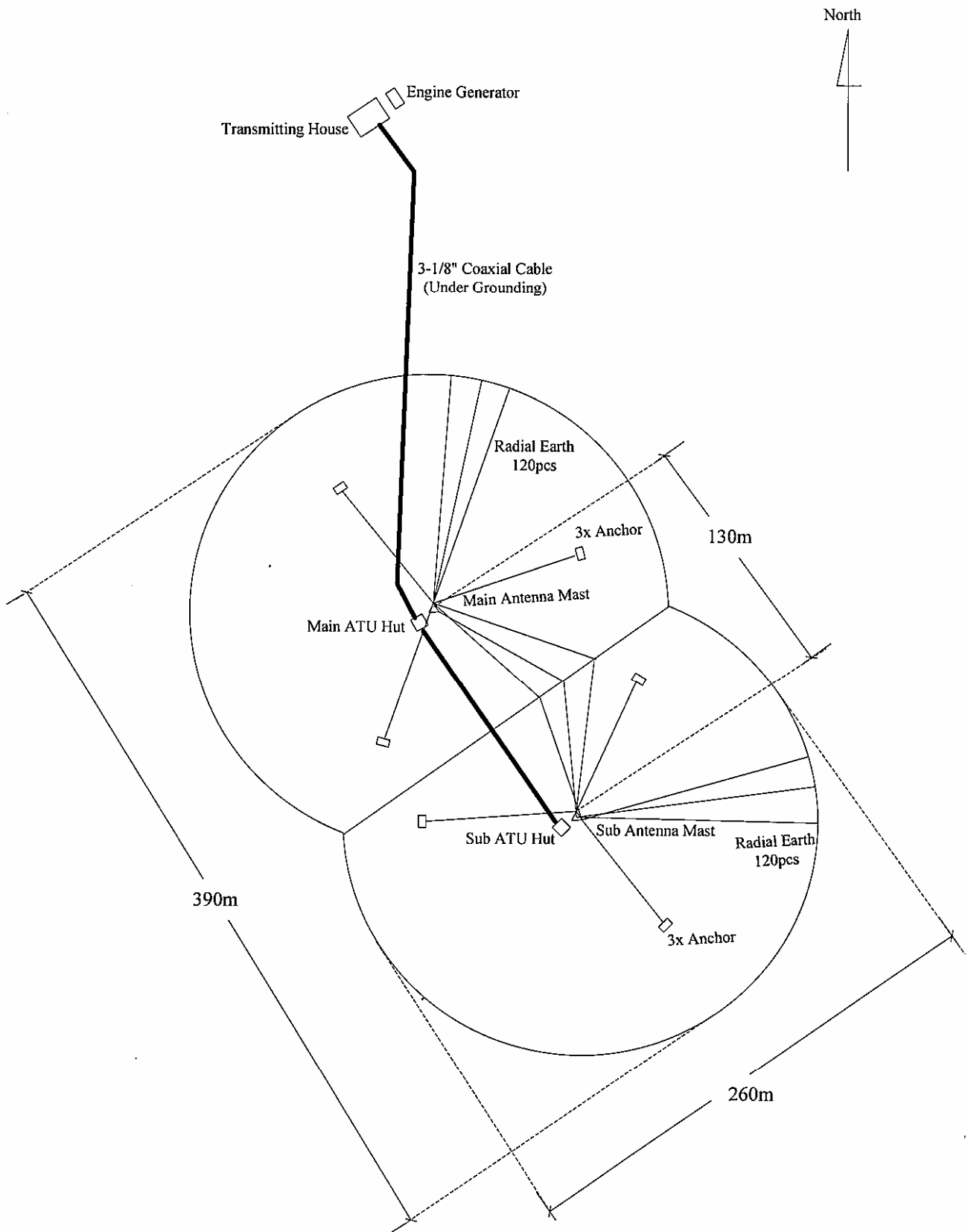


Fig. 2-9 Mawagga MW Transmitting Station / Site Layout of 50kW MW Directional Antenna System S=1/3000

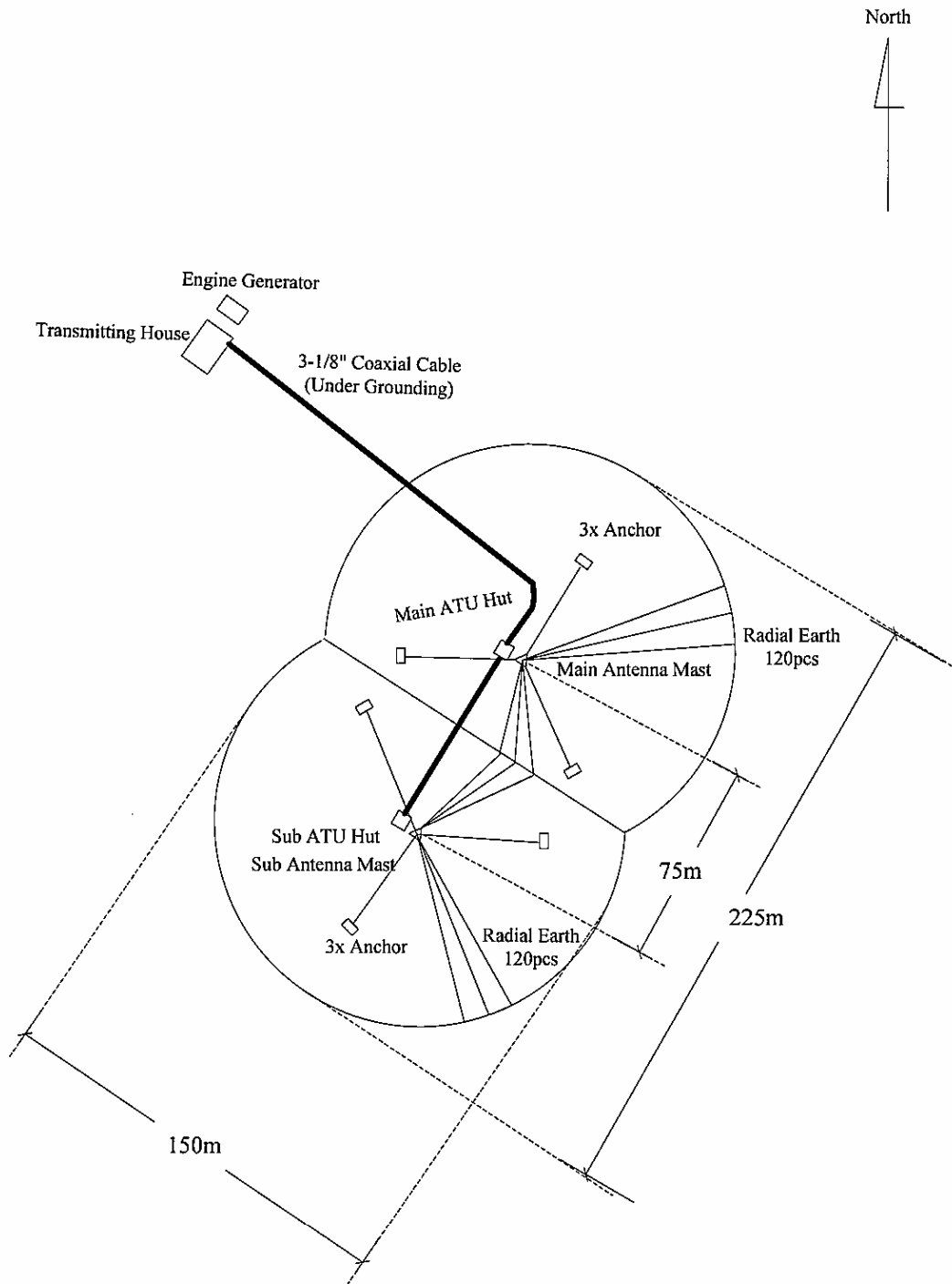


Fig. 2-10 Keyriba MW Transmitting Station / Site Layout of 50kW MW Directional Antenna System S=1/2500

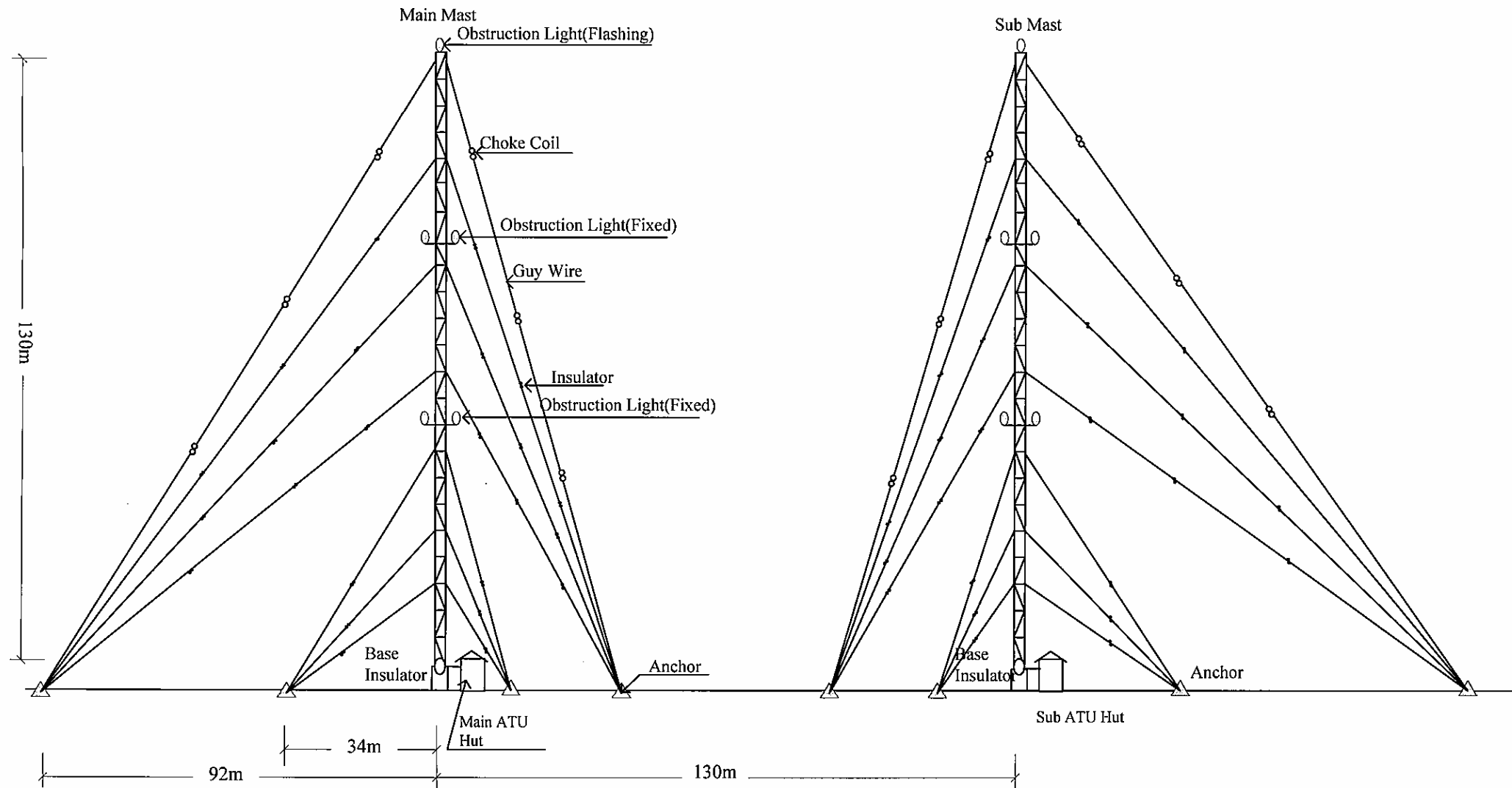


Fig. 2-11 Mawagga MW Transmitting Station / Elevation of 50kW MW Directional Antenna S=1/1200

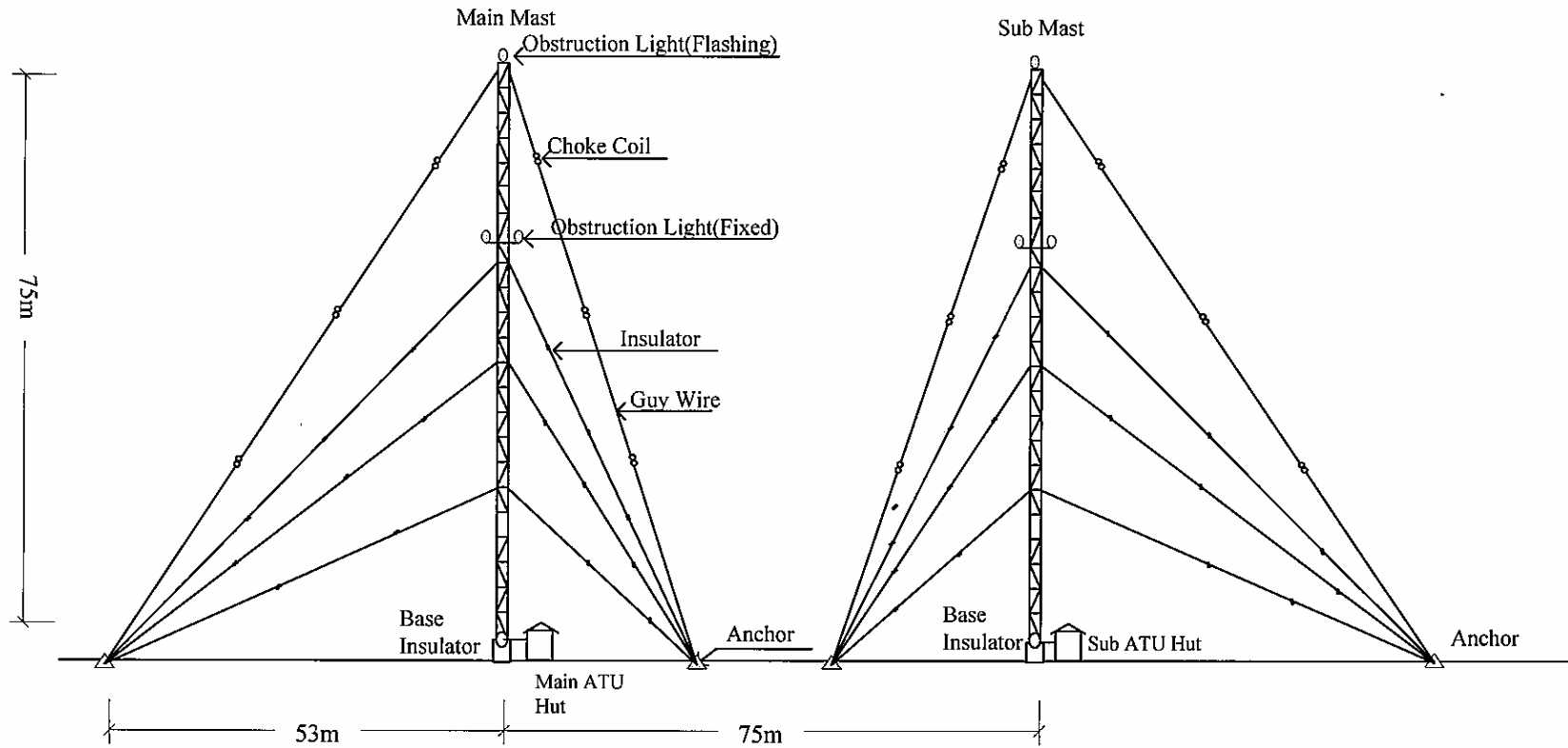


Fig. 2-12 Kyeriba MW Transmitting Station / Elevation of 50kW MW Directional Antenna S=1/1000

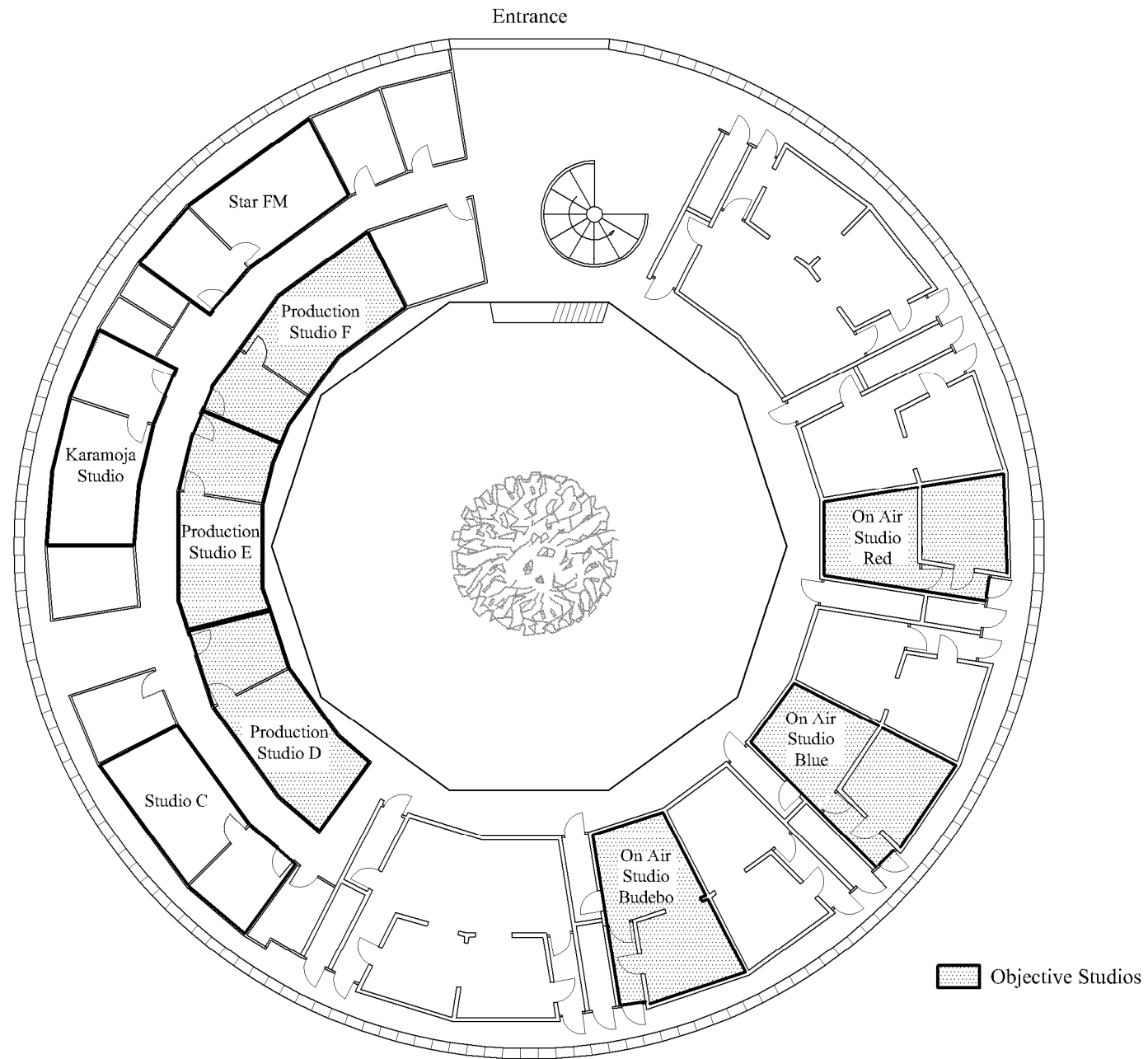


Fig.2-13 Kampala Studio / 1st. Floor Plan S=1/300

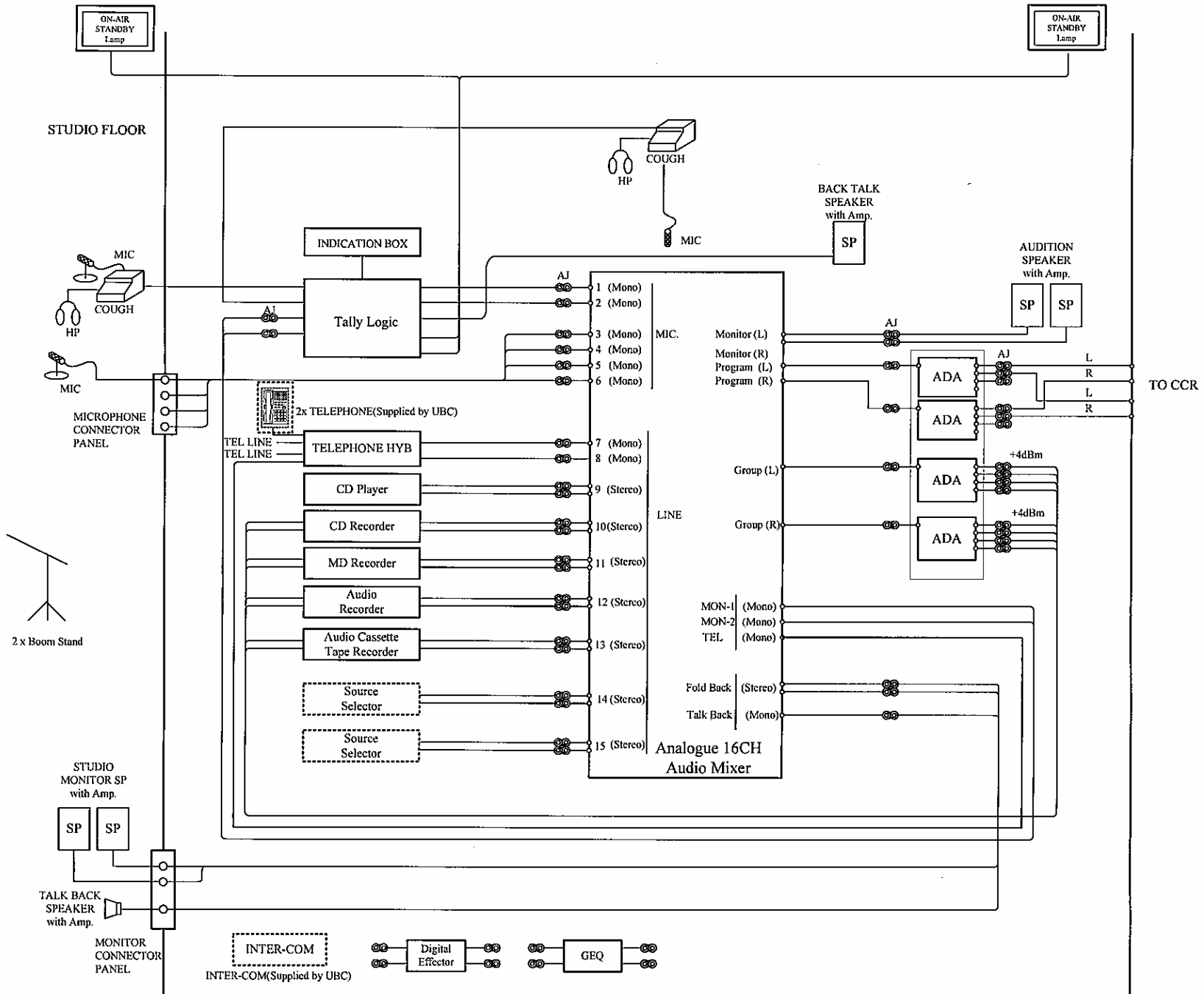


Fig.2-14 Kampala Studio / Block Diagram of On-Air Studios for Red, Blue and Butebo

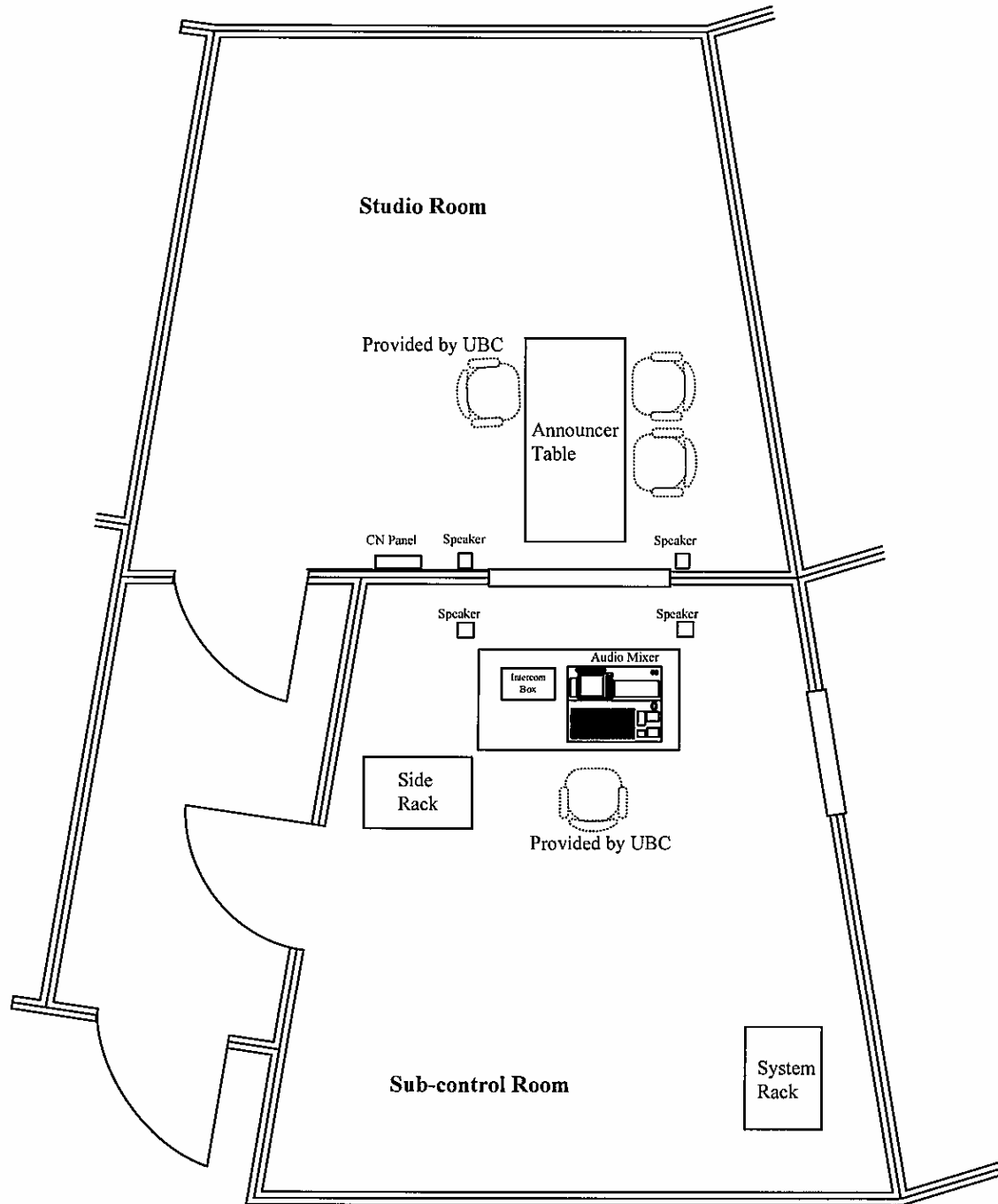


Fig.2-15 Kampala Studio / Equipment Layout Plan of On-Air Studio for Red, Blue and Butebo S=1/50

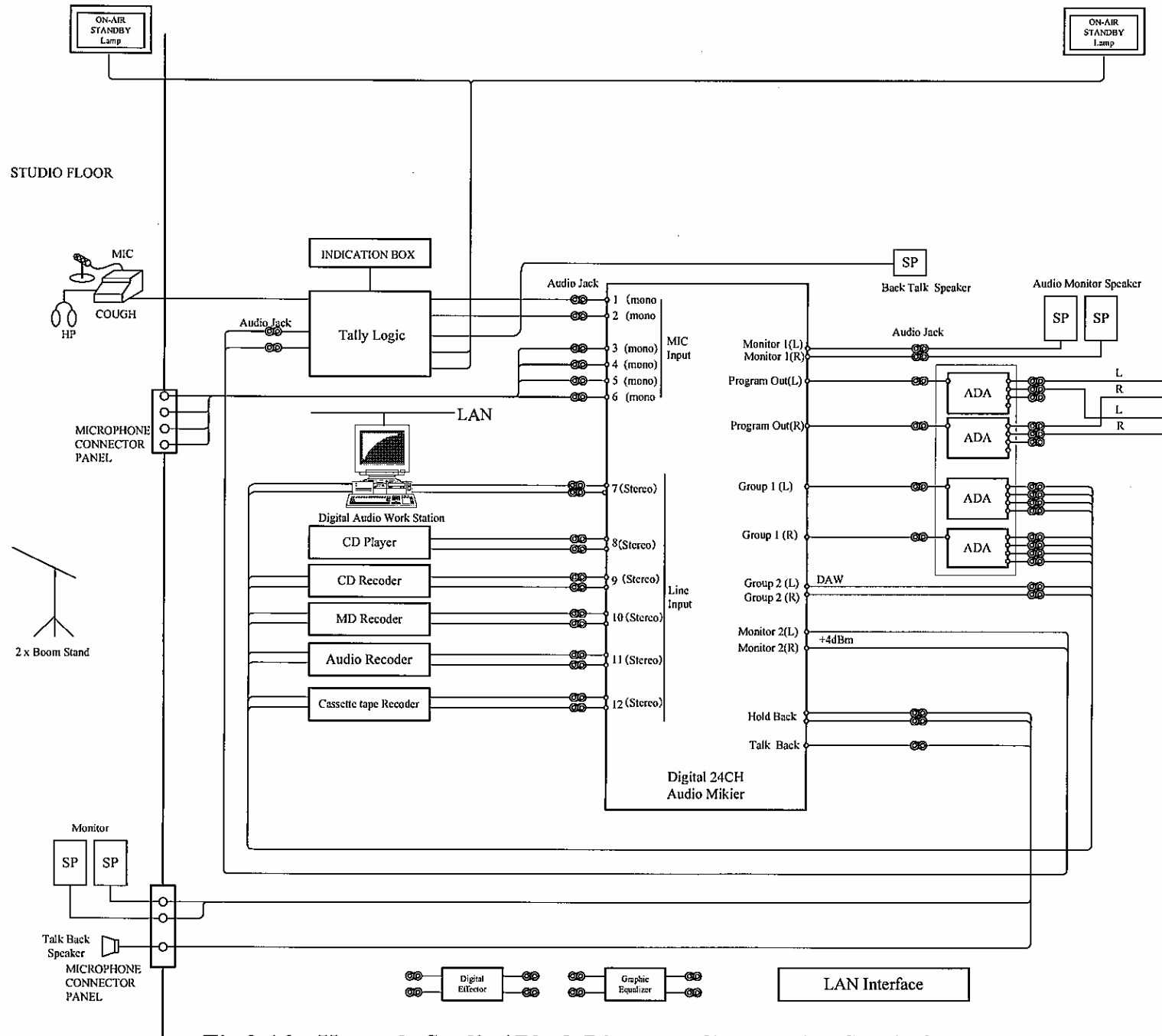


Fig.2-16 Kampala Studio / Block Diagram of Production Studio for D, E and F

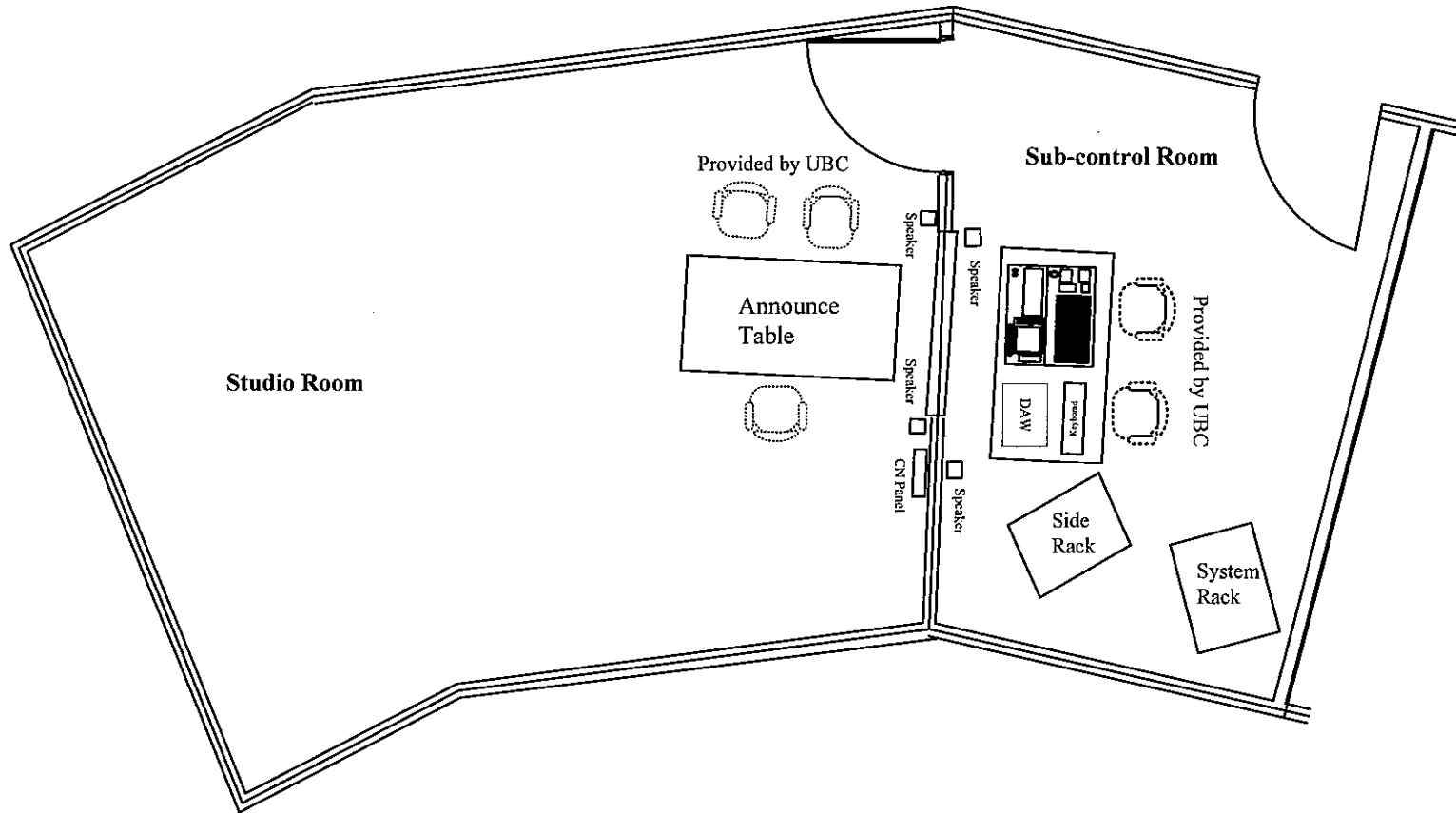


Fig.2-17 Kampala Studio / Equipment Layout Plan of Production Studio for D,E and F Studio

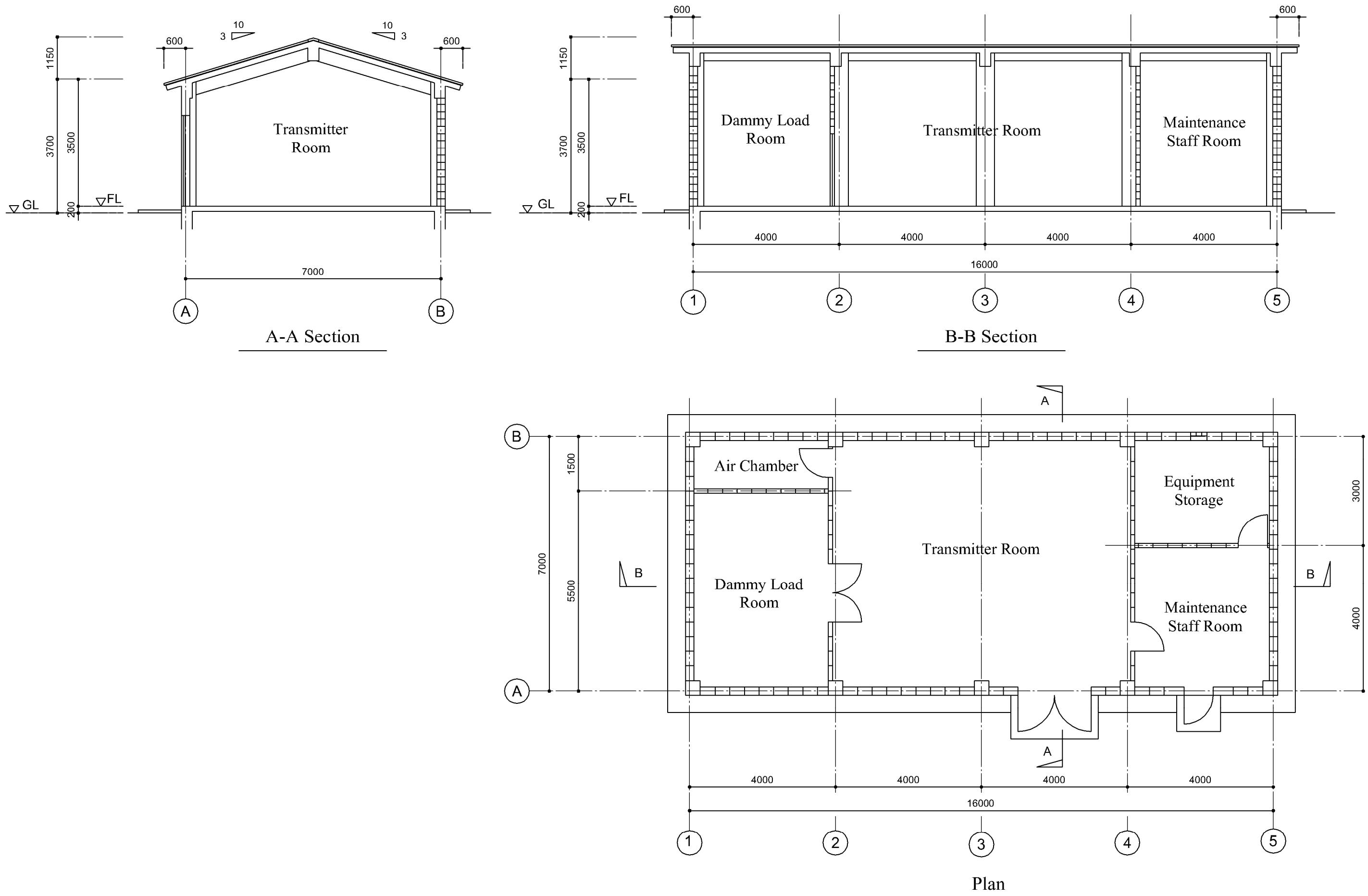
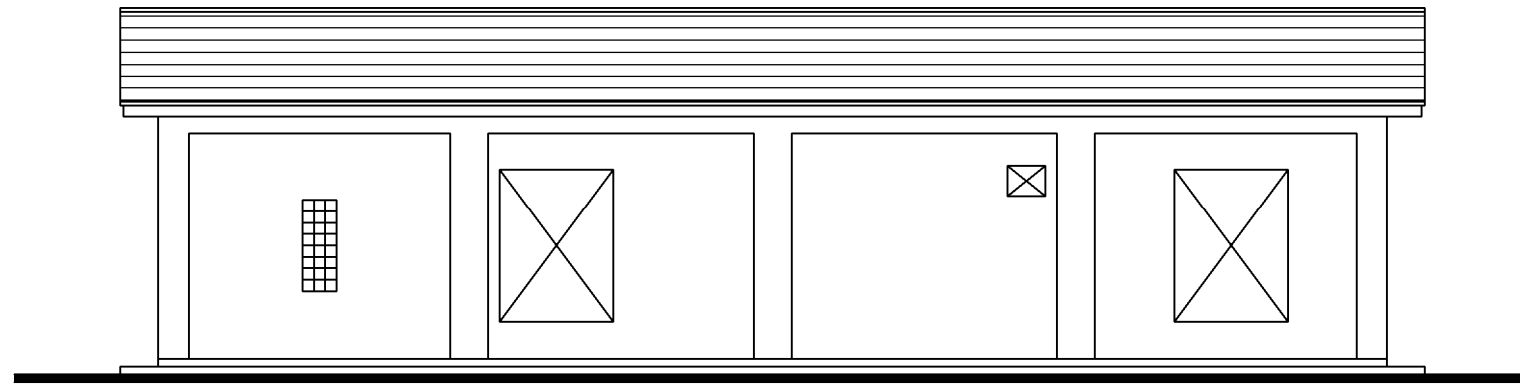
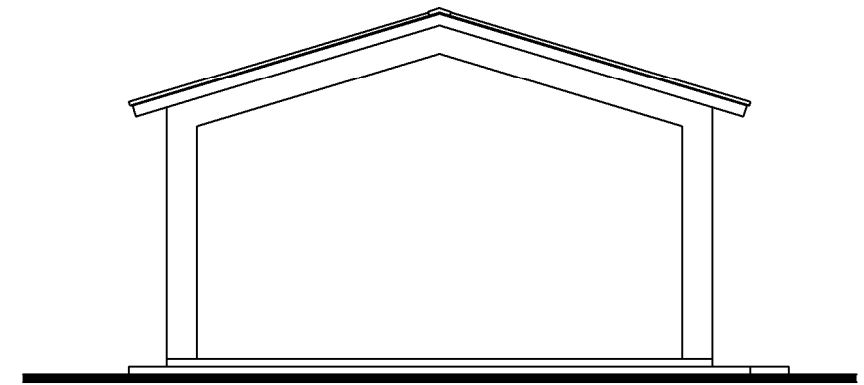


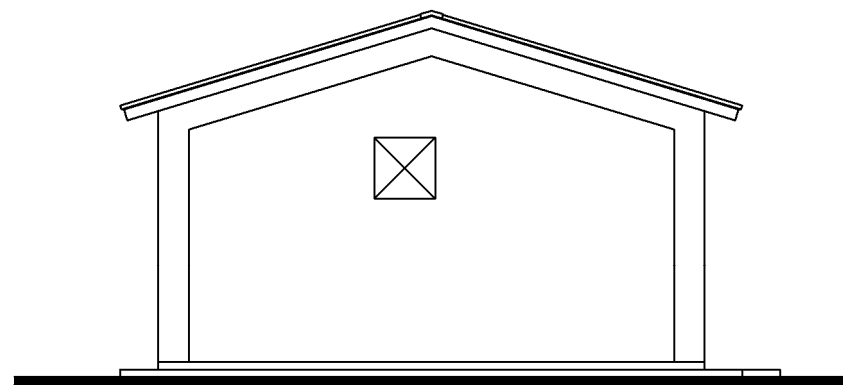
Fig.2-18 Mawagga and Kyeriba MW Transmitting Station Buildings / Plan and Sections S=1/100



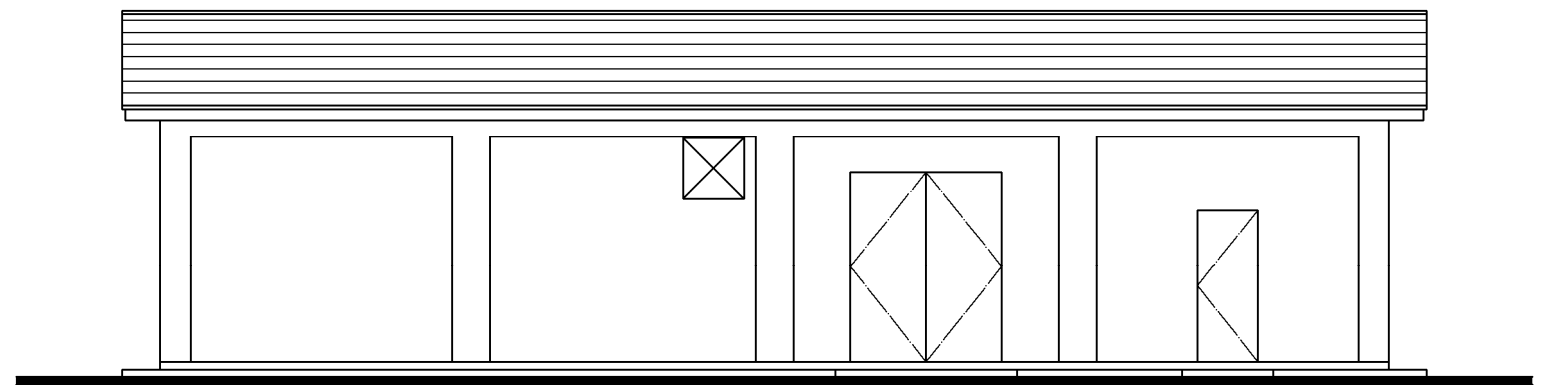
Ⓑ Side Elevation



Ⓔ Side Elevation

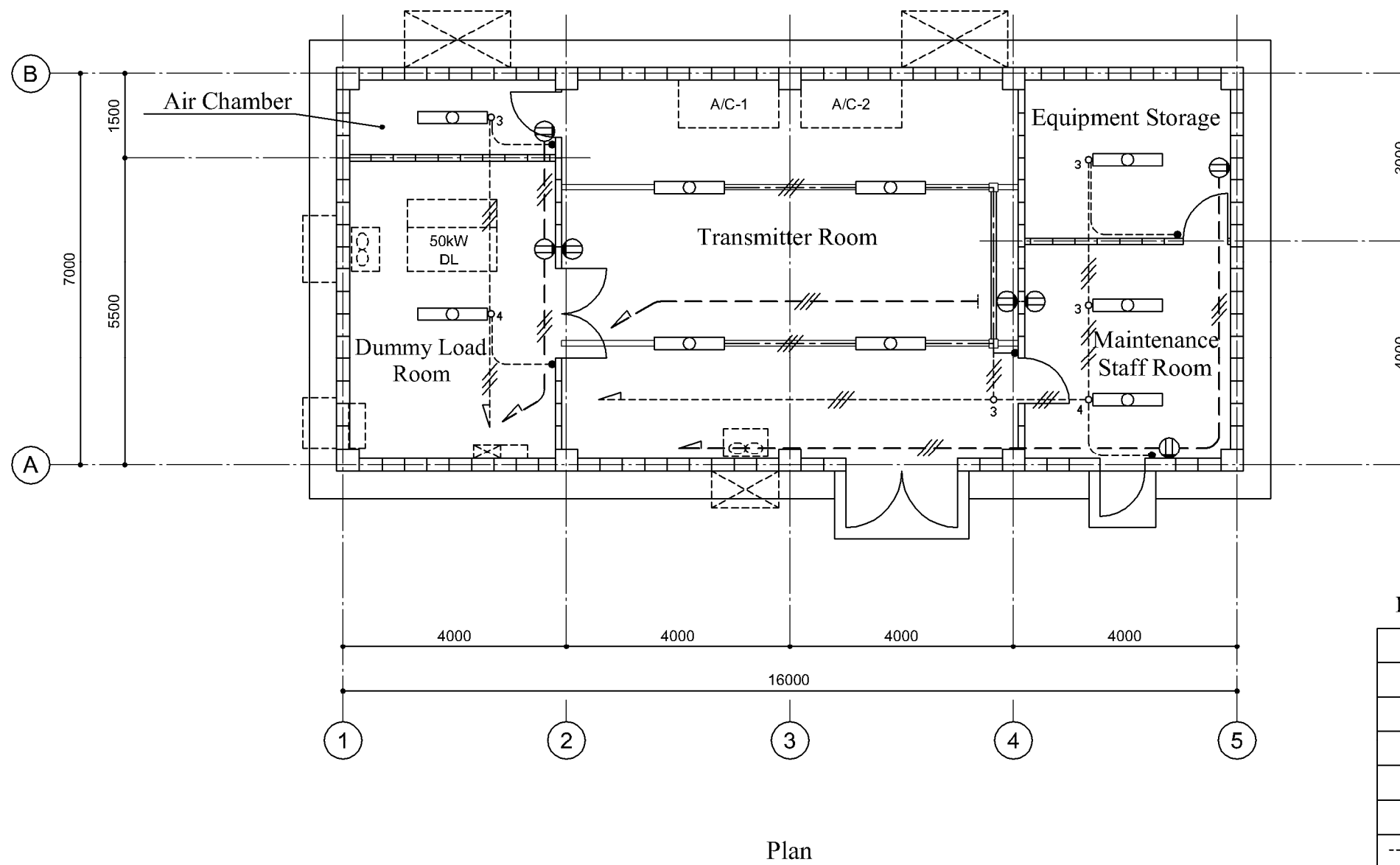


Ⓐ Side Elevation



Ⓒ Side Elevation

Fig.2-19 Mawagga and Kyeriba MW Transmitting Station Buildings / Elevations S=1/100

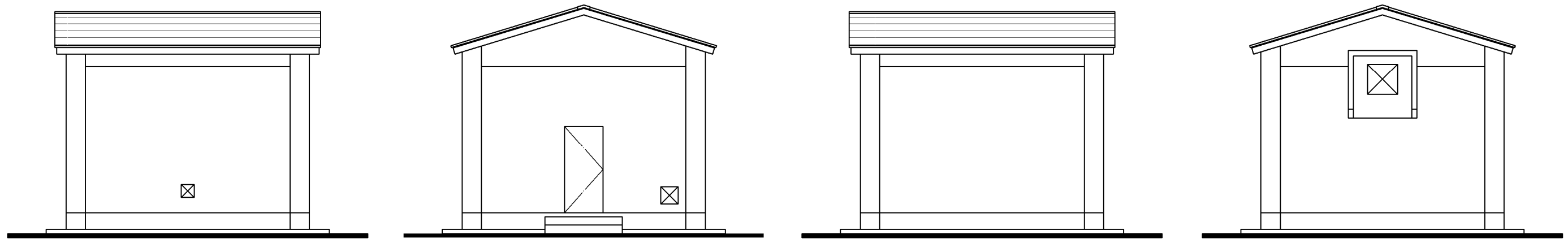


Legend

	Distribution Panel (Supplied as the Equipment Work)
	Fluorescent Lamp (HF 32W × 2)
	Switch (IP15A × 1 with Plate)
	Race Way (40 × 45 with Cover)
	Socket Outlet (2P15A × 2E with Plate)
	Pull Box (Exposed round type)
	IV 1.6 × 2 (E19), Exposed
	IV 1.6 × 3 (E19), Exposed
	IV 1.6 × 4 (E19), Exposed
	IV 1.6 × 3 (in raceway)

Fig.2-20 Mawagga and Kyeriba MW Transmitting Station Buildings / Plan for Electrical Installation

S=1/100



① Side Elevation

④ Side Elevation

② Side Elevation

⑤ Side Elevation

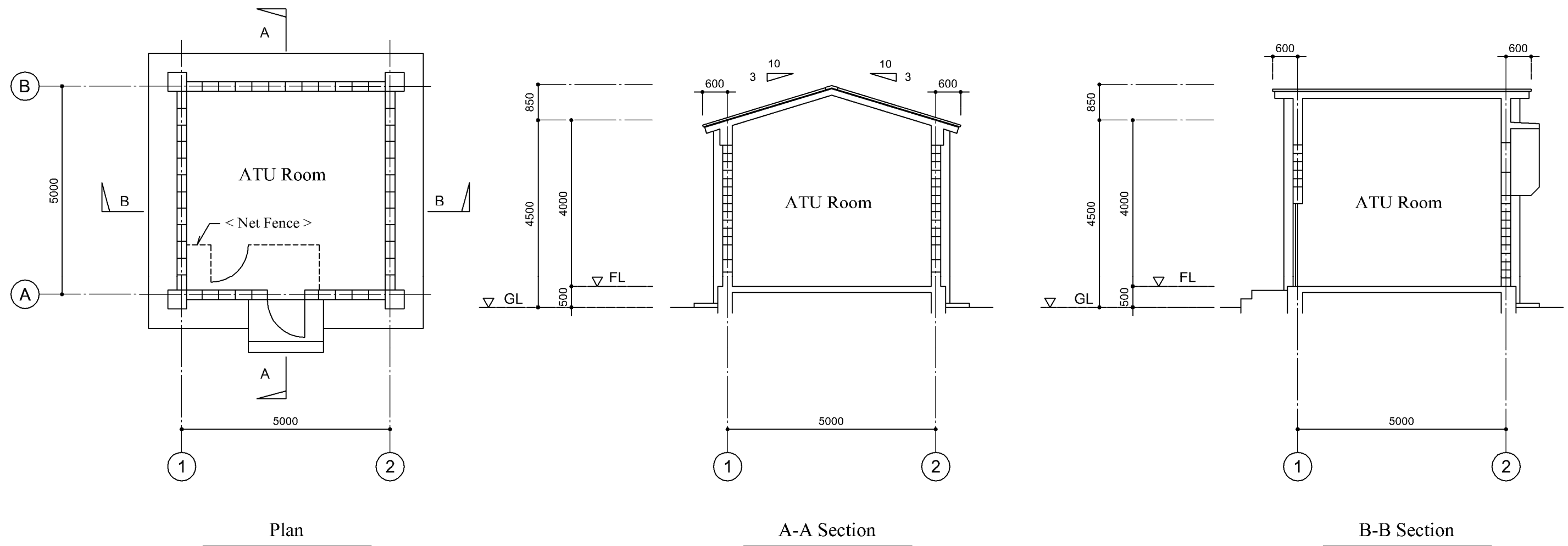


Fig.2-21 Mawagga and Kyeriba MW Transmitting Stations Main ATU Hut / Plan, Elevations and Sections

S=1/100

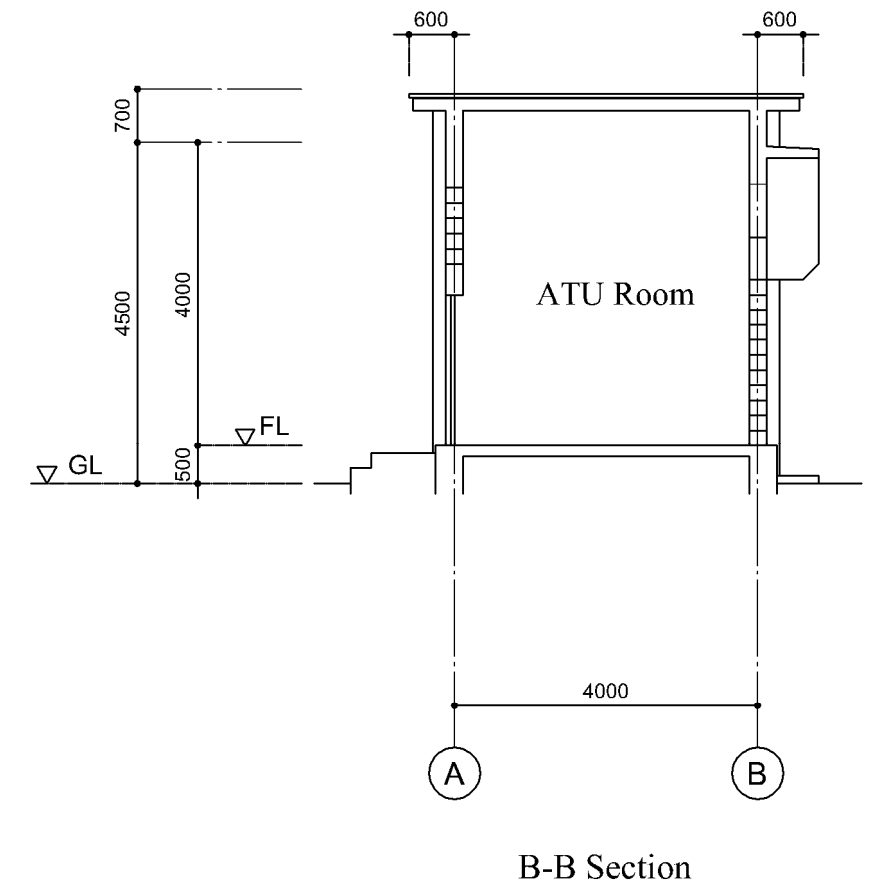
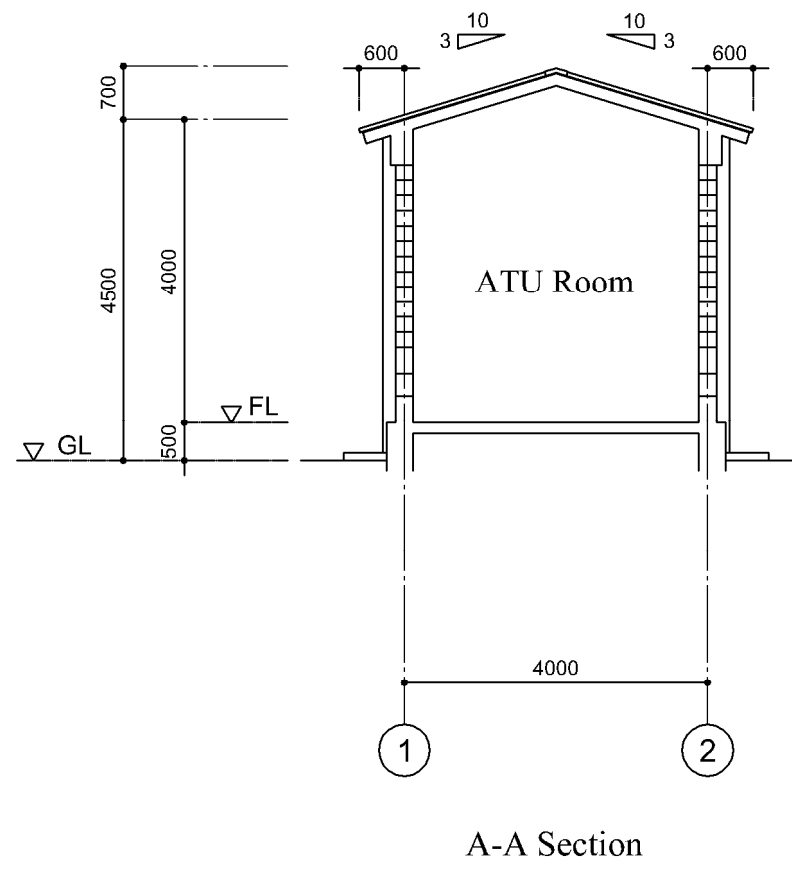
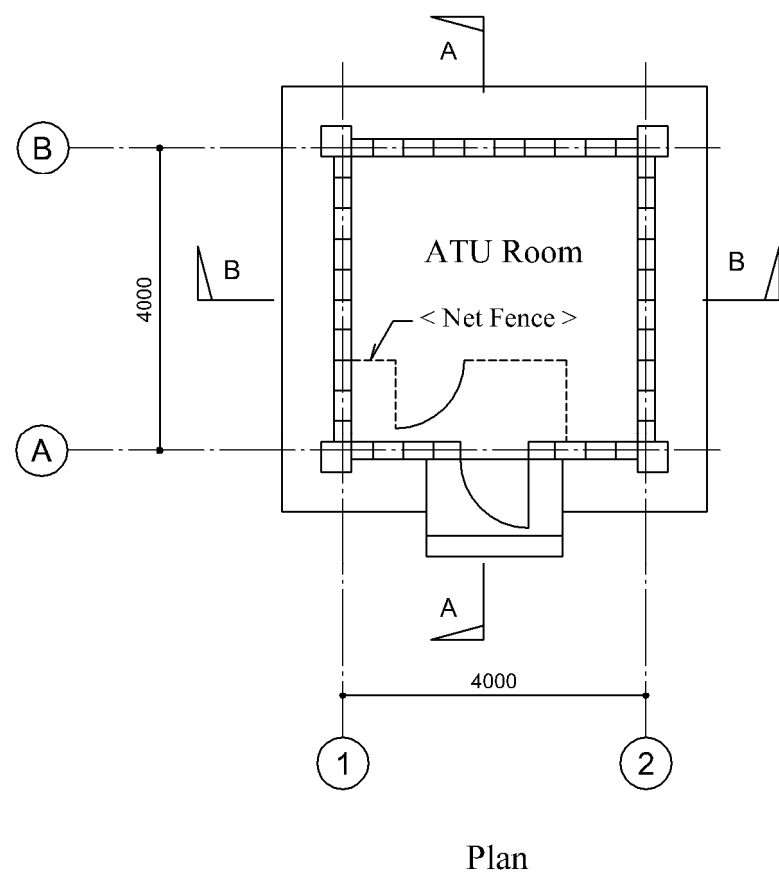
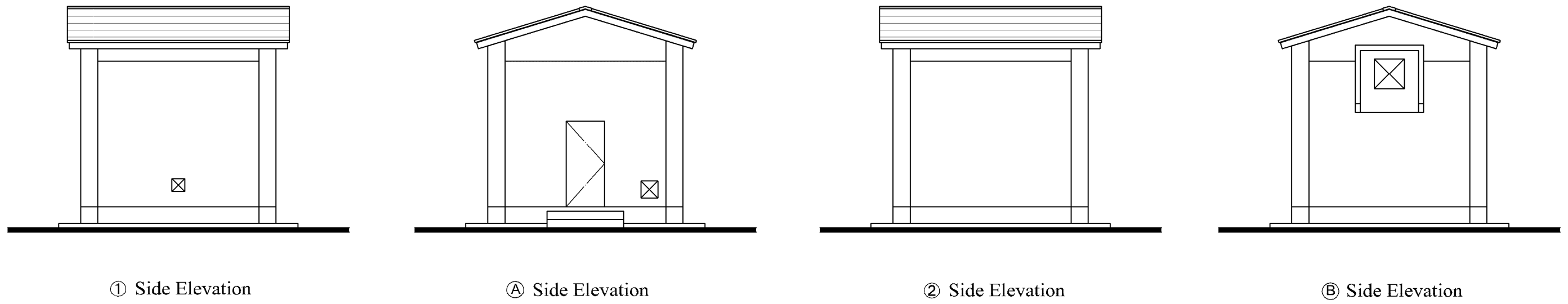


Fig.2-22 Mawagga and Kyeriba MW Transmitting Stations - Sub ATU Hut / Plan, Elevations and Sections S=1/100

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

(1) Project Implementation Structure

1) Implementation Procedure

This Project will be implemented according to the framework of the grant aid scheme of the Government of Japan. Therefore, it shall be implemented, following cabinet decision by the Government of Japan and the Exchange of Notes (E/N) between the governments of both countries. Following the E/N, the project implementing agency shall conclude an agreement with the consultant, which shall then enter into the detailed design for the project components.

Tender documents prepared by the consultant shall be distributed to prospective tenderers after approval has been obtained from the project implementing agency and the Government of Japan and the announcement of tender. The tender works for the Project up to the signing of the contract shall be implemented in Japan. Meanwhile, concerning the consultant agreement, it is normal to be concluded in Uganda.

The contractor decided by the tender shall start construction of the buildings required for the project sites as well as manufacturing of the equipment and carry out the installation work of the equipment to the completed buildings. Until the total completion of these works, UBC must consolidate the operation and maintenance setup and secure the necessary operating budget and manpower.

2) Role of Each Organization in Project Implementation

The roles and important duties of each organization concerned with the project implementation are summarized in the following paragraphs.

Project Implementing Agency

The project implementing agency is UBC under the supervision of the Ministry of Information and National Guidance. In order to ensure full understanding of the grant aid system and the smooth implementation of the Project, UBC must maintain close communications with all related agencies on the Ugandan and Japanese sides and appropriately coordinate work in all stages of the Project. Moreover, the responsible Ministry should make the utmost effort in order to secure sufficient budget for carrying out the scope of works of Ugandan side and enabling UBC to

conduct appropriate operation and maintenance.

UBC and the Ministry should place emphasis on implementing the following items:

- Securing of budget for the scope of works done by Ugandan side and formulation of the schedule and implementation of the scope of works that complies with the overall project schedule;
- Identification and handling of all the procedures that need to be followed on the Ugandan side during the project period; and
- Understanding and arrangement of permits and authorizations connected with the Project, and provision and coordination of relevant information with the consultant

Consultant

Following the Exchange of Notes (E/N) between the governments, UBC shall conclude a consultant service agreement for preparation of tender documents and supervision works with the Japanese consultant, and the Government of Japan shall verify this agreement. Following the verification, the consultant shall implement survey and discussions for review of the contents of the detailed design with UBC, and then shall commence preparation of tender documents according to this basic design study report. The consultant shall compile the findings of the detailed design into the design drawings and specifications, and shall also prepare the instructions to tenderer, draft contracts, general contract conditions and other tender related documents and obtain approval thereof from UBC.

In the tender stage, the consultant shall act on behalf of UBC in carrying out all tender affairs up to the signing of contracts between UBC and the contractor including announcement of tender, distribution of tender documents, answer to questionnaire, opening of tenders, contract negotiations, and so on. Moreover, in the supervision stage of the Project, the consultant shall implement all supervisory service from the procurement of the equipment through to installation, adjustment of the equipment and handing over. In this Project, one of the most important tasks of the consultant is to act as a coordinator on the interface and work schedule between the works done by Ugandan side and the equipment installation work done by Japanese side.

Contractor

The contractor shall be selected from among Japanese general trading companies or manufacturers of the equipment that possess ample experiences in this field. These conditions of tenderers' qualifications shall be stipulated in the tender announcement. The contractor shall be decided by the open tender. The contractor shall complete procurement and installation of the equipment that comply with the specifications prepared by the consultant within the contract periods. When handing over the equipment, the contractor shall submit completion drawings and adequate maintenance manuals, and furthermore shall be responsible for after-sales service such as supply of spare parts, appropriate response in case of equipment failure, etc.

3) Dispatch of Engineers and Initial Operation / Necessity for Instruction of Maintenance Methods

Most pieces of broadcasting equipment to be provided in the project will be manufactured either in Japan or in third countries, dismantled if necessary, and delivered to the project site. Upon arrival, the equipment will be installed, re-assembled and adjusted. However, because it is necessary for these dismantling and re-assembling work to be based on know-how unique to individual manufacturers, and because a series of procedures are involved after the completion of installation work, such as instructions and training concerning the handling of individual pieces of equipment, inspections and so on, it is essential to call on the manufactures to dispatch engineers for the installation of equipment. At the same time, the construction of antennas at the MW transmitting stations requires extremely special skills, so that it is necessary to dispatch engineers specializing in the antenna construction, in addition to architectural engineers in charge of the foundation work for the antennas and the management of the construction of transmitting station buildings and other facilities. The number of personnel to be dispatched and the term of dispatch will be set at an appropriate minimum, and the installation work will be implemented while the technological transfer is carried out towards UBC technical staff members and local skilled workers. Since UBC technical staff members have fair knowledge of operation and maintenance of the broadcasting equipment, there are no particular technical problems. Even so, because they are not used to the operation and maintenance of the latest equipment with digital technologies, training sessions concerning the operation and maintenance of MW transmitters and studio equipment to be procured in the project will be carried out by dispatched engineers. The training sessions will be held for about 15 days and aimed at transmitting technical staff members of the Mawagga and Kyeriba Transmitting Stations covered by the project and technical staff members of the studios of the Kampala Broadcast House.

2-2-4-2 Implementation Conditions

(1) Points to Consider in relation to Natural Conditions

Investigations concerning rainfall, temperatures, humidities, wind speeds and frequency of earthquakes around each project site have found any particular natural conditions which require special attention while the installation work is implemented. Even so, while it takes 8 – 9 months to complete the construction work of the transmitting station buildings and the erection of the frame for the MW transmitting antennas, that is, from the beginning of the work on the foundation to the erection and adjustment, it is impossible to engage in these works in two rainy seasons during the year (the first rainy season is in March-May, and the second in September-December). Thus, agencies in charge of procurement of equipment will be required to take adequate measures against rainfall such as protection of equipment to be delivered and drainage of water within the premises.

(2) Previous Arrangements concerning Local Procurement of Equipment

Most pieces of equipment will be procured in Japan, Europe and America, so that procurement schedules to be arranged by procurement agencies will be fairly reliable from the viewpoint of their quality control and compliance with the delivery schedules. However, cement, reinforcing steels and various other basic materials for the construction work of the facilities and the foundation work for the antennas which will be implemented in advance while the equipment is being manufactured will be mainly imported from countries in Europe, Kenya, South Africa and other countries, although all of those materials are available locally. Since it sometimes become difficult to procure these import materials due to social situations and circumstances of the construction sector in Uganda, thus it becomes difficult to fix delivery dates, the constructors should conduct preliminary surveys concerning materials to be procured locally immediately after they conclude agreements concerning the project, and draw up work schedules carefully so as to proceed the entire work without any delay. In the meantime, the succession of work using locally procured materials which begins with the construction of the facilities and ends with the installation of the antennas is required to be commenced almost at the same time at both the Mawagga and the Kyeriba Transmitting Stations, thus it is necessary to make precise preparation to supply the materials simultaneously to the sites which are distant from each other by more than 400km.

(3) Ensuring Safety During the Work

During the period of the installation work, the contractor and the consultant are to obtain the latest information on the security situation in the regions in question and strive to ensure safety at the project sites and in movement between them. In cases in which it is judged that safety cannot be ensured, the two sides—the Embassy of Japan and the JICA office in Uganda and the Japanese Ministry of Foreign Affairs and JICA Headquarters in Japan on the Japanese side and the Ministry of Information and National Guidance and UBC on the Ugandan side—are to discuss the situation and decide measures to be taken.

Also this Project includes the installation work of the MW transmitting antennas with a height of 130m for Mawagga Transmitting Station and 75m for Kyeriba Transmitting Station. At the time of such work it will be necessary to be extremely careful to ensure safety in work at heights, including obligatory use of helmets and safety belts, placement of signs at the bottom of the towers during the work that indicate that work at heights is taking place above, assigning of safety monitoring personnel on the ground and suspension of the work during rain or strong winds.

2-2-4-3 Scope of Works

Table 2-7 below lists the items for which the Government of Japan and the Government of Uganda will be responsible, respectively, in case of implementation of this Project on the basis of Japanese grant aid assistance.

Table 2-7: Table of Items for Which the Governments of the Two Countries Will Be Respectively Responsible

Items of responsibility	Japan	Uganda
Items related to improvement for Mawagga and Kyeriba MW Transmitting Stations		
Procurement, transportation and installation of MW transmitting system equipment (transmitters, directional antenna system, satellite receiving equipment, power supply equipment, Air-conditioning and ventilation system, etc.) and on-the-job training after installation of the equipment		
Construction of Transmitting Station Buildings and ATH Huts (Main and Sub)		
Leading-in of the commercial power to the new transmitting station buildings		
Dismantlement of steel structure of the existing antenna tower (130m×2 for Mawagga Transmitting Station and 75m×2 for Kyeriba Transmitting Station)		
Construction of boundary fences (1600m for Mawagga Transmitting Station and 1350m for Kyeriba Transmitting Station)		
Items related to improvement of studio equipment for Kampala Studio		
Procurement, transportation and installation of studio equipment (three on-air studios and three production studios) and on-the-job training after installation of the equipment		
Removal of existing studio equipment in on-air studios		
Removal of existing studio equipment in production studios		
Other General Items		
Ensuring safety during the period of the work		
Arrangement of tax exemption for the imported equipment		
Issue of authorizations to pay (A/P) and payment of bank commissions for issue therefore and changes in them		
Appropriate and efficient maintenance and operation of the procured equipment in this Project		
Meeting of any other obligations on the part of the recipient country the assistance that are specified in the Exchange of Notes		

2-2-4-4 Consultants Supervision

(1) Basic Concept of Supervision

To ensure the smooth execution of the Project, the consultant shall organize a project team to manage the implementation of detailed design and supervision works based on the purport of the basic design. The basic concept of the supervision work shall be as follows.

- 1) Carry out fine-tuned adjustments to ensure that no discrepancies arise on the equipment installation work, and make the utmost effort to ensure completion of the works on schedule.
- 2) Appropriately report on work progress to related organizations in both countries to ensure there are no discrepancies in their understanding of work status. Moreover, give prompt responses and advice to inquiries from the contractor.
- 3) Be prepared to offer technical transfer to officials on Ugandan side in order to realize greater effects of the grant aid. Moreover, always be ready to offer adequate and appropriate explanations concerning not only the design concept of the equipment but also execution methods and technology, etc.

(2) Contents of Consultant's Supervision

The contents of the supervision work to be implemented by the consultant are as follows:

1) Contract-related Service

The consultant shall implement such contract-related services as: preparation of detailed design and tender documents, handling of tenderers from announcement of tender through to opening of tenders, evaluation of tenders and selection of the contractor, holding of contract negotiations, and witnessing of the contract, etc., and report on the progress and results of such events to UBC at appropriate points.

2) Examination of Items Submitted by the Contractor

The consultant shall review execution plans, work schedules, working drawings, shop drawings, technical materials and samples, etc. submitted by the contractor and approve them upon confirming their compliance with design drawings and specifications, etc.

3) Supervision of Work

The consultant shall dispatch supervisors to the project sites at appropriate points during the execution period to supervise whether the works are being implemented according to the specifications and drawings and to give the necessary instructions. Moreover, the consultant shall constantly supervise in detail the work progress and offer appropriate advice and guidance to the contractors. The consultant shall prepare monthly reports of work progress and inform the parties related thereto.

4) Cooperation Regarding Payment Approval Procedures

Concerning contract fees to be paid to the contractor during and after the works, the consultant shall examine all requests for payment, etc. that are submitted by the contractor, and issue the necessary certificates.

5) Inspections and Witnessing

The consultant shall implement inspections of the equipment at the plant before shipment, and witness various tests implemented at sites such as acceptance inspection on completion of the work. The consultant shall give approval when the inspection results comply with specifications and design documents, or issue proper instructions to the contractor if nonconformities are found. Test results shall be compiled into the monthly reports and fed back to the related organizations.

6) Assistance of Handing Over Procedures

In addition to compiling the acceptance inspection reports, the consultant shall review and approve spare parts and equipment manuals and maintenance manuals, etc. that are handed over by the contractor and provide pertinent advice to UBC concerning the operation and maintenance of the equipment.

(3) Supervisory Personnel Assignment Plan

The supervision of the work by the consultant must be accomplished with constant awareness of the overall situation of the work and close liaison with the Ugandan governmental organizations concerned and the contractor so as to be able to ensure observance of the work schedule. The Project is classified into an equipment installation project, however, includes factors related to such civil work as construction of buildings and antenna foundations. Therefore, a resident supervisor who has ample experience in the field of building construction supervision shall be dispatched from commencement of building construction and to the completion of antenna construction. In addition, relevant consultant engineers shall be dispatched for supervision of

MW transmitting antennas in the transmitting stations and of studio equipment in Kampala radio Studio, respectively. The criteria for selection of such supervisory personnel are plentiful experience and appropriate technical judgment as well as broad vision and good adjustment capability.

2-2-4-5 Quality Control Plan

The consultant shall carry out quality control during the project execution stage based on the purport of the basic design. The JIS definition of quality control, i.e. ‘the structure of means for economically producing goods or services of quality that complies with customer requirements’, shall be adopted as the basic line of the project execution. The consultant will provide the contractors with appropriate guidance to entirely assure the quality of the equipment procured in this Project, by carrying out detailed surveillance on all the stages of the Project from the tender, installation, adjustment and inspection, and completion and handover. Among the all processes, the following is five important points in terms of quality control:

- Tendering
- Manufacturing of equipment
- Shipping and transportation
- Installation work in Uganda
- Adjustment, acceptance test and handover of the equipment

The priority issues at each of the above five stages are summarized below.

(1) Tendering

At the tendering stage, the consultant will examine in detail if the systems proposed by tenderers comply with the specifications provided for under the tender documents.

(2) Equipment manufacturing stage

Reviewing of the technical information materials, manufacturing drawings, samples, etc. submitted by the contractor and confirming in detail conformity with the written specifications. Confirmation of the functions and electrical characteristics of the 50kW MW transmitting equipment, which consists of products manufactured by special order, in the presence of the consultant at the time of inspection at the plant before shipment and close review of the degree of completion of the system.

(3) Shipping and Transportation

The consultant entrust the following verifications to a reliable, third-party inspection organization, in prior to two times of shipment of the equipment, respectively.

- Comparison of the contract equipment list with the shipping documents
- Comparison of the shipping documents with the equipment

(4) Installation Work in Uganda

During the installation work stage, it is no exaggeration to say that execution of safe, accident-free works is the ultimate key to successful installation work of the equipment. The consultant will provide guidance from this standpoint after prior confirmation of the details of work plan proposed by the contractor, such as planning an unforced schedule, allocating appropriate staff, work procedures, etc., so that the works will be smoothly carried out without any accident.

(5) Adjustment, Acceptance Test and Handover of the Equipment

After the installation, adjustment and inspection of the equipment are completed, the consultant will confirm if the original functions and electric characteristics of the equipment are reproduced, by comparing the test data taken at the sites and at the factory before shipment. Further, the consultant will provide the contractor with sufficient guidance on the handover of the equipment, suggesting, for example, that the contractor confirms the numbers on the contract equipment list and prepares a detailed spare parts list, so as to transfer adequate technical information to the Ugandan side.

2-2-4-6 Procurement Plan

(1) Plan for Procurement of Equipment

As stated in 2-2-1. Design Policy, equipment to be introduced for the project are, in principle, Japanese products, but the most appropriate countries will be selected when procuring equipment in consideration of the performances, cost, availability of spare parts and other factors concerning equipment to be procured.

As for the satellite receiving equipment to be used for receiving the programs transmitted from the radio studio in Kampala to the MW transmitting stations in the regions through satellite,

telephone hybrid system for on-air studios and digital audio workstations for production studio at Kampala Broadcast House, reliable products with cheaper cost are widely available in the U.S. and European countries. Therefore, procurement for the above equipment shall be considered from such OECD countries as the U.S. and European countries, as well.

The Table 2-8 below shows the countries where main equipment which are likely to be procured for the project.

Table 2-8: List of Main Equipment and Countries of Production Thereof

Equipment	Country of Manufacture			Reasons for Choice and Remarks
	Uganda	Japan	Other Country	
50kW MW transmitters and its peripheral equipment				Assured quality/performance, sureness of supply and use by UBC in the past
MW transmitting antenna system				Assured quality/performance, sureness of supply and use by UBC in the past
Program input and monitoring equipment (PIE)				Assured quality/performance, sureness of supply and use by UBC in the past
Satellite receiving equipment				Assured quality/performance and use by broadcasting stations in Uganda and elsewhere in the world in the past
Measuring equipment				Assured quality/performance, sureness of supply and use by UBC in the past
Automatic voltage regulators				Assured quality/performance, sureness of supply and use by UBC in the past
Isolation transformers				Assured quality/performance and sureness of supply
Air-conditioning and ventilation system				Assured quality/performance and sureness of supply
Emergency engine generators				Assured quality/performance and sureness of supply
Studio equipment				Assured quality and performance, sureness of supply and use by UBC in the past

Legend : Main country of manufacture : Possible country of manufacture

Equipment procured will be improved by contractors concerning equipment procurement in Japan, and the operations of the system as a whole will be checked before the delivery.

(2) Equipment Transportation Plan

1) Transportation Route

The route to transport equipment is as follows. An ocean vessel (container vessel) will depart a leading export port in Japan and arrive at Mombasa Port in Kenya. Transit custom clearance will be made at the port, and the articles will be delivered by truck to Kampala, the Mawagga Transmitting Stations in Mubende District, Mityana County, and the Kyeriba Transmitting Station in Kabale District, Kabale County.

2) Days of Transportation

The number of days required to transport equipment to be procured in Japan will be approximately 75 days. The breakdown is as follows. Materials and equipment transported by sea from Japan are normally landed at Mombasa Port in Kenya. After the discharge, transit custom clearance is made, and the articles are transported by truck in Kenya to the boundary with Uganda. Another transit custom clearance is made at the boundary between the two countries, and then the articles are transported by truck to individual sites in Uganda. The number of dates required for transportation and custom clearance, if not accurate, is shown in the following table. As seen, it takes some 2.5 months to load the articles in Japan and deliver them to the UBC Kampala Studio, and the Mawagga and Kyeriba Transmitting Stations.

Days Required for Transportation

Zones	Days required	Remarks
Japan to Mombasa Port	30 days	Sea transport
Mombasa Port	2 - 3 days	Transit custom clearance
Mombasa Port to boundary between Kenya and Uganda	14 days	Transportation by truck
Boundary between Kenya and Uganda	14 days	Transit custom clearance
Boundary between Kenya and Uganda to Kampala	10-14 days	Transportation by truck (300km)
Kampala to Mawagga	1 day	Transportation by truck (70km)
Kampala to Kabale	2 days	Transportation by truck (420km)

3) Transportation Licensing Procedures

Although import goods under grant aid projects are exempted from taxes, it is still necessary to be so stated in contract documents (exchange of notes) to be signed by donor countries and the government of Uganda. The process required to obtain tax exemption is shown below:

Contractors of the project submit a letter calling for tax exemption to UBC.

UBC submits a letter calling for tax exemption to the Ministry of Information and National Guidance.

The Ministry of Information and National Guidance applies for tax exemption to the Ministry of Finance, Planning and Economic Development.

The Ministry of Finance, Planning and Economic Development approves the tax exemption.

As for custom clearance, as a result of hearings to local agencies in charge of custom clearance and transportation, it has been confirmed that it is necessary to submit the following documents 7 days prior to the arrival of the project equipment at Mombasa Port.

- (Original) Bill of Lading
- (Duplicate) Commercial Invoices
- (Duplicate) Packing List

2-2-4-7 Operation Guidance Plan

- Plan for Instructions in Initial Operations

Instructions in initial operations will be provided through on-the-job training. The focus of the instructions in the operation of MW transmitting equipment will be on: the operation method such as starting-up and shutting-down, of the transmitters; methods of measuring and adjusting various properties; the way to use the dummy loads; the way to switch the 3-port U-link panels; the way to handle the emergency engine generators and switch the power source between the commercial-use power source and the emergency generators; and trouble shootings. As for the studio equipment, instructions will be given through on-the-job training, focusing on the operations of various recorders and players, and the operation and maintenance of the system incorporating the audio mixer.

- Plan for Instructions in Operations

Instructions in operations will be given after completion of the installation work by engineers dispatched from agencies responsible for procurement of the equipment. Those will be given for 15 days each concerning the MW transmitting equipment and the studio equipment. The instructions in the transmitting equipment will focus on skill practices making use of the 50kW transmitters, the program input and monitoring equipment, measuring equipment, etc. procured under the project. The aim is to make it possible for UBC staff members themselves to be able to operate and maintain the equipment after the delivery. Instruction manuals attached to individual equipment will be used for the actual instructions, and theoretical accounts and basic explanations about the systems will be carefully given with the help of whiteboards. Basically the same approach will be adopted for the instructions in the studio equipment, though, since UBC has little experience in handling digital equipment, the focus will be on the basic digital technology. A simple test to see the understanding among participants will be conducted for the courses of both the transmitting devices and the studios.

2-2-4-8 Soft Component (Technical Assistance) Plan

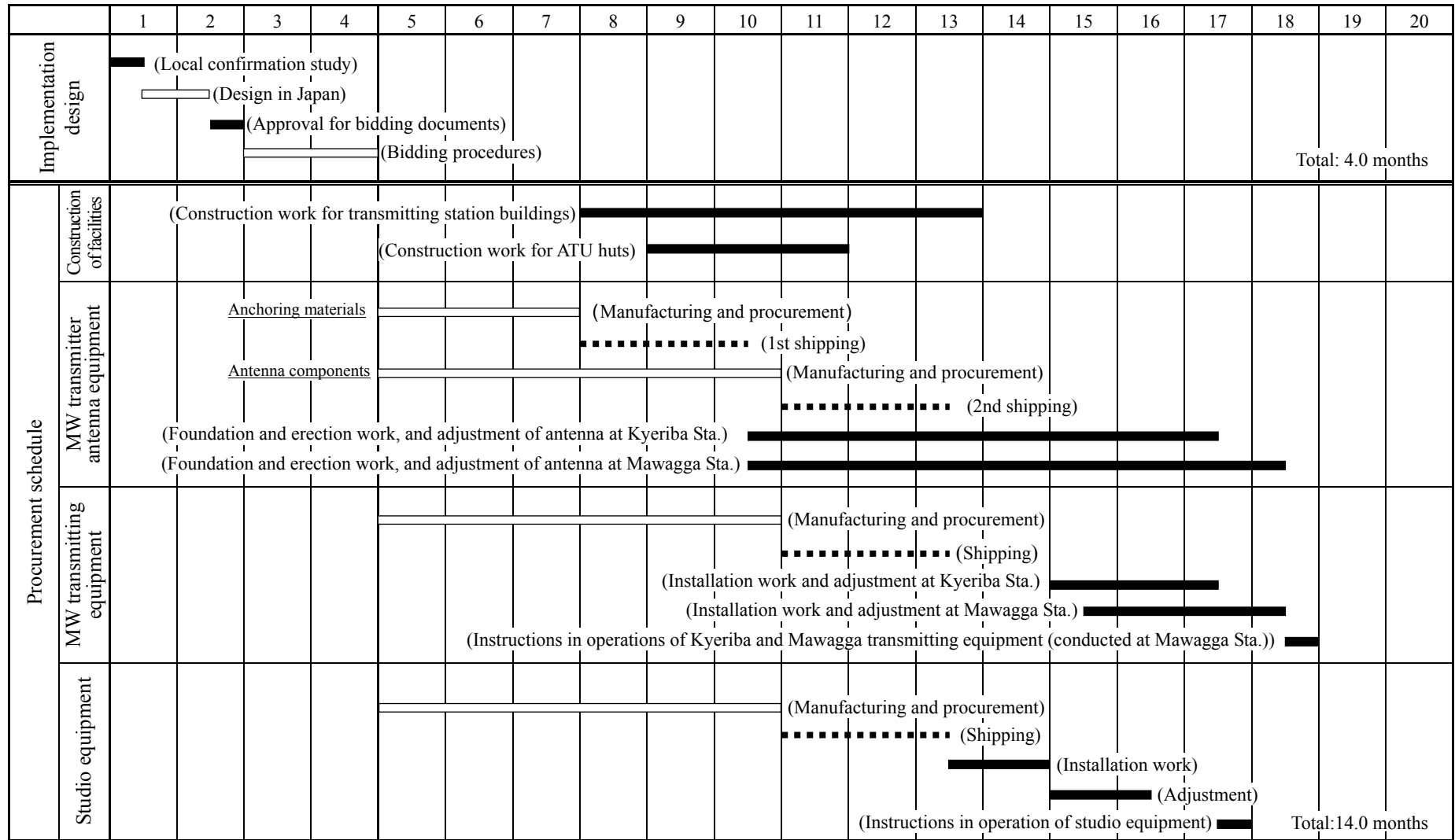
The 50kW MW transmitters to be procured in the project will be a solid-state system using semiconductors, rather than the vacuum-tube system. Instructions in the operation and maintenance of the equipment procured in the project will not be conducted as soft component on the grounds: (i) that it is the best to actually operate the equipment so as to learn the operational and maintenance methods of the 50kW MW transmitters; (ii) that the equipment is fairly stable and seldom broken because there is no high-voltage circuits in the solid-state system; (iii) that it does not require full-scale training for the operation and maintenance because the solid-state system is designed fairly simply compared to the vacuum-tube type; and (iv) that the system of the studio equipment, though mainly consisting of digital machines, is not excessively complicated.

2-2-4-9 Implementation Schedule

The schedule of implementation of the project is as shown below, the total terms required for the construction work being 18.0 months (See Table 2-9).

- (1) Implementation design and bidding: 4.0 months
- (2) Procurement and installation work of equipment: 14.0 months

Table 2-9: Time Schedule of Work Implementation



■ : Local work □ : Work in Japan

2-3 Obligations of Recipient Country

This chapter presents the matters to be borne by the Ugandan side when the project is implemented under grant-aid cooperation by the Japanese government.

(1) Bringing-in of the Commercial Power Source

At the Mawagga and Kyeriba MW Transmitting Stations, the electrical power has been supplied from transformers mounted to an electrical pole near the entrances to the premises to the existing transmitting station buildings. In the project, it is necessary to extend the power line from the transformers to the station buildings to be newly built in accordance with the procedure stipulated by regulations of the Ugandan Electric Supply Public Corporation. The distance between the buildings and the transformers mounted on the electrical pole is 150m. Since an estimated cost per meter calculated based on hearing to the public corporation is Ush. 40,000/m, the necessary cost per site will be set at Ush. 6,000,000.- (JPY: approx. 378,000). Thus, the total cost to bring in the power cables for the two sites will be Ush. 12,000,000.- (JPY: approx. 756,000).

(2) Removal of the Existing Antennas

The existing 2 sets of 130m antenna towers at the Mawagga MW Transmitting Station and the existing 2 sets of 75m antenna towers at the Kyeriba Stations will be removed, and the materials must be brought in outside the premises before the commencement of the construction work of the new antenna masts by equipment constructors. For this, only steel structures of the existing antennas will be removed, because the existing antennas are self-supporting towers, and given the fact that the location of the new antenna masts is deliberately chosen so as to be remote from the location of the existing antennas in consideration of the removal work and the convenience for the construction of the new antenna masts. Thus, it is unnecessary to remove the foundations of the existing antennas, the existing ATU huts and brick walls around the antennas unless UBC has some particular reasons to do so. According to quotations which UBC has obtained from local constructors, the removal of the existing antenna towers at the Mawagga and Kyeriba MW Transmitting Stations will cost Ush. 21,948,000.- (JPY: approx. 1,383,000) and Ush. 31,270,000.- (JPY: approx. 1,970,000), respectively. Thus, the total cost to remove the existing antenna towers will be Ush. 53,218,000.- (JPY: approx. 3,353,000).

(3) Building Work of Fences around the Transmitting Stations

Since powerful electrical waves radiate out of radio MW transmitting stations, the entry to the premises always involves certain risks. UBC should take, as an agency to provide the radio broadcasting services, all possible measures to prevent local citizens from unnecessarily entering

the premises. In the meantime, the field survey has found that 1,600m and 1,350m of fences were removed at the Mawagga Station and at the Kyeriba Station respectively. According to quotations which UBC has obtained from local constructors, the building work of new wired fences to make up for the portions where fences have been removed will cost Ush. 88,000,000.- (JPY: approx. 5,544,000) for the Mawagga Station and Ush. 74,250,000.- (JPY: approx. 4,677,000), the total amount being Ush. 162,250,000.- (JPY: approx. 10,221,000). This work should be also completed before the constructors commence the construction work of the new antenna masts.

(4) Removal of Existing Equipment in Production Studios at UBC Kampala Headquarters and Repair of Studio Interiors

The existing equipment in the production studios should be removed prior to the commencement of the installation work to promptly install new equipment in the space, and hence this removal work should fall under the scope of work of UBC. The equipment installation work in the on-air studios, on the other hand, shall be included in the scope of work of the Japanese side, in light of the necessity for carrying out the replacement work in a systematized way so as to agree with the broadcasting time table and not to interrupt the broadcasting services during the installation work. In both cases, it is significant to determine the work procedures through in-depth consultation with UBC program producers.

In accordance with the equipment replacement, UBC is planning to repair the interiors in the on-air studio as well as the production studios at their own expense, and to earmark Ush. 10,000,000. (JPY approx. 630,000), for each of the six studios, which totals to Ush. 60,000,000.- (JPY approx. 3,780,000).

(5) Refurbishment of staff lodgings at Mawagga and Kyeriba MW Transmitting Stations

UBC intends to deploy maintenance personnel at the two project sites in Mawagga and Kyeriba around the clock after the completion of the project. To this end, UBC is planning to renovate the severely-superannuated staff lodgings at the two stations, more specifically two houses at Mawagga and three at Kyeriba, a total of five. The total renovation cost is so far estimated at Ush. 200,000,000.- (JPY approx. 12,600,000), composed of Ush. 40,000,000.- (JPY approx. 2,520,000) for each of the five houses.

(6) Acquisition of All the Necessary Legal Permissions and Approvals in Uganda

If the necessity for obtaining prior permissions or approvals from the relevant ministries or agencies concerning the construction of the facilities, antennas, etc., UBC shall take responsibility to do so as it is the main actor of the project. It is understood that currently there are no permissions or approvals to which special attention must be paid. However, if laws or

ordinances which may affect the project are newly stipulated, UBC is required to apply for and obtain relevant permissions forthwith, as new laws or ordinances may be likely to affect the content of the project or the work schedule plan. UBC is also asked to pay careful attention to the release of such laws and ordinances and, from time to time, provide the Japanese side with the information.

(7) Tax Benefits in relation to Import of Broadcasting Equipment

Where the procedures for tax exemption concerning equipment to be imported in the project are concerned, it is necessary for UBC to gather sufficient information in advance from the relevant ministries and agencies concerning, for example, precise steps to be taken, documents which particularly UBC must prepare as the consignee, and the time required at each stage to obtain approvals.

(8) Issue of Authorization to Pay (A/P) and payment of bank commissions thereof

The Authorization to Pay is normally issued on the basis of agreements between the bank representing the recipient country side and the bank representing the Japanese side. Bank commission is set up country by country, and according to UBC's own survey, UBC has to pay 0.27% of the total assistance amount to the agent bank of the Uganda side as the handling fee in Uganda. Thus, UBC estimates Ush. 47,546,000.- (JPY approx. 2,995,000) as a necessary commission fee for this project.

(9) Appropriate and Efficient Maintenance and Operation of the Equipment Procured in the Project

The details of appropriate and efficient operation and maintenance of the procured equipment will be discussed in the next chapter.

(10) Execution of other obligations stated in the Exchange of Notes (E/N)

UBC must obtain a copy of the exchange of notes as soon as possible after it takes place, in order to be able to fully understand the work that is to be accomplished by the recipient country side, and if it has any doubts concerning the content thereof, it must address them to the Ministry of Information and National Guidance or other relevant authorities.

2-4 Project Operation Plan

2-4-1 Operation and Maintenance System

Of the transmitting stations to be constructed under the project, there are no UBC personnel at the Mawagga MW Transmitting Station, where as there is only one administrative staff at the Kyeriba MW Transmitting Station at the moment. But UBC plans, if the project is to be implemented, to allocate a total 8 workers on two shifts as shown below by the latter half of 2008 at latest when the installation work of equipment is scheduled. Of these workers, 4 persons apart from the director of the station are technical staff: it can be concluded that the operations on two shifts will be able to manage and maintain the station appropriately as the broadcasting services will be provided for 18 hours a day, and the adoption of the solid-state transmitters will make it easier for them to maintain the equipment.

(Personnel Allocation Plan for Each Transmitting Station to be Constructed)

Director: Senior Engineering Technician	: 1 person
Engineering Technician	: 1 person
Assistant Technician	: 1 person
Technical Assistants / Operators	: 2 persons
Supplementary Staffs	: 3 persons
<hr/>	
Total	: 8 persons
Total of 2 Stations	: 16 persons

According to the a personnel allocation plan shown above, the number of administrative staffs to be newly allocated to the two transmitting stations will be 15 since there is one staff already stationed at the Kyeriba Station. According to UBC's deployment plan, the number of UBC staff members engaging in these assignments had been increased at the end of fiscal 2006: the number of senior engineering technicians increased from 1 to 4; the number of engineering technicians from 11 to 13; and the number of assistant technicians from 8 to 13. At the same time, 12 technical assistants/operators will be newly hired. Summing up these changes in the number of personnel, the total number of staff members with qualifications as administrators at these transmitting stations, which is currently 20, will be more than doubled to 42 by the end of fiscal 2006. Thus, if this employment plan is implemented without fail, there will be no particular problems in its human resource allocations at the time when the project is completed.

2-4-2 Project Maintenance Plan

(1) Maintenance of the MW Transmitting Equipment

As a result of technological innovation, equipment trouble has markedly decreased thanks to improvement of the reliability and durability of the broadcasting equipment and to reduction of the number of parts constituting it. However, for effective operation of the broadcast equipment over a long period of time not only routine operating management and periodical checks but also repairing of trouble, changing of parts and other maintenance work are still necessary. Through correct operation and strict carrying out of routine checks as well as oiling, adjustment, cleaning, repairing and other preventive maintenance, it is possible to prevent occurrence of trouble and accidents and enhance equipment safety and functionality as well as lengthening service life, which does not depend only on the number of hours that the equipment has been operated. In periodical checks it is necessary to do dismantling and repairs and changing of consumable parts in accordance with the maintenance manual.

It is necessary that UBC become thoroughly familiar with the systems of the MW radio broadcasting system to be newly brought in and establish and operate and manage a system for obviating accidents before they happen. For that it is essential that maintenance personnel be designated and that they receive on-the-job training at the sites from the stage of installation and adjustment of the equipment so as to be thoroughly familiar with the systems by the time that they are handed over. It is generally considered that the rate of trouble with broadcasting equipment changes over time as indicated in the diagram below.

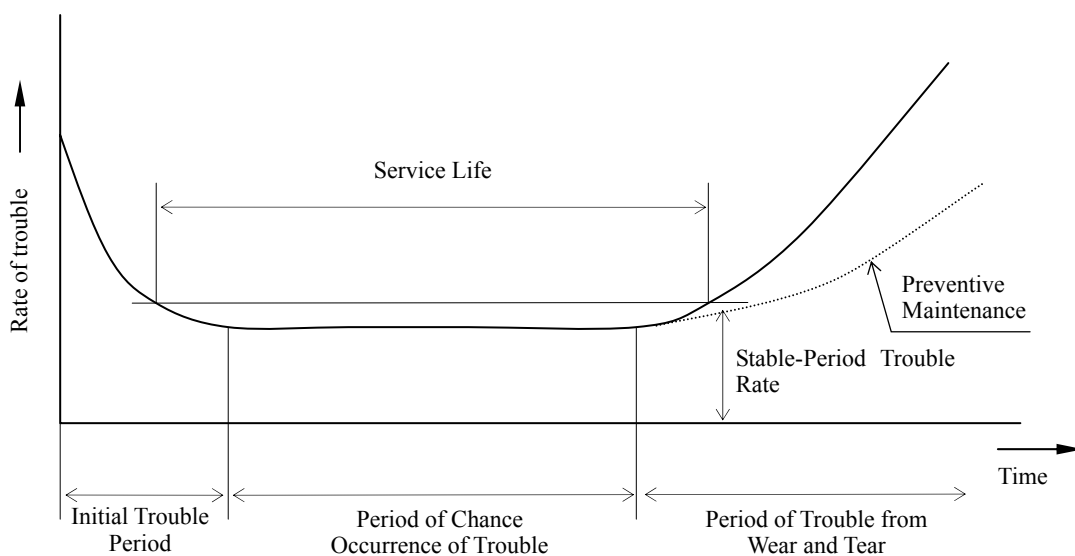


Fig. 2- 23: Relation between Operation Time and Rate of Trouble

Initial trouble period

The trouble in this period is caused by initial defects due to bad lots, etc., and it is considered important to identify the reasons for the trouble as quickly as possible and take steps to eliminate it.

Period of chance occurrence of trouble

After eliminating the problems of the initial trouble period, the trouble rate stays just about constant at a low level. The time, up to the beginning of the following period, that of trouble from wear and tear, during which the trouble rate is below a certain level is called the service life.

Period of trouble from wear and tear

After the service life of parts, units of equipment or system, i.e. the period of chance occurrence of trouble, the trouble rate rises again. Since trouble in this period occurs because of deterioration from wear and tear of pieces of equipment or parts constituting the system, it is considered that appropriate preventive maintenance can reduce trouble and extend the service life of the equipment or system.

The periodical check and maintenance items for the 50kW MW transmitter, MW transmitting antenna and studio equipment that will be necessary after completion of this Project are indicated in Table 2-10, Table 2-11 and Table 2-12 respectively.

Table 2-10: Periodical Check and Maintenance Items for the 50kW Transmitters

Equipment Designation or Part	Checking And Maintenance Item	Checking Cycle				
		Daily	Weekly	Monthly	Semi-annually	Annually
Power Supply Circuit	Voltage					
	State of connection of the cable of the main power source terminal and state of connection of the electromagnetic switches					
	Ground terminal					
Cooling Circuit	Abnormal noise, vibration and direction of rotation of blower					
Control Circuits	Transmitter switching control (U-link)					
	Checking of interlock					
Power Amplifier	Surface temperature, checking with bare hands					
	Cleaning of heat radiation fins					
	Internal visual inspection for discoloring, etc.					
Output Circuit	Looseness of large-scale magnetic condenser, coil, terminal board and other connection part					
RF Exciter	Internal visual inspection of each module for discoloring, etc.					

Equipment Designation or Part	Checking And Maintenance Item	Checking Cycle				
		Daily	Weekly	Monthly	Semi-annually	Annually
Frame	Cleaning of inside					
	Visual checking of inside parts					
Electrical Characteristics	Checking of state of operation and metering (voltage and current of the different parts)					
	Signal-to-noise ratio					
	Distortion ratio					
	Frequency characteristics					

Table 2-11: Periodical Check and Maintenance Items for MW Transmitting Antenna

Part	Check and Maintenance Items	Checking Cycle
Mast	Checking, by telescope, etc. from at least 2 directions, and repairing, if necessary, of verticality of the steel column from 2 directions perpendicular to one another, damage to bolts, rivets, the body of the tower, platform insulators, top hat, foundation, etc., displacement, state of fitting, etc.	7 to 8 years
Guys	Checking for, and repairing if necessary, deterioration, dirtiness, rusting corrosion, looseness, damage, etc. of the guy anchor blocks, wires, fittings (sockets, clips, turnbuckles, shackles, etc.), guy insulators, insulator fittings, guy choke coils, etc.	7 to 8 years
Accessories	Checking for and repairing deterioration, dirtiness, rust corrosion, looseness, damage, etc. of air navigation obstruction lights, lightning rod, tuning house, tuning box, lead-in bowl-shaped insulators, power feed tubes, power feed lines, protective railing, etc.	7 to 8 years
Others	The antenna masts will have to be periodically painted and repaired.	7 to 8 years

Table 2-12: Periodical Check and Maintenance Items for Studio Equipment

Name of equipment or parts	Items subject to check and maintenance	Checking cycle			
		day	month	6 months	year
Audio Mixer	To confirm operation of faders				
	To confirm audio levels				
	To measure properties of frequency				
	To measure distortion rate				
CD Recorder, CD Player, MD Recorder, Cassette Tape Recorder, Audio Recorder	To confirm audio levels				
Digital Audio Workstation	To confirm audio levels				
	To confirm functions				

In addition to these maintenance and checking procedures, it is also necessary to earmark the budget for systematic procurement and upgrading of equipment. The lifetimes of major pieces of equipment to be provided in the project may be set as follows in accordance with the performances of the equipment at UBC, and in Tanzania and other neighboring countries.

- 50kW MW transmitter: 15 years
- Program input and monitoring equipment: 12 years
- Air-conditioning system: 12 years
- Emergency engine generator: 15 years
- Audio mixer: 10 years
- Equipment for audio recording (CD players, cassette tape recorders, etc.):
12 years
- MW transmitting antenna: 50 years (However, painting, inspections and repair are conducted every 7 – 8 years)

(2) Facility Maintenance Management

Maintenance of the transmitting station buildings to be built by the Ugandan side will consist mainly of routine cleaning and repairs and parts replacement for wear and tear, damage and deterioration due to age of interior and exterior facings and finishes. For ongoing effective maintenance it is desirable that UBC itself prepare a building maintenance manual that adequately takes into account its operation and maintenance management system and the economic and construction conditions in Uganda.

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

In case this Project is implemented under the grand aid scheme of the government of Japan, the total project cost is estimated at 1,125 million Japanese Yen. Details of project cost to be borne by Japanese side and Uganda side are estimated in accordance with the below conditions as follows;

(1) The Project Cost to be Borne by Japanese Side

Approximate 1,108 million

Items		Cost (million Yen)	
Equipment procurement and Installation	MW transmitting system equipment for Mawagga Transmitting Station	369.7	1,048.6
	MW transmitting system equipment for Kyeriba Transmitting Station	268.7	
	Studio equipment for UBC Kampala Studio	124.7	
Management of procurement and installation works including construction of Transmitting Station Buildings and Main/Sub ATU Huts		285.5	
Consultant fee			60.1

This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the grant.

(2) The Project Cost to be Borne by the Ugandan Side

Ush. 538,014,000.- (approximate 34 million Japanese Yen)

- Leading-in of the commercial power to the new transmitting station buildings at Mawagga and Kyeriba MW Transmitting Stations : Ush. 12,000,000.-
 - Dismantlement of steel structure of the existing antenna towers at Mawagga and Kyeriba MW Transmitting Stations : Ush. 53,218,000.-
 - Construction of boundary fences at Mawagga and Kyeriba MW Transmitting Stations : Ush.165,250,000.-
 - Repair of the interiors at the UBC Kampala HQ studio : Ush. 60,000,000.-
 - Renovation of the staff lodgings at Mawagga and Kyeriba : Ush.200,000,000.-
 - Bank commissions on issuance of Authorizations to Pay : Ush. 47,546,000.-
-
- Total : Ush.538,014,000.-

(3) Estimation Conditions

- 1) Date of cost estimation: September, 2006
- 2) Exchange rate: 1US\$ = 116.45 Japanese Yen
 1US\$ = 1,839.04 Ush
 1Ush = 0.063 Japanese Yen
- 3) Implementation period: Refer to Implementation Schedule.
- 4) Others: The Project shall be implemented in accordance with the system of Japanese Grant Aid

2-5-2 Operational and Maintenance Cost

The operational and maintenance cost additionally required after the implementation of the project will be as follows:

(1) Labor Cost

The personnel for maintenance and administration of the Mawagga and Kyeriba MW Transmitting Stations to be newly built will be secured so long as the employment plan of UBC for fiscal 2006/07 is realized as scheduled. On the other hand, the section in charge of program production at the Kampala Studio is currently staffed with about 60 workers temporarily employed from outside, together with 10 staff members. There is no need to increase the workforce in the program production section particularly for the operation of the studio after the implementation of the project.

(2) Program Production Cost

The MW Blue programs which used to be broadcast from the present Mawagga and Kyeriba MW Transmitting Stations are now broadcast from local FM broadcasting stations in Masaka, Mbarara and other cities in the Central and Western Regions. Thus, the project will not cause an increase in the necessary annual program production cost.

(3) Electrical Power Cost

The new MW radio broadcasting systems to be newly introduced will require an annual cost of some Ush. 108,502,000.- (JPY: approx. ¥6,836,000) at the Mawagga MW Transmitting Station; and some Ush. 198,080,000.- (JPY: approx. 6,836,000) at the Kyeriba MW Transmitting Station, totaling Ush. 306,582,000.- (JPY: approx. 19,315,000). The grounds for this calculation are shown as follows:

(Annual electricity consumption when commercial power is fully available)

Equipment	At the time of output level of 50kW			
	Electricity Consumption Per Hour	Operating Hours	Annual Operating Hours	Annual Electricity Consumption
50kW MW Transmitter	70kW	18h	6480h	453,600kWh
Peripheral Equipment (PIE, Measuring Equipment, Dehydrators)	5kW	18h	6480h	32,400kWh
Air Conditioner (1 set)	10kW	18h	6480h	64,800kWh
Buildings Use (lighting, and others)	5kW	18h	6480h	32,400kWh
Total	90kW			583,200kWh

(Duration of Power Outrage at the Mawagga and Kyeriba Stations, including power failure while broadcasting services are provided and planned power cuts)

Transmitting Station	Duration of Power Outrage in a Month	Annual Duration of Power Outrage
Mawagga Station	282h	3,384h
Kyeriba Station	69h	828h

(Calculation of actual annual electricity charges, excluding the time when engine generators are in use)

Transmitting Station	Annual Operating Hours	Annual Electricity Consumption	Electricity Charges (Ush./kWh)	Annual Electricity Charges (Ush.)
Mawagga Station	(6480-3384)=3096h	278,640kWh	389	108,502,416
Kyeriba Station	(6480-828)=5652h	508,680kWh	389	198,079,992
Total		787,320kW		306,582,408

(4) Fuel Cost (Diesel Oil)

The annual fuel cost of the emergency engine generators which will be used when the electrical power is shut down will be some Ush. 67,680,000.- (JPY: approx. 4,264,000) at the Mawagga Transmitting Station and some Ush. 16,560,000.- (JPY: approx. 1,043,000) at the Kyeriba Station, totaling Ush. 84,240,000.- (JPY: approx. 5,307,000). The grounds for this calculation are shown as follows:

(Conditions of Setting the Output Level, etc. of Transmitters at the time of Power Failure)

From the viewpoint of economical efficiency, the output level of the transmitters will be reduced from 50kW to 10kW when the electrical power is shut down. The capacity of the emergency engine generators then will be set at 65kVA (52kW) in consideration of the power consumption of the transmitters, 40kW, and the location, that is, highland at the altitude of 2500m. Since the electricity consumption of generators in this class averages 10 liters per hour, the following figures are adopted.

(Calculation of Annual Fuel Cost for Emergency Engine Generators)

Transmitting Station	Annual Duration of Power Outrage	Annual Fuel Consumption (ℓ)	Fuel Charges (Ush./ℓ)	Annual Fuel Cost (Ush.)
Mawagga Station	3,384h	33,840	2,000	67,680,000
Kyeriba Station	828h	8,280	2,000	16,560,000
Total				84,240,000

(5) Other Maintenance Cost

It is essential to calculate maintenance and repair costs, as the equipment potentially has the nature of failing down in the course of routine operation. Traditionally, 1% of the equipment value is allotted to an annual maintenance budget in broadcasting stations all over the world, but more recently, the amount of maintenance cost tends to decline owing to the ease of maintenance work brought about by digitalization of equipment and emergence of solid-state transmitters. Whereas most of the equipment to be procured under the project will most likely be made in Japan, UBC has come up with an estimation of an annual maintenance cost at Ush. 11,111,000.- (JPY approx. 700,000), which roughly accounts for 0.1% of the procurement cost, given that Japanese products procured in preceding projects have seldom gone down, the equipment to be procured shall be delivered with spare parts, solid-state transmitters to be introduced will require less maintenance cost than the old-fashioned vacuum-type transmitters, and so on. The implementing agency also forecasts an annual budget for maintaining the facilities to be newly constructed by the Japan side, including the transmitter buildings and the staff lodgings, as Ush. 7,000,000.- (JPY approx. 441,000). These calculations can be considered quite reliable because they are set based on the track records of UBC.

The maintenance cost that will be necessitated after the implementation of the project will be Ush. 408,933,000, or JPY 25,763,000, the sum of the above calculations. These maintenance costs are equivalent to 2.7% of the projected total budgetary revenue of UBC for FY 2006/2007 prospective

at the time of February 2007, and at the same time equal to the corresponding maintenance costs in FY2006/2007 (a total of Ush. 409,820,000). Therefore, the maintenance cost of UBC after the completion of the project will be doubled. It also remains approximately 10% of the overall operation cost of UBC for FY 2006/2007.

Although UBC has detached from the Ministry of Information to run as an independent organization on the self-supporting accounting basis, it is deemed that the government will continue to support UBC until the broadcaster become capable enough to operate with its own financial sources, in view of the facts that UBC is the only public broadcasting organization in Uganda, implementation of the project is recognized as to largely contribute to the country's overall goal, PEAP, the coverage of MW broadcasting services will be tripled from current 25% to 77% of the nation, and other national benefits.

As a matter of fact, the government has granted UBC with subsidies worth 70% of UBC's budget this fiscal year (as of January 2007), and further assistance is expected to accumulate to 75% of the entire revenue by the fiscal year end. In addition, the Office of Prime Minister has issued a note promising to provide assistance to UBC in general and also to support the initial and maintenance costs to be incurred as a result of the project. Thus, it is considered that there will be no problem in securing operation and maintenance cost after the implementation of the project.

2-6 Other Relevant Issue

When implementing this project, UBC, as the project implementing agency, must form a project team designed to smoothly carry out the project immediately after the signing of the Exchange of Notes for this project. The team shall work not only for appropriation of the budgets necessary for carrying out the undertakings of the recipient country, but also creation of an overall implementation schedule to clarify what is due on which date, based on an accurate understanding of the procedures to be taken as well as the time it takes to acquire necessary permissions and licenses. Moreover, the team shall maintain close communication with Japanese project members to share the information pertaining to the project and do everything it can do to detect any possible hindrances or problems and solve such issues smoothly.

Chapter 3 Project Evaluation and Recommendations

Chapter 3 Project Evaluation and Recommendations

3-1 Project Effect

The project is expected to bring about the following effects.

Status quo and current issues	Measures to be taken under this grant-aid assistance project	Effects of the project and the degree of improvement
<p>UBC as the sole nationwide radio broadcaster in Uganda started middle wave broadcasting services with seven MW transmitting stations in late 1970s, initially covering approximately 90% of the whole population. However, due to damage inflicted by domestic conflicts and lightning, in addition to the severe aging of the equipment, together with the lack of spare parts of the discontinued equipment, Butebo MW Transmitting Station alone is capable of providing services at the present, only covering approximately 25% of the Ugandans. That being the case, it is necessary to recover the service coverage in order to fairly distribute information throughout the country and contribute to the PEAP that the country carries forward. It is an urgent agendum, therefore, to improve, among the MW Transmitting Stations that are not operational today, Mawagga (Central Region) and Kyeriba (Western Region) MW Transmitting Stations both of which cover quite a large number of people, however, it is difficult to do so due to financial constraints. Moreover, the studio equipment at the UBC Broadcast House in capital Kampala is also significantly degraded, hindering production of programs for the three channels (Red, Blue, Butebo) of UBC.</p>	<p>The followings shall be implemented:</p> <p>(Mawagga MW Transmitting Station)</p> <ul style="list-style-type: none"> • Provision of a 50kW MW Transmitter and construction of the transmitting station building <p>(Kyeriba MW Transmitting Station)</p> <ul style="list-style-type: none"> • Provision of a 50kW MW Transmitter and construction of the transmitting station building <p>(Kampala Broadcast House)</p> <ul style="list-style-type: none"> • Renewal of on-air studio equipment (Red, Blue, Butebo) • Renewal of production studio equipment (D, E, F) 	<ul style="list-style-type: none"> • The service area of UBC's middle wave broadcast will expand from current 25% to 77% approximately, enabling roughly 21.4 million Ugandans to receive MW broadcast programs. • A population of 7.25 million and of 6.9 million in the Central and Western Regions respectively, totaling up to 14.15 million to be covered by this project, will be able to receive MW broadcasting services. • Stable production and broadcasting of programs in the three channels will be realized, diversifying information to be distributed to inhabitants in remote areas.

3-1-1 Direct Effect

(1) Reach of the project

Central and Western Regions in Uganda.

(2) Number of beneficiaries

7.25 million residents in the Central Region and 6.9 million in the Western Region: a total of 14.15 million people.

(3) Benefits

1) Expansion of Radio Service Area

The coverage of UBC's middle wave broadcasting service will expand from current 25% to 77% more or less, and a total of approximately 21.4 million Ugandans will be able to receive MW broadcast services. A population of roughly 14.15 million targeted in this project, consisting of 7.25 million in the Central Region and 6.9 million in the Western Region, will newly be enabled to receive MW broadcasting services.

2) Realization of Stable Broadcasting Services

The equipment at the radio studio of the Kampala Broadcasting Station will experience less trouble in the course of program production, leading to a stable production of programs that are called for by the Ugandan people. The programs created shall be broadcast in a stable manner by the systemized middle wave broadcasting facilities.

3-1-2 Indirect Effect

The renewed equipment in the production studios will realize production of diversified programs.

The systemized middle wave transmitting facilities will realize stable broadcasting services. Furthermore, real time delivery of emergency information in case of natural disasters, accidents and incidents, riots, etc. is expected to contribute to reduction of victims.

Residents in the Central and Western Regions will have greater opportunities for acquiring information, leading to correction of the digital divide among Ugandan people. Further, information on health and hygiene, education, agriculture, social and public welfare, etc., in addition to cultural and international information, will be made available to the citizens, which will contribute to improvement of their living environment. Further, economic and industrial activities will be stimulated and ripple to poverty reduction policies that the government is tackling with.

3-2 Recommendations

3-2-1 Recommendations on Issue to be Solved by Ugandan Side

UBC has just been founded by a new broadcasting policy instituted in November 2005, with a view to a self-support accounting system. While the government of Uganda hopes the organization to be independent from the outset, it is still extremely difficult for UBC to run without assistance from the government. Accordingly, UBC must be managed through strengthened coordination among the Office of Prime Minister and other related organizations and governmental subsidies, for a few years after the implementation of the Project.

Nevertheless, from the standpoint of future independent developability, UBC must make all possible efforts to operate on its own budget, by seeking ways to find secure and stable financial resources, such as introduction of a subscription fee system, expansion of commercial broadcast, etc. In the meantime, as for commercial broadcast, it is critical to give due thoughts to the issue of consistency between expansion of independent revenues from commercial broadcast and its mission as a public broadcaster.

In addition, the number of staff members was at least halved by the lay-off carried out at the inception of the corporation, and hence the shortage in human resources has been supplemented by hiring temporary workers when necessary. However, it is vital to reconstruct the organization by employing an adequate number of regular workers necessary for producing sound programs and providing the entire nation with broadcasting services as a public broadcaster.

This project will enable UBC to use three MW Transmitting Stations in order to send its programs to approximately 77% of the population. However, the remaining four MW Transmitting Stations will be left non-operational, prohibiting roughly 23%, or approximately 6.4 million of the Ugandan people from benefiting from stable MW broadcasting services. UBC is expected to strive for immediate development of the four MW Transmitting Stations not in service, in corporation with the government, based on its own recognition as being the only nationwide radio broadcast service provider that can convey information to people living in remote areas.

3-2-2 Recommendations on Technical Assistance and Other Donors

Although UBC is an integrated organization combining TV and radio services, it is still too new to establish adequate management. Therefore, it is vital to set up a sound management system by reference to the current status of operation and management of other broadcasting stations that operate both TV and radio broadcast, such as NHK, BBC, etc., through surveys, advice from experts, etc.

Also in Africa, there are public stations that broadcast both TV and radio in, for example, neighboring Tanzania, Kenya, and Cameroon. It is also called for to ascertain and refer to the operation status of these broadcasting stations.

In addition, the technical level required for operating and maintaining the equipment to be procured under the project is suitable for the incumbent UBC staff as far as guidance on the operation is provided after the installation of the equipment is completed. However, technical training of engineers to be newly employed in the future and training on new technologies in association with digitalization are indispensable. UBC personnel have upgraded their technical skills by taking training courses in Japan, Europe, the U.S., etc. In Japan, for example, they took training courses given by JICA through entrustment to NHK. (However, such courses must be conducted separately from this project under other assistance programs such as JICA's technical cooperation. UBC should effectively make use of these technical cooperation schemes in order to improve their technical level.

There is nothing in particular to be noted with respect to coordination with other donors. However, it is imperative for UBC to keep firmly in mind that without its self-help efforts it cannot grow into a standalone entity regardless of any assistance activities.