

#### 4-3-3 Basic Design Drawings

- Fig. 4-3-1 TV BROADCAST NETWORK COVERAGE
- Fig. 4-3-2 SITE LAYOUT FOR NEW HASSAKE STATION
- Fig. 4-3-3 SITE LAYOUT FOR EXISTING HASSAKE STATION
- Fig. 4-3-4 SEQUENCE DIAGRAM OF TRANSMITTING SYSTEM OF NEW HASSAKE STATION
- Fig. 4-3-5 FLOOR LAYOUT OF NEW HASSAKE STATION
- Fig. 4-3-6 SEQUENCE DIAGRAM OF ELECTRICAL INSTALLATION OF NEW HASSAKE STATION
- Fig. 4-3-7 TRANSMITTING ANTENNA TOWER OF NEW HASSAKE STATION
- Fig. 4-3-8 TRANSMITTING ANTENNA HORIZONTAL RADIATION PATTERN OF NEW HASSAKE STATION
- Fig. 4-3-9 SITE LAYOUT FOR DEIR EZ ZOR STATION
- Fig. 4-3-10 SEQUENCE DIAGRAM OF TRANSMITTING SYSTEM OF DEIR EZ ZOR STATION
- Fig. 4-3-11 FLOOR LAYOUT OF DEIR EZ ZOR STATION
- Fig. 4-3-12 SEQUENCE DIAGRAM OF ELECTRICAL INSTALLATION OF DEIR EZ ZOR STATION
- Fig. 4-3-13 TRANSMITTING ANTENNA HORIZONTAL RADIATION PATTERN OF DEIR EZ ZOR STATION
- Fig. 4-3-14 SITE LAYOUT FOR TABQUA STATION
- Fig. 4-3-15 SEQUENCE DIAGRAM OF TRANSMITTING SYSTEM OF TABQUA STATION
- Fig. 4-3-16 FLOOR LAYOUT OF TABQUA STATION
- Fig. 4-3-17 SEQUENCE DIAGRAM OF ELECTRICAL INSTALLATION OF TABQUA STATION
- Fig. 4-3-18 TRANSMITTING ANTENNA HORIZONTAL RADIATION PATTERN OF TABQUA STATION





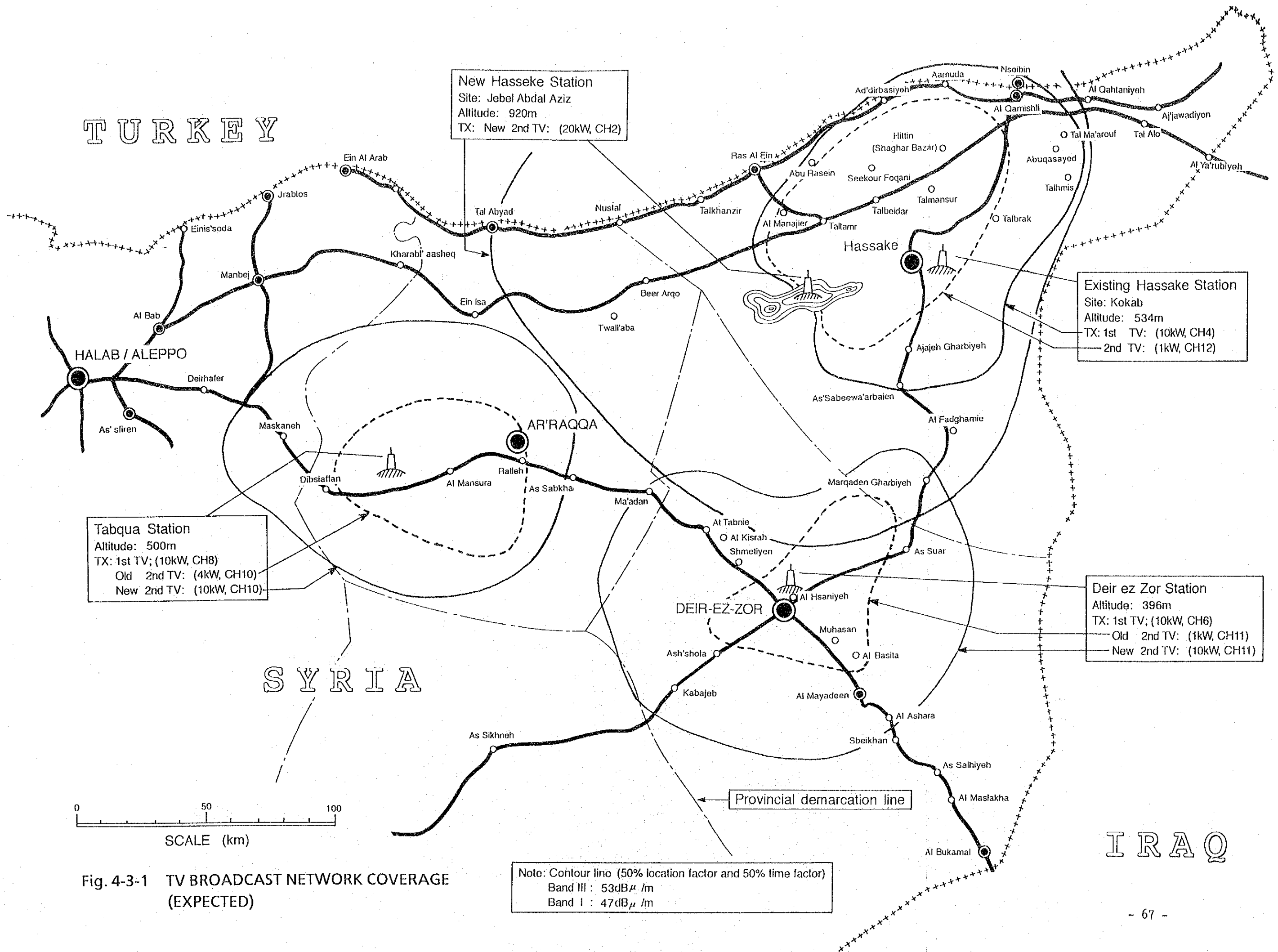


Fig. 4-3-1 TV BROADCAST NETWORK COVERAGE (EXPECTED)



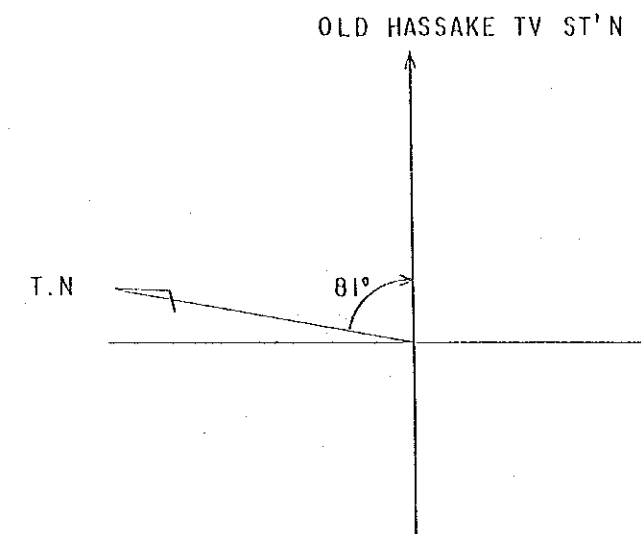
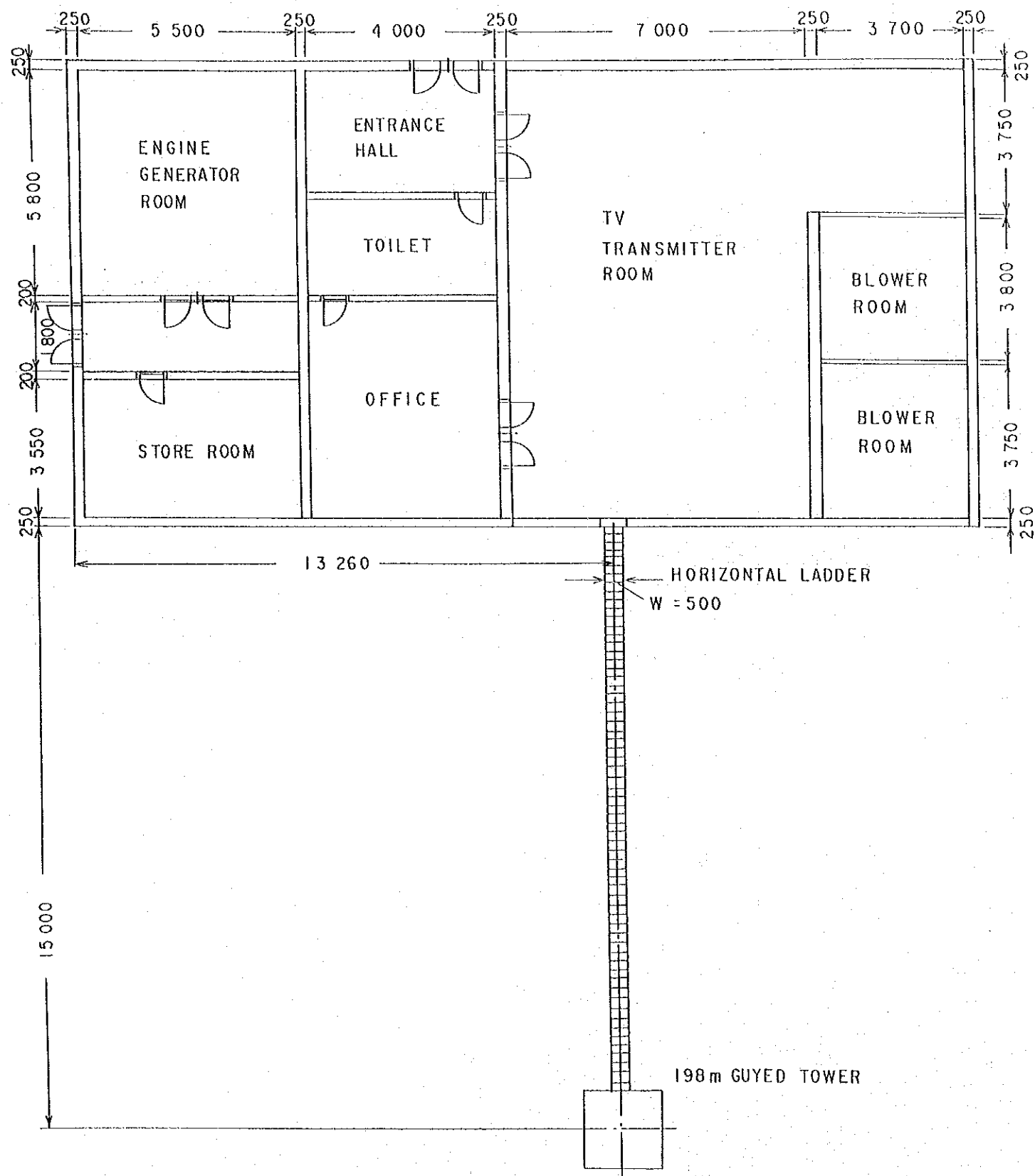


Fig. 4-3-2 SITE LAYOUT FOR NEW HASSAKE STATION

UNIT : mm



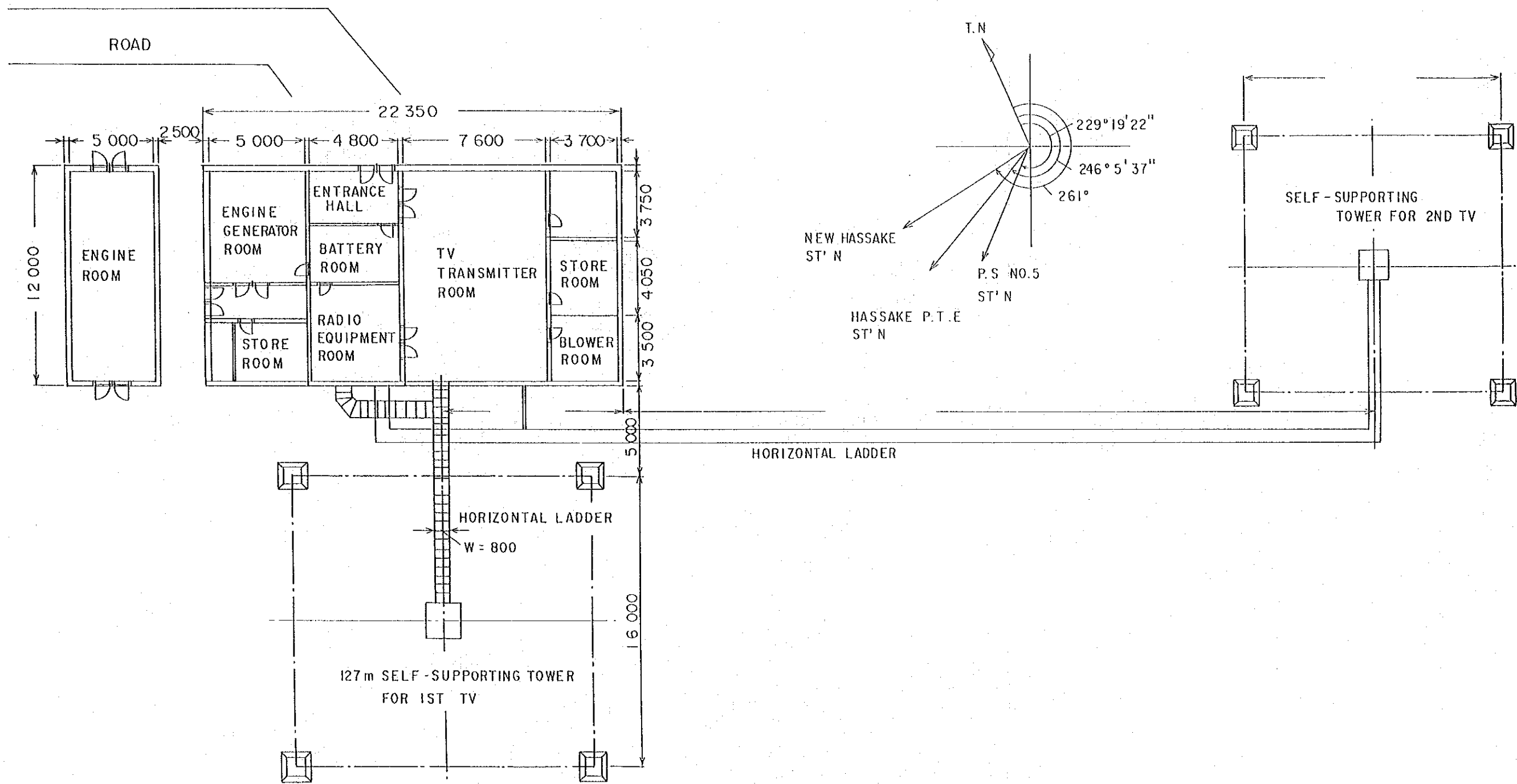


Fig. 4-3-3 SITE LAYOUT FOR EXISTING HASSAKE STATION

UNIT : mm





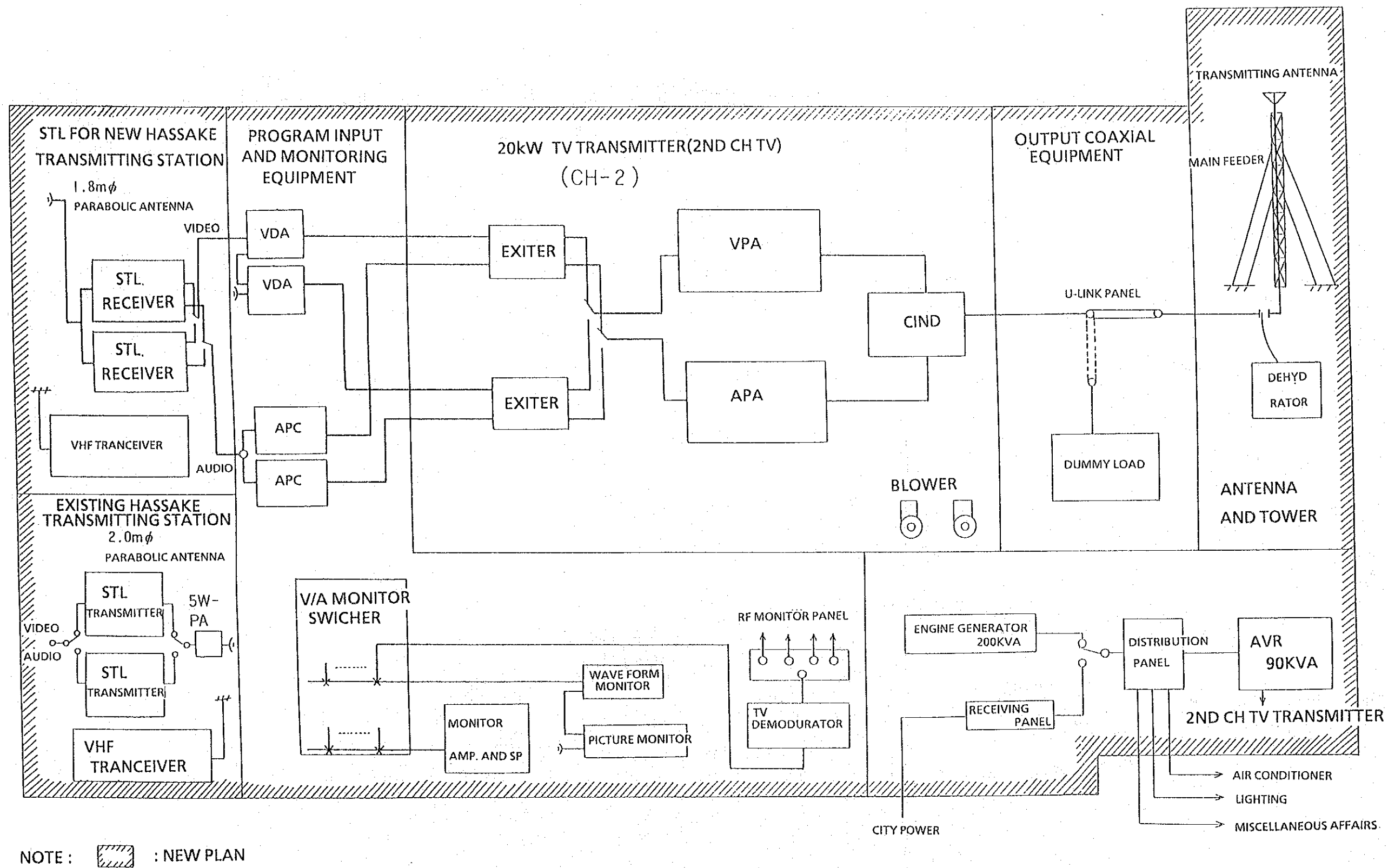
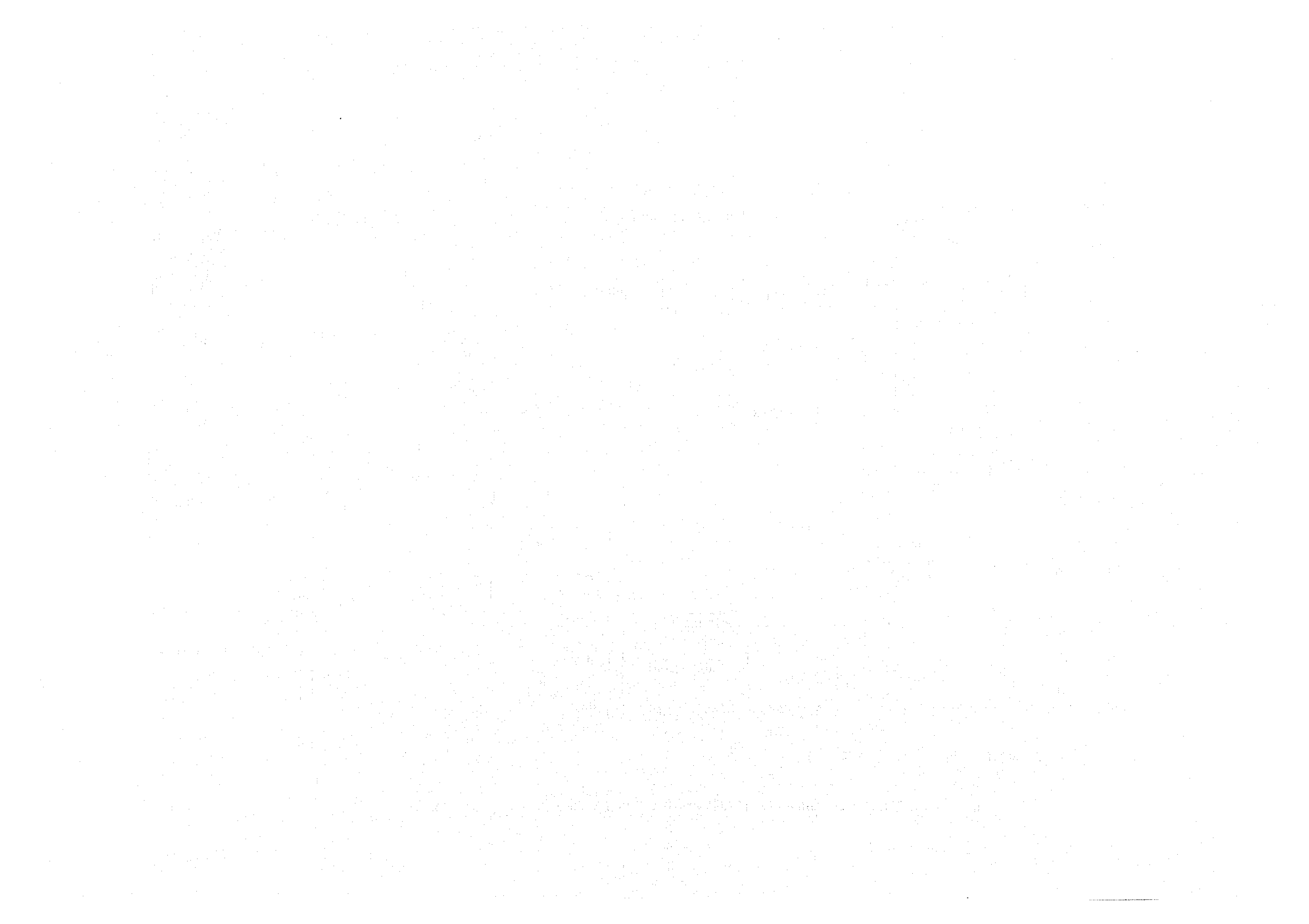
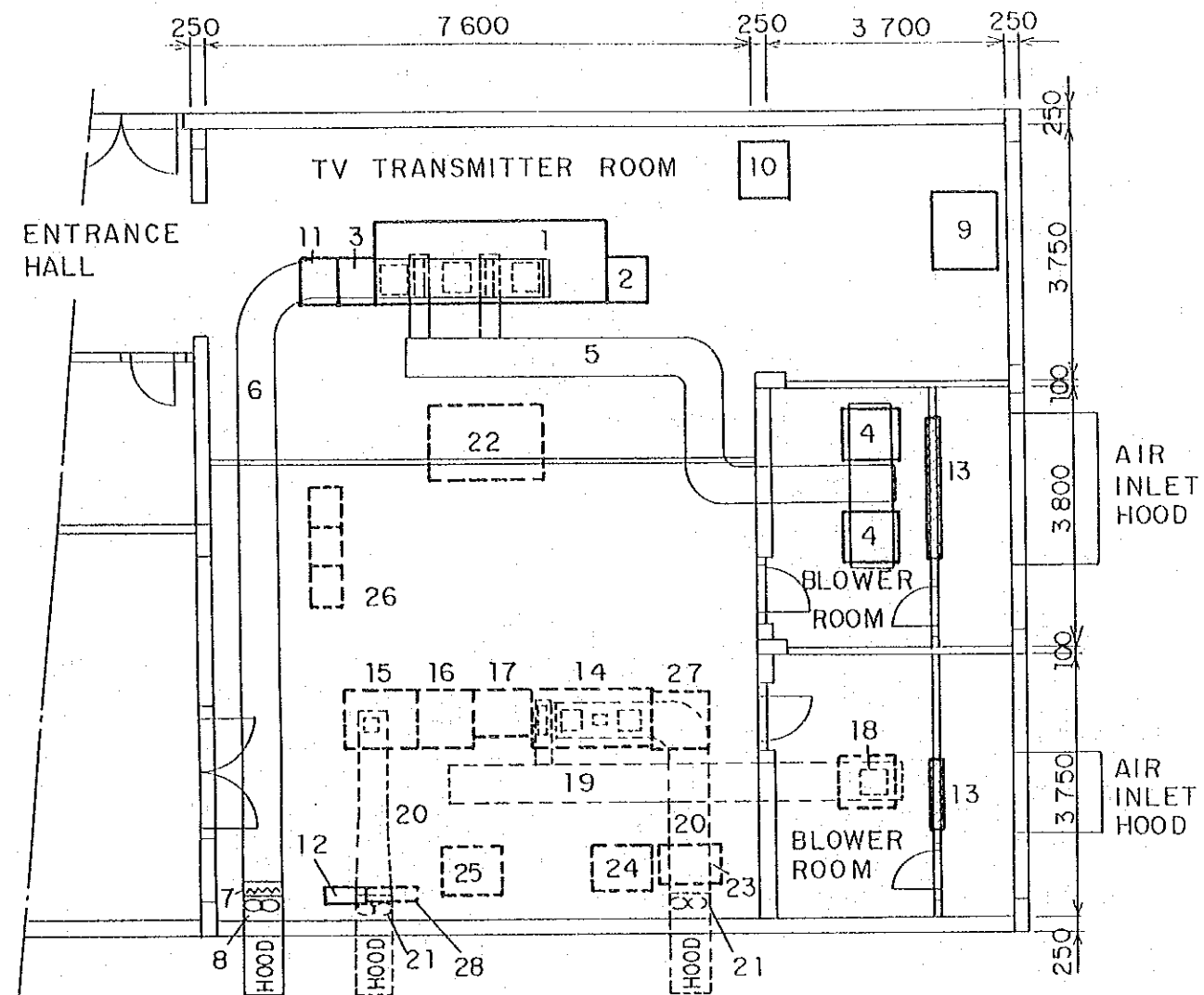


Fig. 4-3-4 SEQUENCE DIAGRAM OF TRANSMITTING SYSTEM OF NEW HASSAKE STATION





1. 20kW TV TX (2ND TV)
2. U-LINK (2ND TV)
3. PROGRAM INPUT AND MONITORING EQUIPMENT (2ND TV)
4. COOLING BLOWER (2ND TV)
5. INLET AIR DUCT (2ND TV)
6. EXHAUST AIR DUCT (2ND TV)
7. CANVS DUCT (2ND TV)
8. EXHAUST FAN (2ND TV)
9. AVR & PDB (2ND TV)
10. DUMMY LOAD 10kW (2ND TV)
11. STL RECEIVER (2ND TV)
12. DEHYDRATOR (2ND TV)
13. AIR FILTER FRAME
14. 10kW TV TRANSMITTER (1ST TV)
15. 1kW TV TRANSMITTER (1ST TV)
16. CIND (1ST TV)
17. OUTPUT COAXIAL EQUIPMENT (1ST TV)
18. COOLING BLOWER (1ST TV)
19. INLET AIR DUCT (1ST TV)
20. EXHAUST AIR DUCT (1ST TV)
21. EXHAUST FAN (1ST TV)
22. CONTROL CONSOLE (1ST TV)
23. HT TRANSFORMER (1ST TV)
24. AIR CONDITIONER
25. DUMMY LOAD 10kW (1ST TV)
26. PROGRAM INPUT AND MONITORING EQUIPMENT (1ST TV)
27. 1kW TV TRANSMITTER (2ND TV)
28. DEHYDRATOR (1ST TV)

NOTE :  : NEW PLAN  
 : INSTALLED BY BTA

Fig. 4-3-5 FLOOR LAYOUT OF NEW HASSAKE STATION

UNIT : mm





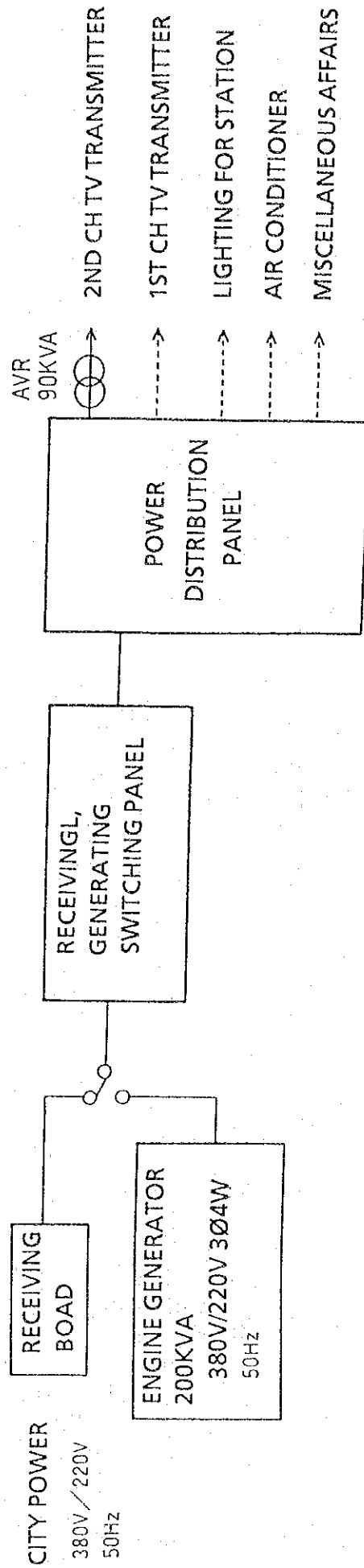


Fig. 4-3-6 SEQUENCE DIAGRAM OF ELECTRICAL INSTALLATION OF NEW HASSAKE STATION







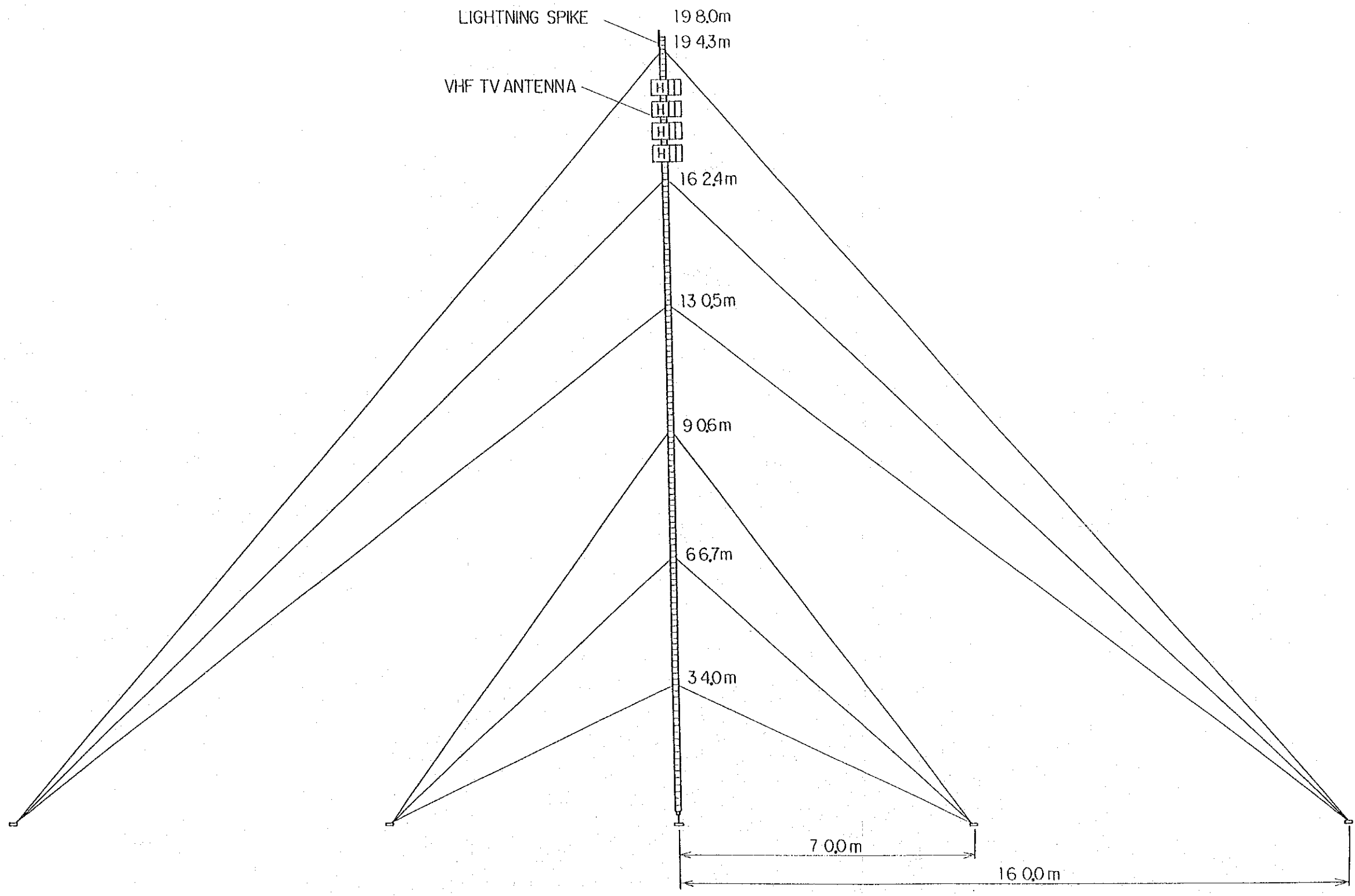


Fig. 4-3-7 TRANSMITTING ANTENNA TOWER OF NEW HASSAKE STATION

S = 1/1000





	RESPONSE OF HORIZONTAL POLARIZATION AND HORIZONTAL RADIATION PATTERN	

GAIN : 7.3 dB

ANTENNA STRUCTURAL :  
2 DP : 4. 3. 3. 4

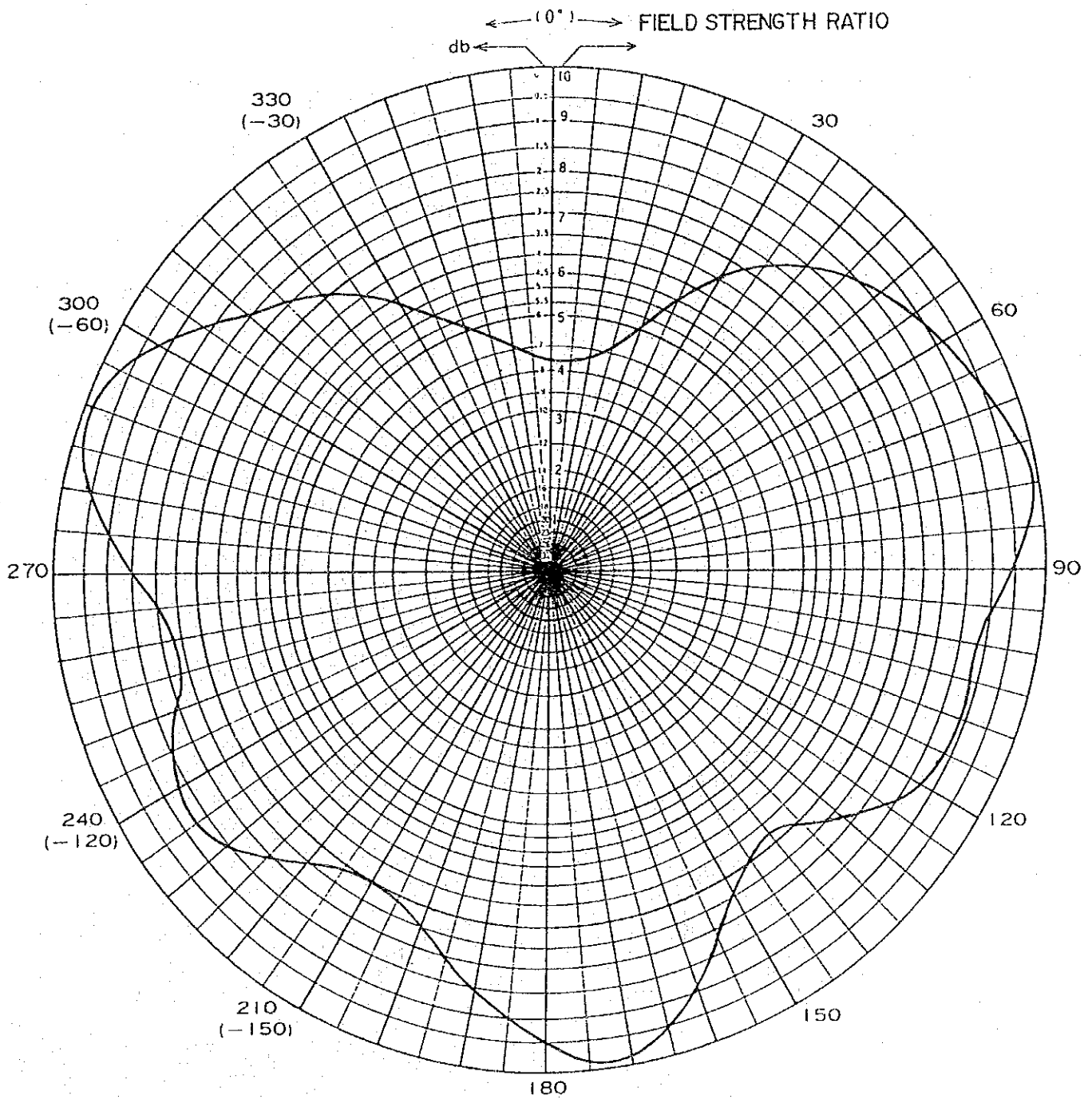


Fig. 4-3-8 TRANSMITTING ANTENNA  
HORIZONTAL RADIATION  
PATTERN OF NEW HASSAKE STATION





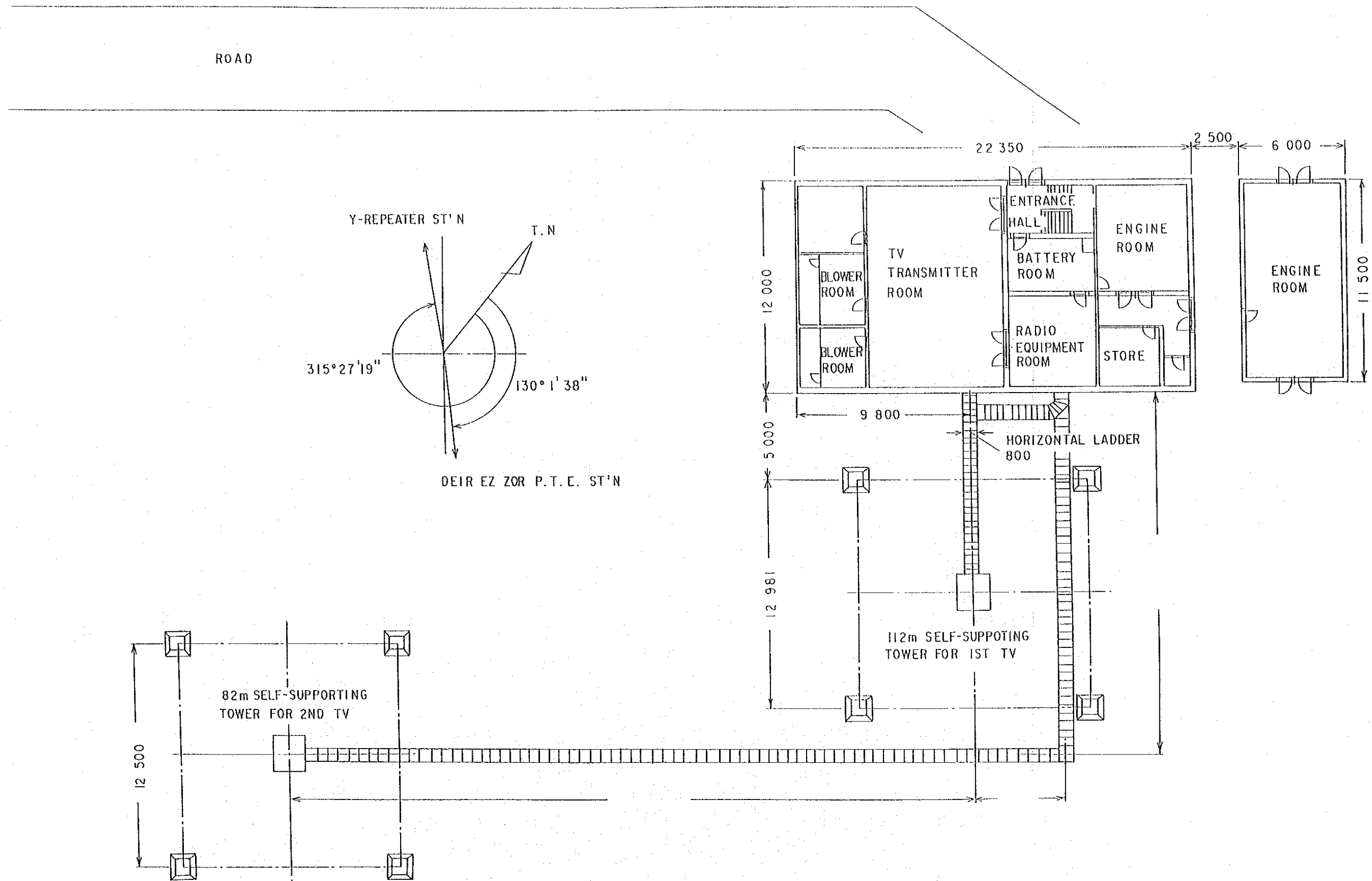


Fig. 4-3-9 SITE LAYOUT FOR DEIR EZ ZOR STATION

UNIT : mm





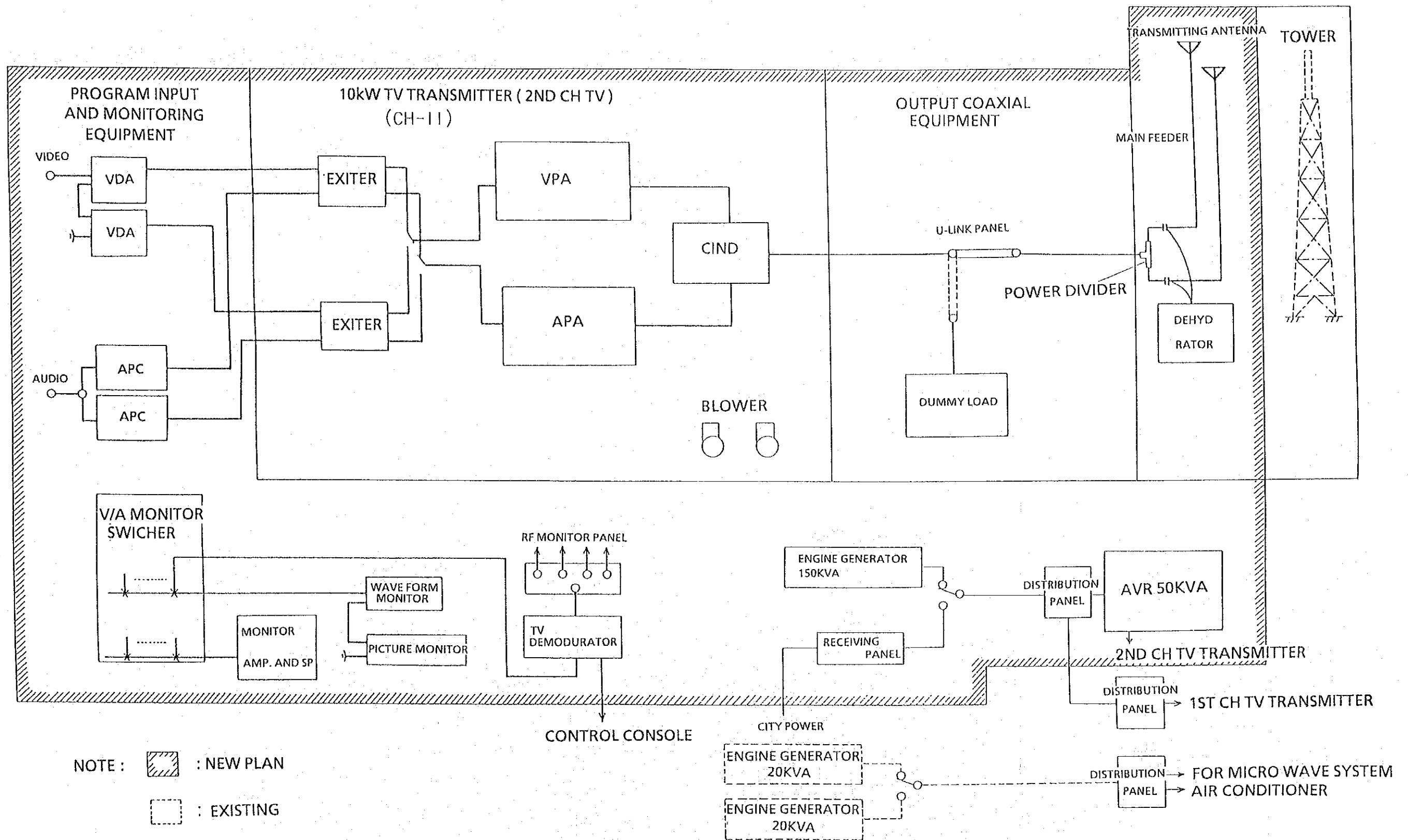
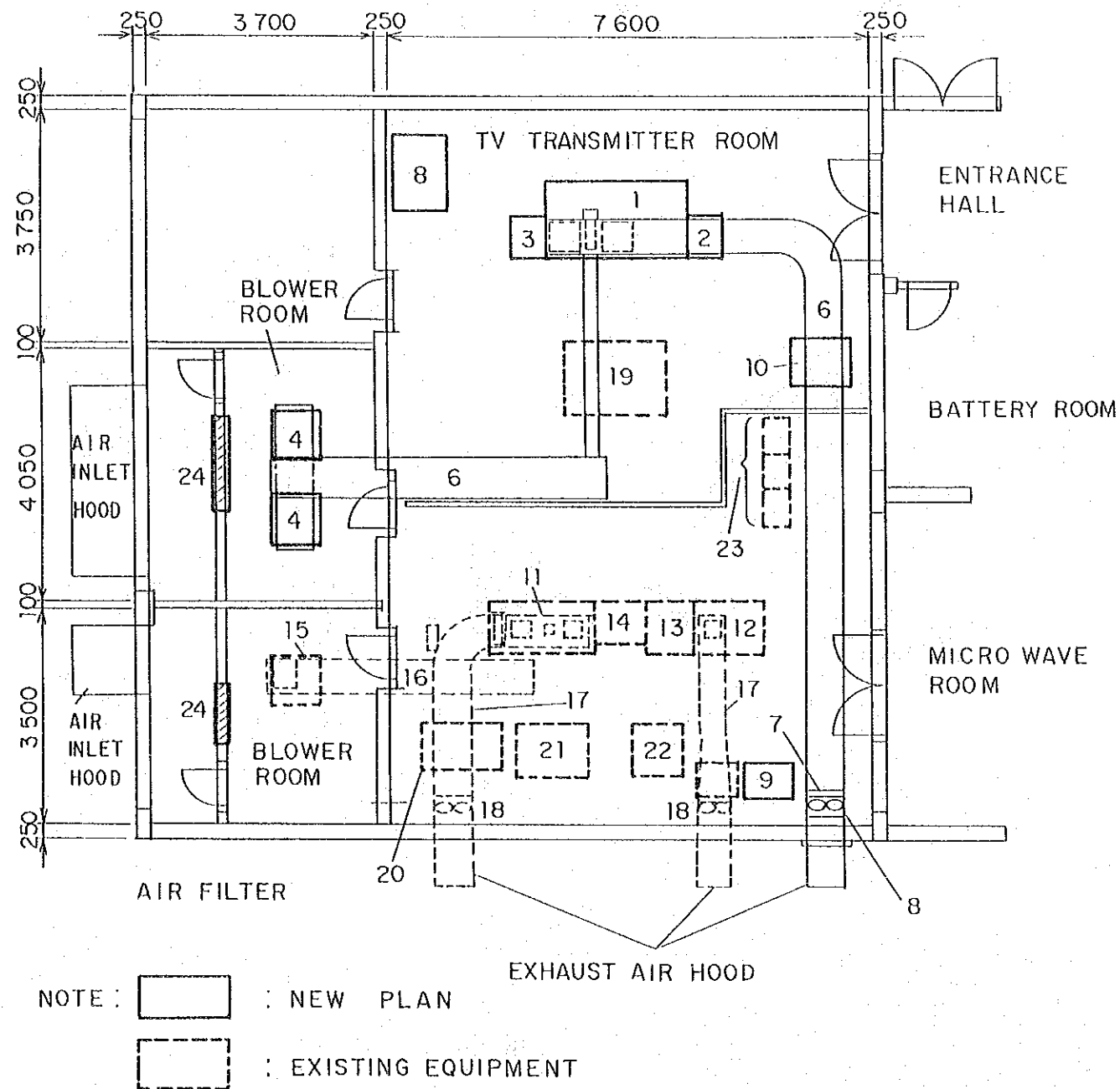


Fig. 4-3-10 SEQUENCE DIAGRAM OF TRANSMITTING SYSTEM OF DEIR EZ ZOR STATION





1. 10kW TV TX (2ND TV)
2. U-LINK (2ND TV)
3. PROGRAM INPUT AND MONITORING EQUIPMENT (2ND TV)
4. COOLING BLOWER (2ND TV)
5. INLET AIR DUCT (2ND TV)
6. EXHAUST AIR DUCT (2ND TV)
7. CANVS DUCT (2ND TV)
8. EXHAUST FAN (2ND TV)
9. DEHYDRATOR (2ND TV)
10. DUMMY LOAD 10kW (2ND TV)
11. 10kW TV TRANSMITTER (1ST TV)
12. 1kW TV TRANSMITTER (1ST TV)
13. CIND (1ST TV)
14. OUTPUT COAXIAL EQUIPMENT (1ST TV)
15. COOLING BLOWER (1ST TV)
16. INLET AIR DUCT (1ST TV)
17. EXHAUST AIR DUCT (1ST TV)
18. EXHAUST FAN (1ST TV)
19. CONTROL CONSOLE (1ST TV)
20. HT TRANSFORMER (1ST TV)
21. AIR CONDITIONER
22. DUMMY LOAD 10kW (1ST TV)
23. PROGRAM INPUT AND MONITORING EQUIPMENT (1ST TV)
24. AIR FILTER FRAME

Fig. 4-3-11 FLOOR LAYOUT OF DEIR EZ ZOR STATION

UNIT : mm



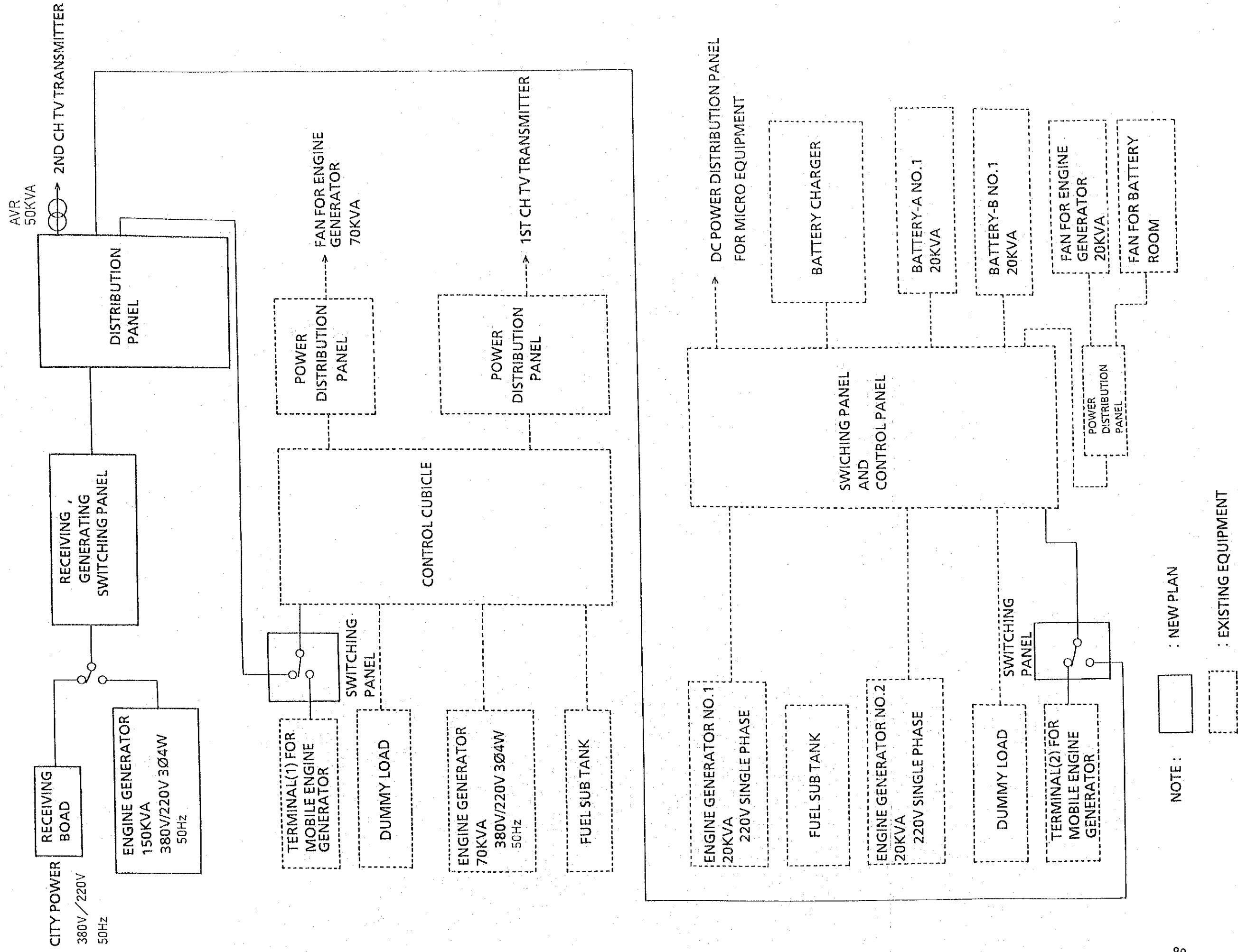


Fig. 4-3-12 SEQUENCE DIAGRAM OF ELECTRICAL INSTALLATION OF DEIR EZ ZOR STATION







	RESPONSE OF HORIZONTAL POLARIZATION AND HORIZONTAL RADIATION PATTERN	
--	---	--

GAIN : 9.3 dB

ANTENNA STRUCTURAL :  
4DP : 4. 4. 2. 4

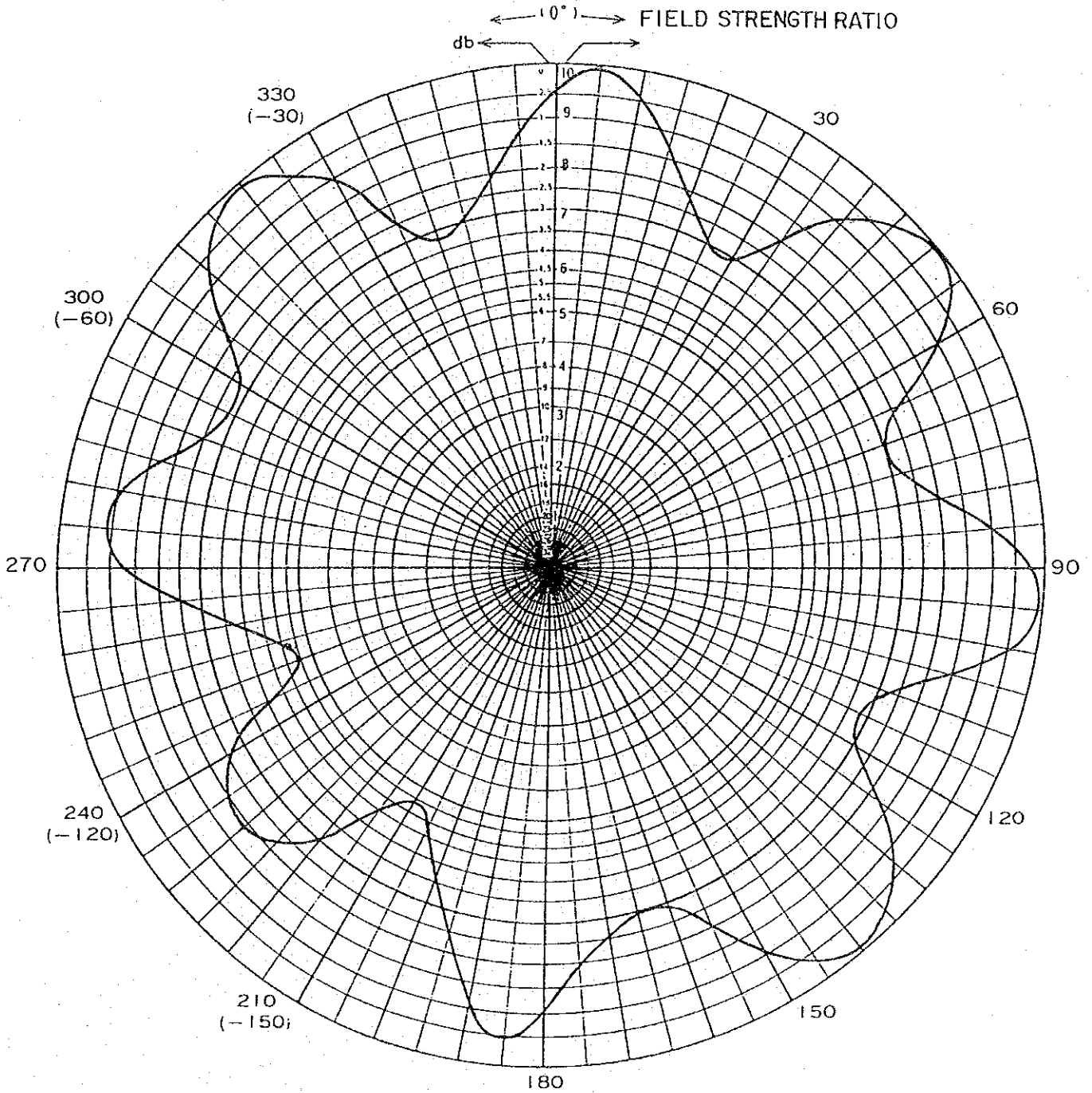


Fig. 4-3-13 TRANSMITTING ANTENNA  
HORIZONTAL RADIATION  
PATTERN OF DEIR EZ ZOR STATION





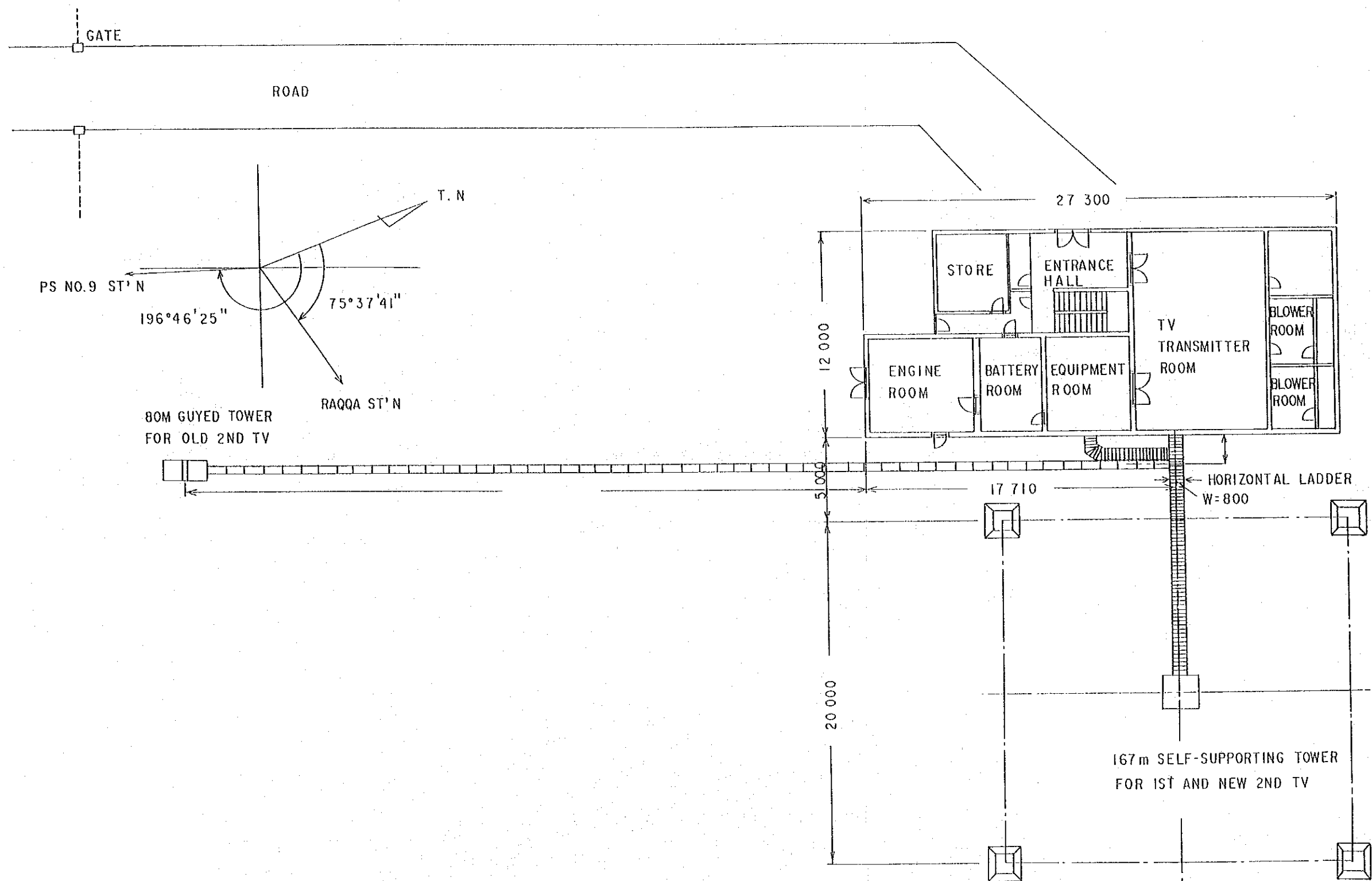


Fig. 4-3-14 SITE LAYOUT FOR TABQUA STATION

UNIT : mm



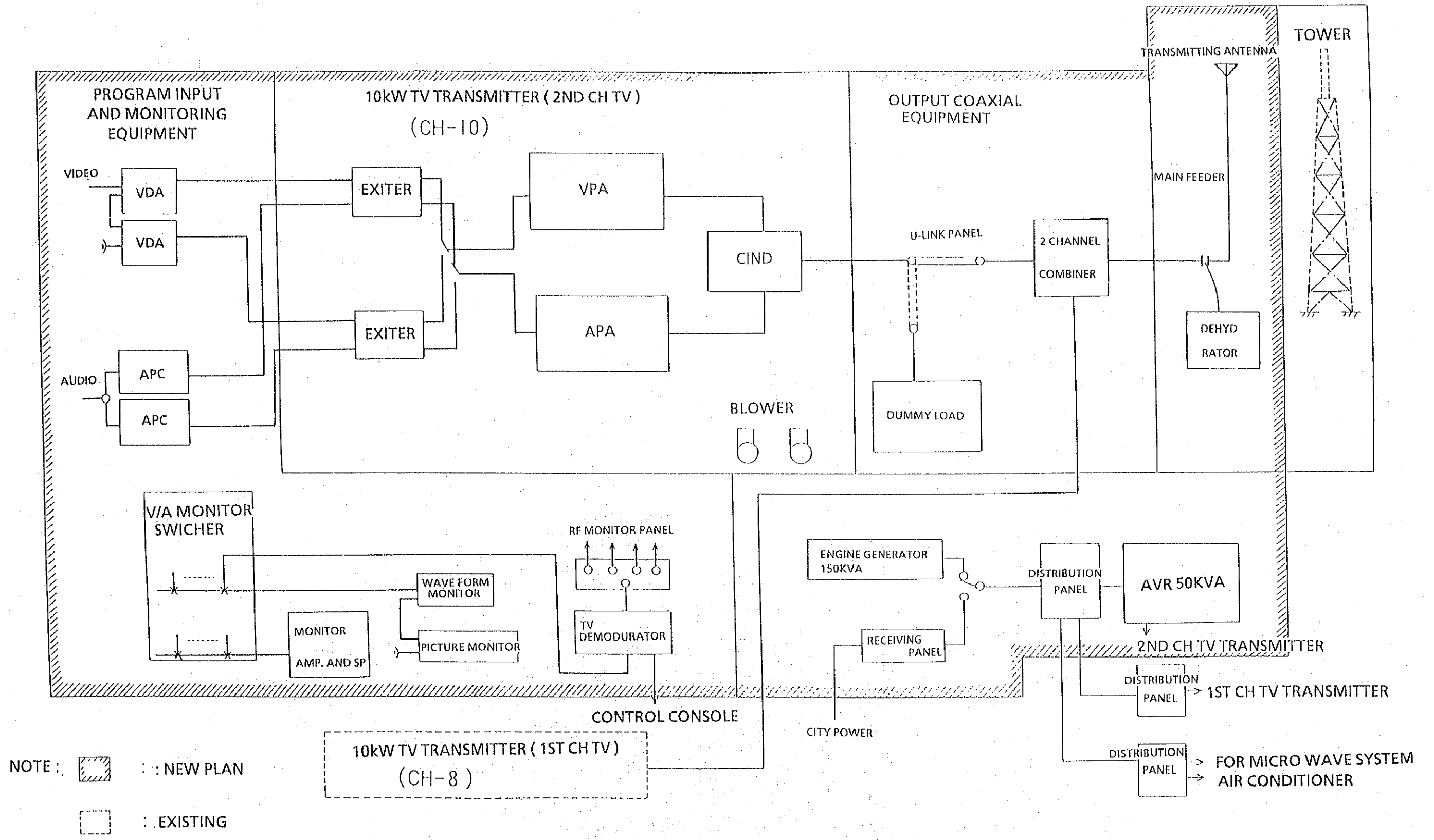
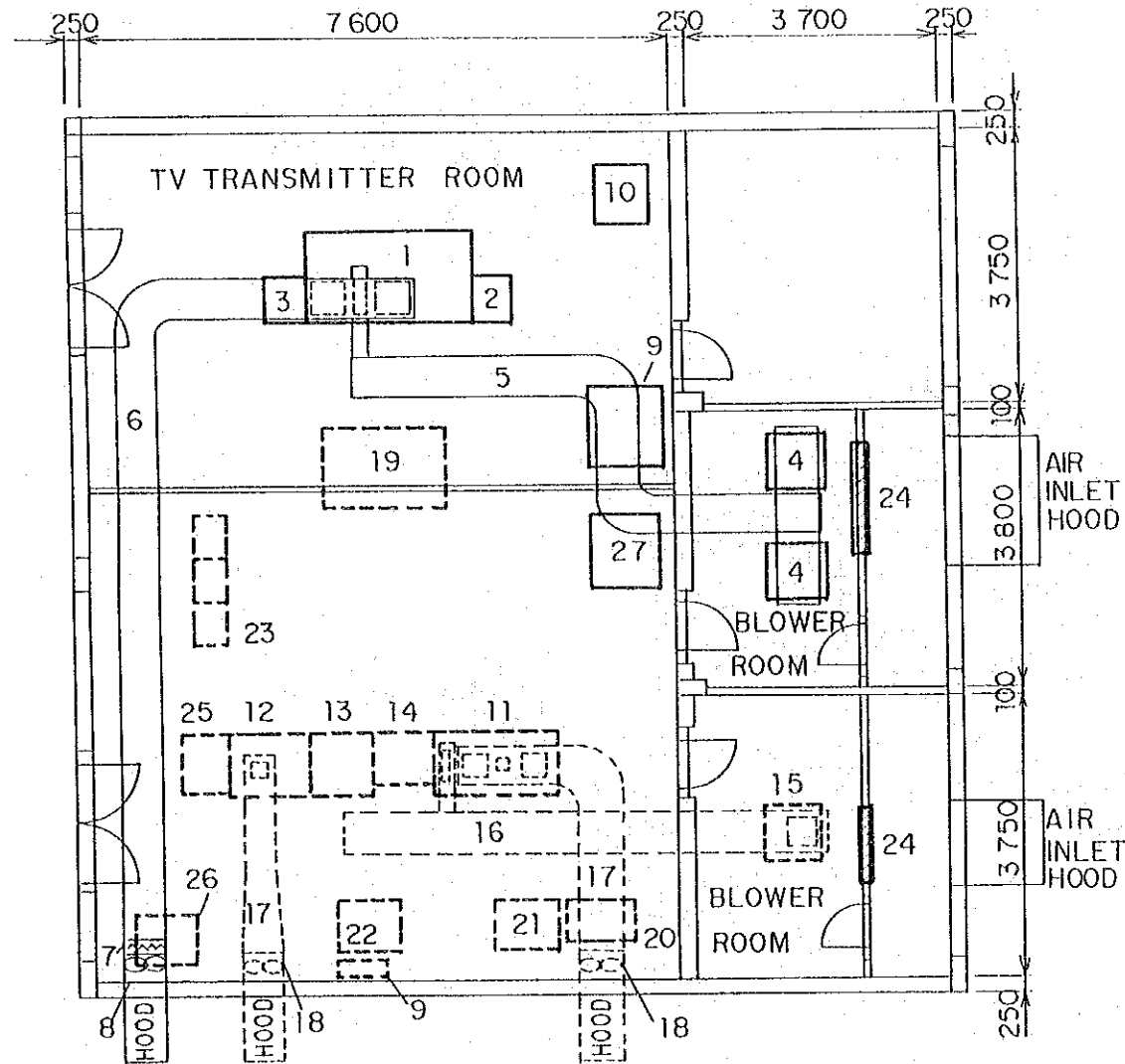


Fig. 4-3-15 SEQUENCE DIAGRAM OF TRANSMITTING SYSTEM OF TABQUA STATION





1. 10kW TV TX (2ND TV)
2. U-LINK (2ND TV)
3. PROGRAM INPUT AND MONITORING EQUIPMET (2ND TV)
4. COOLING BLOWER (2ND TV)
5. INLET AIR DUCT (2ND TV)
6. EXHAUST AIR DUCT (2ND TV)
7. CANVS DUCT (2ND TV)
8. EXHAUST FAN (2ND TV)
9. AVR & PDB (2ND TV)
10. DUMMY LOAD 10kW (2ND TV)
11. 10kW TV TRANSMITTER (1ST TV)
12. 1kW TV TRANSMITTER (1ST TV)
13. CIND (1ST TV)
14. OUTPUT COAXIAL EQUIPMENT (1ST TV)
15. COOLING BLOWER (1ST TV)
16. INLET AIR DUCT (1ST TV)
17. EXHAUST AIR DUCT (1ST TV)
18. EXHAUST FAN (1ST TV)
19. CONTROL CONSOLE (1ST TV)
20. HT TRANSFORMER (1ST TV)
21. AIR CONDITIONER
22. DUMMY LOAD 10kW (1ST TV)
23. PROGRAM INPUT AND MONITORING EQUIPMENT (1ST TV)
24. AIR FILTER FRAME
25. 1kW TV TRANSMITTER (1ST TV)
26. DISTRIBUTION PANEL
27. 2 CHANNEL COMBINER

NOTE:  : NEW PLAN  
 : EXISTING EQUIPMENT

Fig. 4-3-16 FLOOR LAYOUT OF TABQUA STATION

UNIT : mm





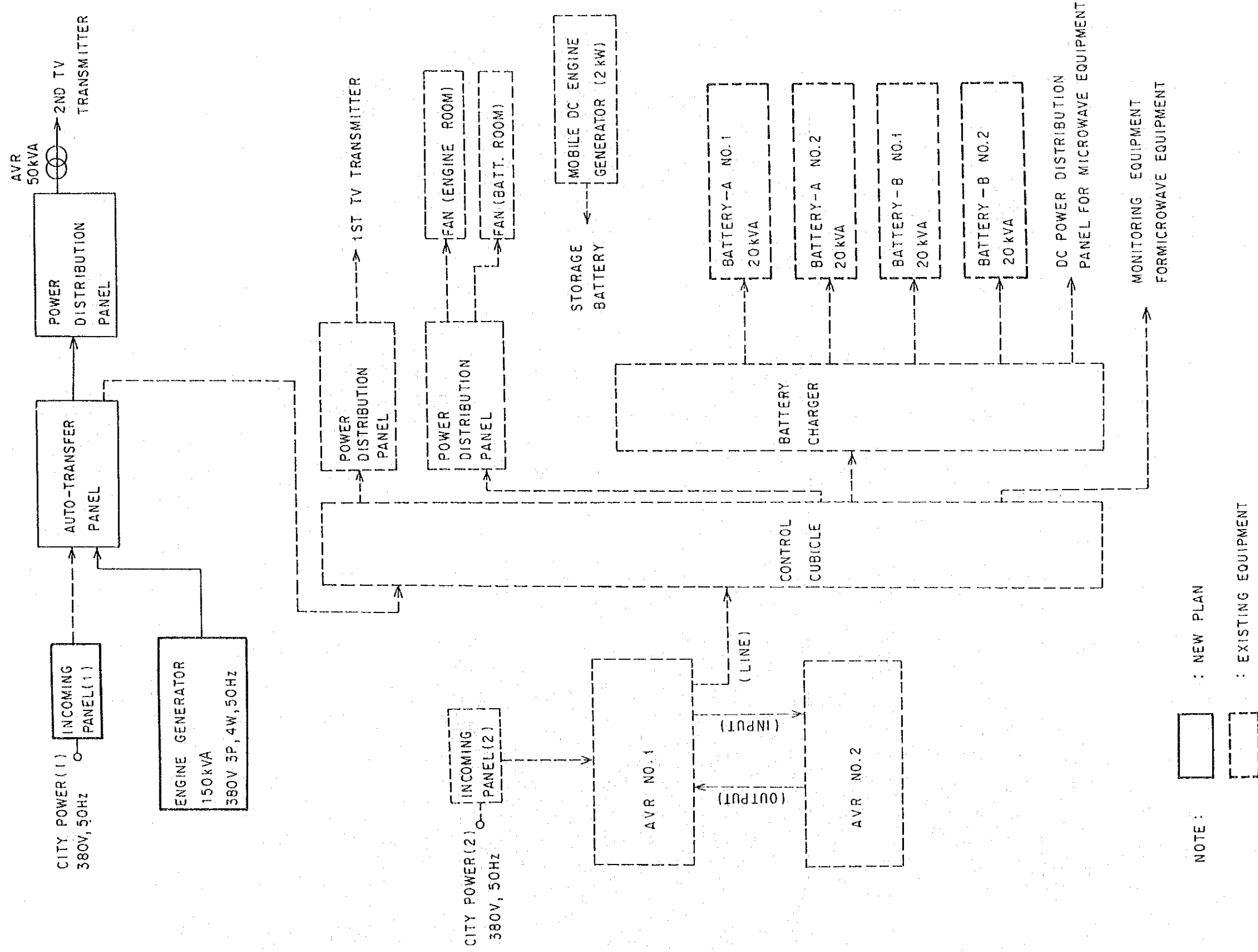


Fig. 4-3-17 SEQUENCE DIAGRAM OF ELECTRICAL INSTALLATION OF TABQA STATION





	RESPONSE OF HORIZONTAL POLARIZATION AND HORIZONTAL RADIATION PATTERN	
--	---	--

GAIN: 9.3 dB

ANTENNA STRUCTURAL:  
4DP: 3. 4. 2. 3

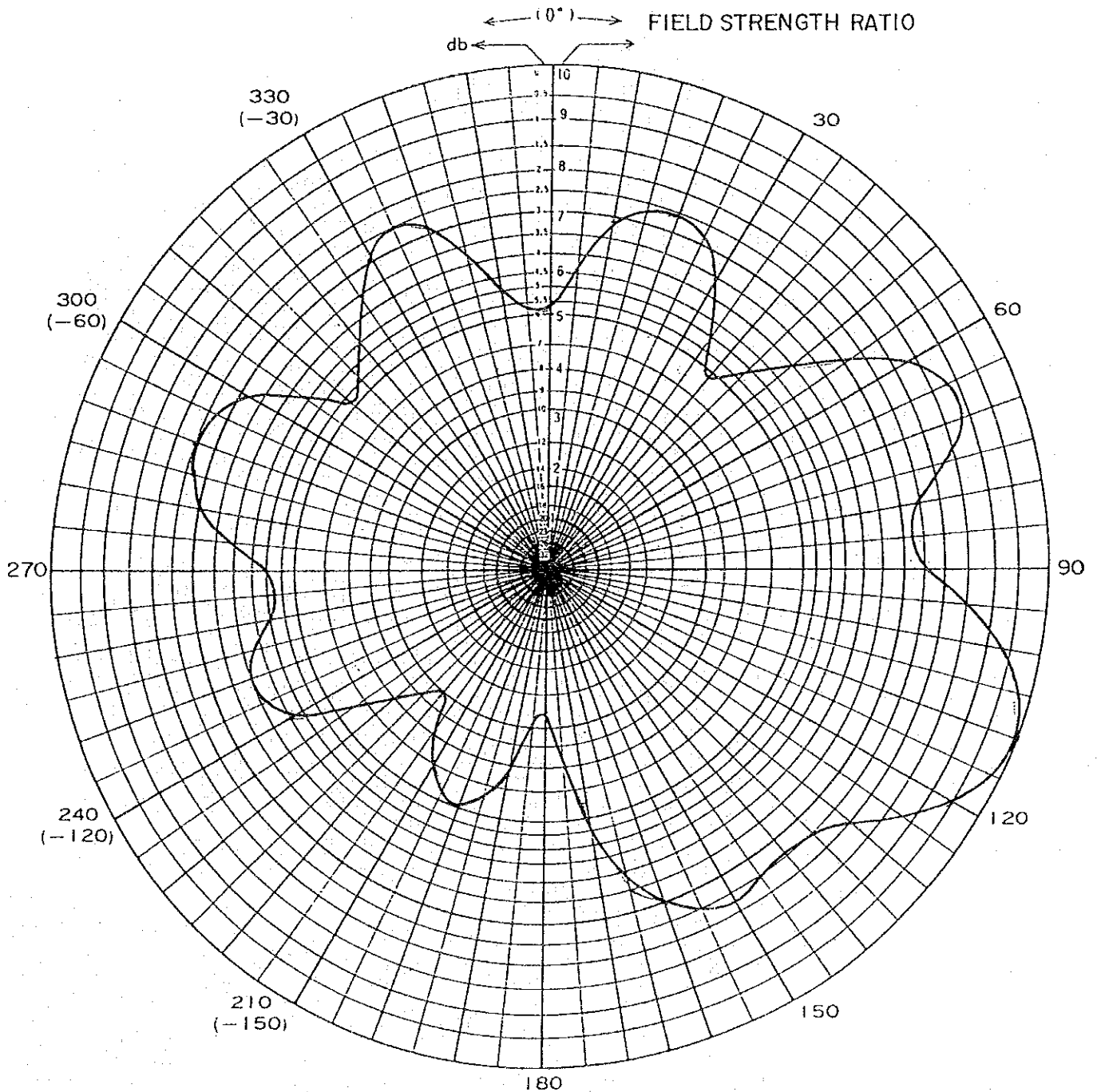


Fig. 4-3-18 TRANSMITTING ANTENNA  
HORIZONTAL RADIATION  
PATTERN OF TABQUA STATION



#### 4-4 Implementation Plan

##### 4-4-1 Implementing Organization

This project will be executed by the BTA (Broadcasting & Television Authority), which is under the jurisdiction of the Ministry of Information of the Syrian Arab Republic.

##### 4-4-2 Implementation Policy

In accordance with the basic policy governing grant aid from the Japanese Government, the Japanese consultant will carry out coordinated construction management work from the planning stages to completion. For implementation of this project, the following implementation policies will be observed:

- (1) To carry out local construction, the consultant will stay on-site and establish a coordinated construction system by maintaining close communication with the BTA and the contractor.
- (2) The installation work and equipment for this project should be suited to the conditions of the existing station buildings, and the obsolete engine generators should be removed by the BTA.
- (3) Appropriate safety measures should be taken to complete the construction safely.
- (4) It is imperative that Syria's laws concerning electricity, construction, and telecommunications be observed. It is also important that local customs and labor conditions be respected.
- (5) Adequate measures should be taken for the safe keeping of materials and equipment.

#### 4-4-3 Supervisory Plan

To carry out this project smoothly and in accordance with the conditions of the Japanese Grant Aid System, the following basic policies should be observed at each stage:

(1) Detailed design stage

\* This project should be arranged with existing facilities.

\* In accordance with the design policy, the project site should be equipped with facilities of the appropriate scale.

(2) Tendering Stage

\* To procure the equipment and services through an open tender in Japan.

\* To make the tender notice in an English newspaper widely circulated in Japan.

(3) Contract

\* To examine carefully statements of items of work, work conditions, etc., in order to ensure there are no mistakes and to report to the Syrian side so that they can make a contract with the selected Japanese Contractor.

(4) Approval of Drawings

\* Checking the system.

\* Determining whether the amount and performance of the equipment meet the specifications.

(5) Factory Inspection

\* Equipment which is not covered by the drawings check should be examined in form as close as possible to that which will be installed on-site. The performance of the equipment and the system should be inspected to see that they meet the specifications.



(6) Supervision at the Site

- \* Safety is the top priority in construction work.
- \* Close communications should be maintained between concerned parties.
- \* Technology transfer to the local staff should be considered.

(7) Acceptance Inspection at Site

- \* The reappearance of factory data should be taken into consideration.

(8) Completion of Work

- \* The sites should be left in a clean and orderly condition with leftover materials properly disposed of.

The equipment procured for this project is to be installed in the New Hassake, the Deir ez Zor and the Tabqua stations. It is therefore necessary to complete the construction in a short period of time. To ensure a smooth and efficient construction process within this limited time, the proper engineers must be dispatched at the appropriate times. Also, the completion of construction in such a short period depends heavily on transportation, as is common in this kind of project. Under these circumstances, it is important to select contractors who have significant experience with similar projects, and to establish a precise construction plan by studying the construction process thoroughly. Additionally, in order to smoothly carry out the construction as a joint project, it is necessary to cooperate closely with the BTA through an adequate exchange of information.

In accordance with the above basic policies and requirements, the consultant should ensure a smooth construction process by providing the necessary personnel and maintaining close communication with the concerned parties in the Syrian Arab Republic and Japan. The consultant should also

take necessary precautions to minimize problems and accidents, and offer adequate and prompt instructions or advice to deal with any problems that occur.

#### 4-4-4 Scope of Work

The table below shows work to be covered by Japanese Grant Aid and that to be undertaken by Syria.

Construction by the BTA must be completed by the time this project begins.

Items	Work Done by the Japanese Side	Work Done by the Syrian Side
(1) The construction of New Hassake Station building; foundation and erection work for the antenna tower	Dispatching construction coordinator and providing material for construction of the tower	<ul style="list-style-type: none"> <li>•Construction itself conducted by BTA.</li> <li>•Construction insurance is provided by Syrian side.</li> </ul>
(2) Modifications of station buildings for the installation of broadcasting equipment	-	Conducted as the need arises
(3) Removal of the engine generators, piping and other things that need to be replaced; construction of an engine bed for the new engine generators	-	Conducted by the BTA
(4) Installation of the city power line	-	
(5) Removal of existing transmission antennas	-	Removed after the completion of construction
(6) Equipment for this project	Manufacture, transportation, installation and adjustment	-
(7) Offices for the construction workers	-	Provided by the BTA

In addition to the above, the following will be carried out by the Syrian side and their cost should be borne by Syria.

- \* To provide data and information necessary for the detailed design.
- \* To obtain all licensing necessary for implementation of the project.
- \* To ensure prompt unloading, tax exemption and customs clearance at ports of disembarkation in Syria of the materials and equipment provided under the Grant.
- \* To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Syria and stay therein for the performance of their work.
- \* To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Syria with respect to the supply of the products and services under the verified contract.
- \* To bear the following commissions to the Japanese foreign exchange bank for banking services based upon the Banking Arrangement (B/A).
  - Advising commission of Authorization to Pay (A/P)
  - Payment commission
- \* To bear all the expenses necessary for implementation of the project other than those to be borne by the Grant.
- \* To maintain and use properly and effectively the educational broadcasting equipment provided under the Grant.

#### 4-4-5 Equipment Procurement Plan

Equipment and construction materials for this project will be procured in Japan. The equipment is to be manufactured, assembled and inspected (factory inspection) in factory, and, if necessary, disassembled for shipment. After it is transported to the sites, installation and adjustment work is to be carried out, as well as any reassembly that may be required.

#### 4-4-6 Implementation Schedule

This project should be completed by taking the following steps:

- ① First, an Exchange of Notes (E/N) is conducted between the Governments of Japan and the Syrian Arab Republic.
- ② Then a consultancy agreement for the implementation of the project will be made between the Government of the Syrian Arab Republic and the Japanese consulting company.
- ③ Subsequently, construction and tender documents are drawn up, and Japanese contractors are invited to tender.
- ④ After evaluation of the tender proposals, a construction contract is signed. At this point, construction can begin.

The project implementation term consists of the first period (three months for designing and eleven months for procurement and construction), and the second period (three months for designing and ten months or procurement and construction).

The implementation schedules are shown in Tables 4-4-1 and 4-4-2.

Table 4-4-1 Implementation Schedule (First Period)

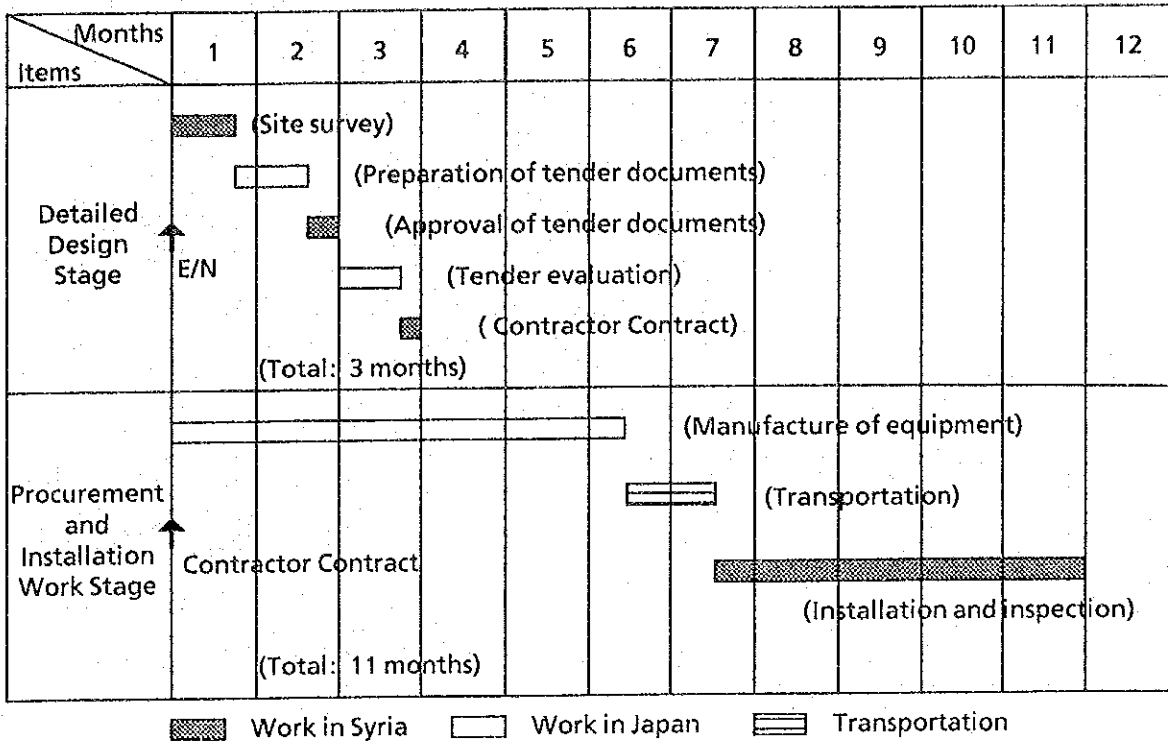
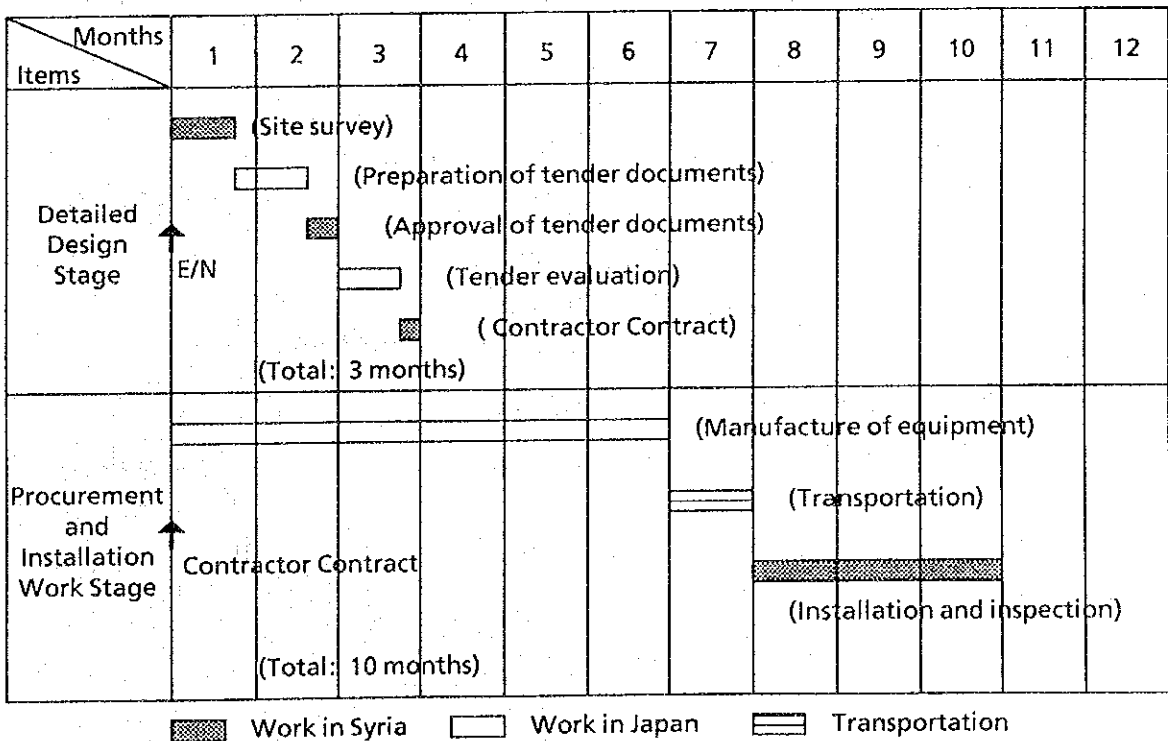


Table 4-4-2 Implementation Schedule (Second Period)



4-4-7 Estimated Cost of the Project

The approximate project cost to be borne by the Syrian side is estimated at about 35 million SP for the first period and 1.6 million SP for the second period as shown below.

(Unit: million Syrian Pounds)

	First Period	Second Period	
	Hassake	Deir ez Zor	Tabqua
Building Construction	20.0	—	—
Antenna Tower Erection Work	1.0	—	—
Antenna Tower Foundation Work	6.0	—	—
Incoming Power Line Installation Work	7.2	—	—
Engine Generator Bed Installation Work	0.8	0.8	0.8
Total	35.0	0.8	0.8

## Chapter 5 Effects of the Project and Conclusion





## Chapter 5 Project Evaluation and Conclusion

### 5-1 Project Evaluation and Conclusion

The following Table 5-1 indicates the current status and problems, and the effects that are expected after this project is implemented.

Table 5-1 Operational Effects of the Three Stations under the Project

Current Status and Problems	Measures Adopted in the Project	Effects and Improvements Expected
<p>(1) The population-coverage ratio of the 1st TV Broadcasting Service is currently 90%, although that of the 2nd TV Broadcasting Service is as low as 60%. As a result, people do not receive a sufficient number of educational programmes.</p> <p>(2) The transmission power of two of the three stations is as low as 1kW, which is insufficient to provide TV programmes to people living in the sparsely inhabited desert area.</p>	<p>The Broadcasting coverage area should be extended by renewing the 2nd TV Broadcasting Service facilities of the three stations located in the northeastern part of the country.</p> <p>(a) Hassake Station: To secure a wide coverage area by installing transmitting facilities at a new site.</p> <p>(b) Deir ez Zor Station: *To increase the power of the transmitter (1kW→10kW) *To renew the transmission antenna (6 panels→14 panels)</p> <p>(c) Tabqua Station: *To renew the transmitter (4kW→10kW) *To renew the transmission antenna (6 panels→12 panels)</p>	<p>(1) Population served by the new broadcasting coverage area will nearly double to about 1,390,000. The population to be covered by each station is as follows.</p> <p>Hassake Station : 290→ 754 Deir ez Zor Station : 164→ 216 Tabqua Station : 243→ 420 Total : 687→1,390</p> <p>The population to be covered by the 2nd TV Broadcasting Service is about 70% of the total population of the country.</p> <p>(2) With the expanded coverage area of the 2nd TV Broadcasting Service, it will become possible to transfer all educational programmes from the 1st TV Broadcasting Service to the 2nd TV Broadcasting Service. The ratio of educational programmes to total programmes may also be increased, thereby enabling the 2nd TV Broadcasting Service to carry out its original goals.</p> <p>(3) With the increased number of broadcasting hours available for educational programmes, more recorded programmes will become available at schools.</p> <p>(4) With the increased coverage area, all residents, whether living in cities, the countryside or in desert areas will have equal opportunity for education.</p>

With the implementation of this project, the viewers covered by these three stations will double to 1,390,000 from the current figure of 687,000.

This significant effect will be the result of increasing the transmission power of the three stations. This effect will further be multiplied by the previously mentioned reform plan on the programme production side.

Therefore, we conclude that it is appropriate to implement this project with grant aid from the Japanese Government.

## 5-2 Recommendations

The Syrians have high expectations for the role of TV. They are especially looking forward to improving the educational environment with it. Broadcasting plays various important roles. For example, it raises overall social awareness and the level of education, it disseminates agricultural know how, and quickly provides disaster information. The Syrian Government has expressly indicated the following as the goals of TV broadcasting.

- (a) Reducing the number of illiterate people
- (b) Elevating the nation's educational and cultural levels
- (c) Providing educational, cultural and wholesome entertainment programmes

The coverage area of the 2nd TV Broadcasting Service will expand in the northeastern region after this project is implemented. The Study Team proposes the following measures to improve educational programmes in general.

- (1) Educational programmes should be transferred from the 1st TV Broadcasting Service to the 2nd TV Broadcasting Service soon.
- (2) The educational programmes ratio within the 2nd TV Broadcasting Service should be increased from 20% to 60% after this transfer, thus establishing the 2nd Broadcasting Network as the station specializing in educational programmes.
- (3) Systems should be established so that educational programmes can be viewed at school. TV broadcasting can provide the same educational programme simultaneously to all schools throughout the country. It will therefore be advantageous to make the most of this by arranging the systems for utilizing recorded educational programmes.

(4) To supplement the functions of the Ministry of Education, EMDPC (Educational Programme Center) and BTA for current educational programme production, an educational programme board, as indicated in Fig. 5-1, should be newly established, and should consist of teacher representatives and programme lecturers in addition to members of the above three organizations. The following new merits are expected.

(a) Programmes will be produced after decisions are made about types, purposes, and the broadcasting hours most suitable for programmes aimed at school children. This system is expected to improve the quality of educational programmes.

(b) With the participation of teacher representatives and programme lecturers, the opinions of those who are actually involving in school work will be directly reflected in efforts to improve the content of educational programmes.

(c) This system will integrate the activities of three bodies, the Ministry of Education, EMDPC and BTA, in programme production, and is expected to upgrade the people's educational level within a short period of time.

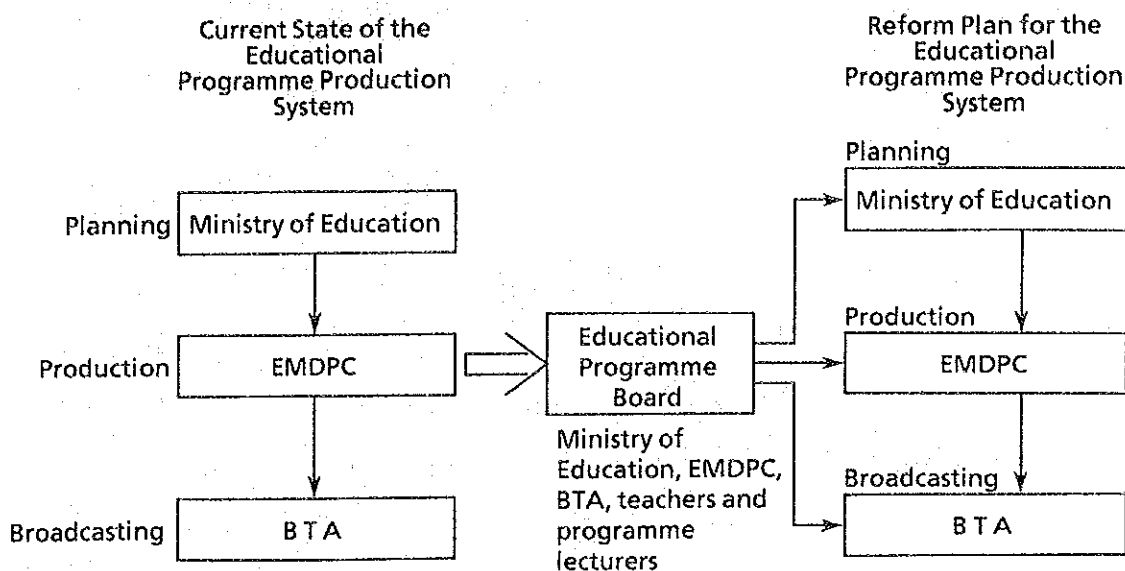


Fig. 5-1 A Reform Plan of the Educational Programme Production System

There are three educational programme categories: the first is programmes produced by EMDPC for schools and students at home, the second is programmes for disseminating practical know-how such as agricultural know-how, and the third is the educational programmes for the illiterate.

To improve all of these programmes, the following measures are imperative.

- 1) Although BTA is constructing a 70m<sup>2</sup> studio, at least one more studio is necessary to provide the desired extended broadcasting hours in the near future.
- 2) Upgrading the production facilities of EMDPC. The current EMDPC plan should be implemented to build a 250m<sup>2</sup> studio for the advancement of educational programme production.

(5) Promotion of Use of TV Receiving Antenna for Lower Channels in VHF

In Syria, the following three television stations are currently broadcasting on the lower channels of VHF.

Hassake	TV1	CH4	10kW
Nabi Saleh	TV1	CH3	10kW
Abu Kamal	TV1	CH3	20kW

In the service areas of these existing stations, as for TV receiving antenna, the signals of these three stations can be received by the existing receiving antennas, however, it is recommended to introduce lower-channel antenna for receiving video signal in good quality. For successful implementation of the proposed broadcasting service from the New Hassake Station, it is necessary to develop suitable transmitting and receiving conditions at the same time.

(6) Regarding TV channel allocation for VHF and UHF bands, it is advisable to negotiate and conclude necessary agreement between the neighboring regions.

In Syria, many TV signals are coming over from neighboring four countries such as Turkey, Iraq, Jordan and Lebanon. Consequently, there are some difficulties in allocating TV channels.

In order to solve the problem, in accordance with the regulations of Article 18 - Interference - (Section II: 1804 and 1807) in the "Radio Regulations" of ITU (International Telecommunication Union), suitable transmitting facilities designed for the limitation of radiation power toward unnecessary directions, and for minimized-necessary radiation power toward necessary directions are required.

For every country to obey this general rules mentioned above, it is advisable to conclude regional regulations for the allocation of VHF and UHF TV channels.



## 1. Member List of the Study Team



## 1. Member List of the Study Team

### 1-1 Basic Design Study

Ms. Chiho MURAMATSU	Leader	Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Mr. Toshio TAKAHASHI	Broadcasting Planner	International Cooperation Division, International Affairs Department, Ministry of Post & Telecommunications
Mr. Hideo HIROBA	Project Manager	International Department, NHK Integrated Technology Inc.
Mr. Hiroshi SONODA	Facility Plan	International Department, NHK Integrated Technology Inc.
Mr. Kazuhisa NARITA	Cost Estimation	International Department, NHK Integrated Technology Inc.

### 1-2 Explanation and Discussion on Draft Final Report

Mr. Toshiyuki IWAMA	Leader	2nd Basic Design Study, Grant Aid Division, Japan International Cooperation Agency
Mr. Syuichi IGARASHI	Broadcasting Planner	International Cooperation Division, International Affairs Department, Ministry of Post & Telecommunications
Mr. Hideo HIROBA	Project Manager	International Department, NHK Integrated Technology Inc.
Mr. Hiroshi SONODA	Facility Plan	International Department, NHK Integrated Technology Inc.



## 2. Itinerary of the Study



## 2. Itinerary of the Study

### 2-1 Basic Design Study

No.	Month/ Date	Official Member (Leader)	Official Member	Consultant Members						
1	8/19 (Thu.)			Leave from Tokyo, Arrive at Paris (JL405)						
2	20 (Fri.)			Leave from Paris, Arrive at Damascus (AF8170)						
3	21 (Sat.)			Courtesy call to State Planning Commission (S.P.C) and Ministry of Information. Submitting and explanation of Inception Report and Questionnaire						
4	22 (Sun.)			Damascus → Deir ez Zor, Site survey for Deir ez Zor						
5	23 (Mon.)			Deir ez Zor → New Hassake site, Site survey → Deir ez Zor						
6	24 (Tue.)			Check of Field Strength at Deir ez Zor → Site survey for Deir ez Zor Site → Aleppo						
7	25 (Wed.)			Leave from Sana, Arrive at Damascus (R3382)						
8	26 (Thu.)			Courtesy Call to JICA and Embassy of Japan. Meeting with BTA						
9	27 (Fri.)			Internal Meeting						
10	28 (Sat.)			Meeting with BTA						
11	29 (Sun.)			Internal Meeting						
12	30 (Mon.)			Signing of Minutes of Discussions, Reporting to Embassy of Japan and JICA						
13	31 (Tue.)			Leave from Damascus, Arrive Vienna, transfer to London (OSSR722)						
14	9/1 (Wed.)			Leave from London (JL402)						
15	2 (Thu.)			Arrive at Tokyo						
16	3 (Fri.)			Deir ez Zor → Site Survey for new proposed site → Deir ez Zor						
17	4 (Sat.)			Deir ez Zor → Damascus						
18	5 (Sun.)			• Meeting with BTA, visiting BTA Studio, visiting EMDPC						
19	6 (Mon.)			• Meeting with, visiting Meteorological Dep., Ministry of Defense						
				• Received data from Meteorological Dep., Ministry of Defense						
20	7 (Tue.)			<table border="1"> <tr> <td>Hiroba</td> <td>Sonoda</td> </tr> <tr> <td>• Meeting with BTA</td> <td>Detail Survey BTA, Gathering data for cost estimate</td> </tr> <tr> <td>• Survey of current situation related to Syria (Education System, Mass-Medical, National Development Plan, Manpower Plan, Facility, Budgetary Plan, Maintenance Plan)</td> <td>(Transportation, Labour fee, Materials etc.)</td> </tr> </table>	Hiroba	Sonoda	• Meeting with BTA	Detail Survey BTA, Gathering data for cost estimate	• Survey of current situation related to Syria (Education System, Mass-Medical, National Development Plan, Manpower Plan, Facility, Budgetary Plan, Maintenance Plan)	(Transportation, Labour fee, Materials etc.)
Hiroba	Sonoda									
• Meeting with BTA	Detail Survey BTA, Gathering data for cost estimate									
• Survey of current situation related to Syria (Education System, Mass-Medical, National Development Plan, Manpower Plan, Facility, Budgetary Plan, Maintenance Plan)	(Transportation, Labour fee, Materials etc.)									
21	8 (Wed.)			Same as the above						
22	9 (Thu.)			Same as the above						
23	10 (Fri.)			Reporting to JICA, Leave from Damascus, Arrive at Vienna (OSSR722), transfer to Zurich (OSSR205)						
24	11 (Sat.)			Leave from Zurich (SR168)						
25	12 (Sun.)			Arrive at Tokyo						

○ : Holiday  
August 29 is the Day of Mohammed.

2-2 Explanation and Discussion on Draft Final Report

No.	Month / Date	Activities
1	11/29 (Mon.)	Leaving from Tokyo, Arriving at Frankfurt
2	30 (Tue.)	Leaving from Frankfurt, Arriving at Damascus
3	12/ 1 (Wed.)	Courtesy Call to BTA, Embassy of Japan and JICA. Submitting and explanation of Draft Final Report with Ministry of Information and BTA
4	2 (Thu.)	Explanation and meeting of Draft Final Report with Ministry of Information and BTA
5	3 (Fri.)	Inner Meeting
6	4 (Sat.)	Explanation and meeting of Draft Final Report with Ministry of Information and BTA
7	5 (Sun.)	Meeting on Draft Minutes of Discussions with BTA. Coutesy Call to S.P.C. by Official Member.
8	6 (Mon.)	Signing of Minutes of Discussions, Reporting to Embassy of Japan and JICA
9	7 (Tue.)	Leaving from Damascus, Arriving at Vienna, transfer to London
10	8 (Wed.)	Leaving from London
11	9 (Thu.)	Arriving at Tokyo

### 3. List of Interviewees





### 3. List of Interviewees

- State Planning Commission (S. P. C.)

Deputy Minister	Dr. Toufik Ismail
Director of Technical and Scientific Relations	Mr. Bassam al Sibaie
In Charge of Japan, Technical and Scientific Relations	Ms. Elham Morad

- Ministry of Information

Minister	Dr. Mohamed Salman
Deputy Minister	Dr. Bara Michel

- BTA

General Director	Mr. Abdul Nabi Hijazi
Director of Engineering	Mr. Adnan Masri
Director of Finance & Administration	Mr. Burhan Samaan
Director of Public Relations	Dr. Haidar Yazji
	Mr. Muhmoud Chaabn
Director of Studio	Mr. Maan Haidar
Director of Study	Mr. Khalil Salti
Engineer of Transmitter	Mr. Adnan Qudaimy
Director of Deir ez Zor for Radio & TV (Director of Deir ez Zor TV Station)	Mr. Hussain Darfil
Director of Hassake for Radio & TV	Mr. Began Tabou
Director of Hassake TV Station	Ms. Yeleona Tabou
Director of Tabqua for Radio & TV	Mr. N. Shahrstan

- Director of  
South Region for Radio & TV  
(Director of Damascus TV Station) Mr. Fayz Mush Mush
- Educational Media Development Production Center (EMDPC)  
Manager of Teaching Technologies Mr. Waleed Helmy
  - Gassan Abuds Secondary School in Damascus  
Director of Gassan Abuds Secondary School Ms. Hana al Hamwy
  - Meteorological Department, Ministry of Defense  
Director of Climate Department Mr. Nafi Shalabi  
Mr. Imad Khalil
  - Hassake Regional Office  
Regional Governor Mr. Moustfa Miro
  - Embassy of Japan  
Ambassador Mr. Minoru KUBOTA  
Councilor Mr. Takenori YAMAZAKI  
First Secretary Mr. Masanori YAGI  
Attache Mr. Kazuhiko KAMATA
  - Japan International Cooperation Agency (JICA)  
Resident Representative Mr. Takeshi KOMORI  
Mr. Izumi TANAKA

#### 4. Minutes of Discussions



#### 4. Minutes of Discussions (1)

MINUTES OF DISCUSSIONS  
BASIC DESIGN STUDY  
ON  
THE PROJECT  
FOR  
THE REINFORCEMENT OF EDUCATIONAL BROADCASTING  
IN  
SYRIAN ARAB REPUBLIC

In response to a request from the Government of Syrian Arab Republic, the Government of Japan decided to conduct a Basic Design Study on the Project for the Reinforcement of Educational Broadcasting in Syria ( hereinafter referred to as "the Project" ) and entrusted the study to the Japan International Cooperation Agency ( JICA ).

JICA sent to Syria a study team, which is headed by Ms. Chiho MURAMATSU, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs and is scheduled to stay in the country from August 20 to September 10, 1993.

The Team held discussions with the officials concerned of the Government of Syrian Arab Republic and conducted a site survey at the study area.

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

Damascus, August 30, 1993



Chiho MURAMATSU  
Leader,  
Basic Design Study Team,  
J I C A



Abdul-Nabi Hijazi  
General Director,  
Broadcasting and Television  
Authority

## ATTACHMENT

### 1. Objective

The objective of the Project is to improve and expand the service area through the reinforcement of the Transmitters with associated equipment at Tabqua, Deir ez Zor and Hassake Transmitting Stations. This Project may enhance the quality of school education by broadcasting purely educational programs to each school through the 2nd channel TV network.

### 2. Project Sites

The Project sites are the following three districts: Tabqua, Deir ez Zor and Hassake / Mt. Abd al Aziz

### 3. Responsible Ministry

Ministry of Information

### 4. Executing Agency

The Broadcasting & Television Authority ( BTA )

### 5. Items Requested by the Government of Syrian Arab Republic.

After discussions with the Basic Design Study Team, the following items were finally requested by the Syrian side.

#### 1) Tabqua station

TV transmitter facilities with engine generator.

#### 2) Deir ez Zor station

TV transmitter facilities with engine generator.

#### 3) Hassake station

##### a) Plan 1 ( New Hassake station )

Antenna Tower materials ( except foundation work and erection work ) and TV transmitter facilities with engine generator.

##### b) Alternative Plan ( Hassake station )

TV transmitter facilities with engine generator.

Requested detailed items are shown at ANNEX 1.

However, the final components of the Project will be decided after further studies.

### 6. Japan's Grant Aid System

(1) The Government of Syrian Arab Republic has understood the system of Japanese Grant Aid explained by the Team.

(2) The Government of Syrian Arab Republic will take the necessary measures, described in ANNEX 2 for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

7. Schedule of the Study

- (1) The consultants will proceed to further studies in Syria until 9 September 1993.
- (2) JICA will prepare the draft final report in English and dispatch a mission in order to explain its contents around November 1993.
- (3) In case that the contents of the report are accepted in principle by the Government of Syrian Arab Republic, JICA will complete the final report and send it to the Government of Syrian Arab Republic by February 1994.

Requested items from Syrian side

ANNEX 1 (1/5)

ITEM	DESCRIPTION	Q'TY	UNIT
I	TABQUA STATION		
	1. 20KW VHF Solid-State TV Transmitter with Dual Exciters	1	set
	2. Output Coaxial Equipment	1	set
	2' Channel Combiner		
	3. Programme Input and Monitoring Equipment	1	set
	4. Antenna System	1	set
	5. Engine Generator System(200KVA), Daily fuel tank, AVR and withstand lightning transformer	1	set
	6. Spare Parts and Modules	1	set
	7. Test Equipment for Routine Maintenance	1	set
	1) Circuit Tester	1	set
	2) RF Pushbutton Attenuator	1	set
	3) Oscilloscope	1	set
	8. Installation Materials	1	set



Requested items from Syrian side

ANNEX 1 (2/5)

ITEM	DESCRIPTION	Q'TY	UNIT
II	DEIR EZ ZOR STATION		
1.	20kW VHF Solid-State TV Transmitter with Dual Exciters	1	set
2.	Output Coaxial Equipment	1	set
3.	Programme Input and Monitoring Equipment	1	set
4.	Antenna System for ETV	1	set
5.	Engine Generator System(200KVA), Daily fuel tank, AVR and withstand lightning transformer	1	set
6.	Spare Parts and Modules	1	set
7.	Test Equipment for Routine Maintenance	1	set
1)	Circuit Tester	1	set
2)	RF Pushbutton Attenuator	1	set
3)	Oscilloscope	1	set
8.	Installation Materials	1	set

Requested items from Syrian side

ANNEX 1 (3/5)

ITEM	DESCRIPTION	Q'TY	UNIT
III	HASSAKE STATION		
III-1	NEW HASSAKE STATION (Plan 1)		
1.	20KW VHF Solid-State TV Transmitter with Dual Exciters	1	set
2.	Output Coaxial Equipment	1	set
3.	Programme Input and Monitoring Equipment	1	set
4.	Microwave Link(Normal and stanby link, communication system)	1	set
5.	Antenna System for ETV	1	set
6.	Guyed Wire Antenna Tower (200m), (foundation and erection work by Syria side)	1	set
7.	Engine Generator System(200KVA), Daily fuel tank, AVR and withstand lightning transformer	2	sets
7'	Incoming Power facilities	1	set
8.	Spare Parts and Modules	1	set
9.	Test Equipment for Routine Maintenance	1	set
1)	Circuit Tester	1	set
2)	RF Pushbutton Attenuator	1	set
3)	Oscilloscope	1	set
10.	Installation Materials	1	set

Requested items from Syrian side

ANNEX 1 (4/5)

ITEM	DESCRIPTION	Q'TY	UNIT
III-2 HASSAKE STATION ( Alternative Plan )			
1.	20kW VHF Solid-State TV Transmitter with Dual Exciters	1	set
2.	Output Coaxial Equipment	1	set
3.	Programme Input and Monitoring Equipment	1	set
4.	Antenna System for ETV	1	set
5.	Engine Generator System(200KVA), Daily fuel tank, AVR and withstand lightning transformer	1	set
6.	Spare Parts and Modules	1	set
7.	Test Equipment for Routine Maintenance	1	set
	1) Circuit Tester	1	set
	2) RF Pushbutton Attenuator	1	set
	3) Oscilloscope	1	set
8.	Installation Materials	1	set

2

*M*

Requested items from Syrian side

ANNEX 1 (5/5)

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>Q'TY</u>	<u>UNIT</u>
IV COMMON TEST EQUIPMENT FOR PERIODICAL MAINTENANCE			
1.	Spectrum Analyzer ( with tracking analyzer unit )	1	set
2.	Envelope Delay Measuring Equipment	1	set
3.	VSWR Meter	1	set
4.	Field Strength Meter	1	set
5.	RF Network Analyzer with X-Y Plotter	1	set

ANNEX 2

Necessary measures to be taken by the Government of Syrian Arab Republic in case Japan's Grant Aid is executed.

1. To submit data & information required for detailed design.
2. To provide the following facilities etc. required for implementing the Project at the sites;
  - \* the sufficient installation space
  - \* the city electric power for the proposed equipment
  - \* common use for the existing Antenna tower
  - \* programme transmission line except New Hassake Station
  - \* construction of Antenna Tower for the New Hassake Station in the case of Plan I prior to the commencement of equipment installation
3. To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon B/A (Banking Arrangement).
  - (a) Advising commission of Authorization to Pay (A/P)
  - (b) Payment commission (0.1% of the total Project amount)
4. To ensure prompt unloading and customs clearance at ports of disembarkation in Syria and internal transportation therein of the products purchased under the Grant.
5. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Syria and stay therein for the performance of their work.
6. To maintain and use properly and effectively the facilities provided under the Grant.
7. To bear all the expenses other than those to be borne by the Grant, necessary for execution of the Project.



Minutes of Discussions (2)

MINUTES OF DISCUSSIONS  
BASIC DESIGN STUDY  
ON  
THE PROJECT  
FOR  
THE REINFORCEMENT OF EDUCATIONAL BROADCASTING  
IN  
SYRIAN ARAB REPUBLIC  
(CONSULTATION ON DRAFT REPORT)

In August 1993, the Japan International Cooperation Agency(JICA) dispatched a Basic Design Study team on the Project for the Reinforcement of Educational Broadcasting (hereinafter referred to as "the Project") to Syrian Arab Republic, and through discussions, field survey and technical examination of the results in Japan, has prepared the draft report of the study.

In order to explain and to consult Syrian Arab Republic on the components of the draft report, JICA sent to Syrian Arab Republic a study team which is headed by Mr.Toshiyuki IWAMA, Grant Aid Study & Design Department, JICA, and is scheduled to stay in the country from November 30 to December 7, 1993.

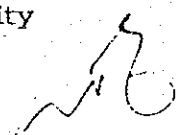
As a result of discussions, both parties confirmed the main items described on the attached sheets.

Damascus, December 6, 1993

岩間敏之

Toshiyuki IWAMA  
Leader,  
Draft Report Explanation Team,  
J I C A

Abdul-Nabi Hijazi  
General Director,  
Broadcasting and Television  
Authority



## ATTACHMENT

### 1. Components of the draft report

The Government of Syrian Arab Republic has agreed and accepted in principle the components of the draft report proposed by the Team. However, after discussions the following changes were agreed by both sides: The antenna configuration will be changed to 4-3-3-4 for New Hassake station, 4-4-2-4 for Deir ez Zor station and 3-4-2-3 for Tabqua station in order to achieve a good receiving condition. The revised equipment list is attached in Annex 2.

The Japanese side assured that the internal transportation of the equipment will be covered by the Grant.

The designing drawing for tower foundation will be provided by the Japanese side whereas the soil data will be provided by the Syrian side.

### 2. Japan's Grant Aid system

(1) The Government of Syrian Arab Republic has understood the system of Japanese Grant Aid explained by the Team.

(2) The Government of Syrian Arab Republic will take the necessary measures, described in Annex 1, for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

### 3. Further schedule

The Team will make the final report in accordance with the confirmed items, and send it to the Government of Syrian Arab Republic by the end of February, 1994.

### 4. Technical cooperation

The Syrian side pointed out the need for dispatch of Japanese experts as well as technical training of counterpart personnel in Japan. They also understood that technical cooperation cannot be requested in the Grant Aid system and that another official request should be submitted through diplomatic channel.

4/10

5

## ANNEX 1

Necessary measures to be taken by the Government of Syrian Arab Republic in case Japan's Grant Aid is extended.

1. To provide the following facilities by the end of August, 1994. Those works should be terminated by the commencement of installation of the project equipment(New Hassake station).
  - (1) Provision of site(at least 300m x 300m)
  - (2) Leveling of site so as to install the antenna tower
  - (3) Construction of access road
  - (4) Earthing for the equipment in each technical room
  - (5) Construction of station building under the following conditions:
    - (a) Minimum load-proof of floor at transmitter room shall be 1 ton/m<sup>2</sup>
    - (b) Flooring up to 100mm depth shall be made with concrete cement without gravel and cobblestone
  - (6) Manufacturing of air-duct specified for TV transmitter
  - (7) Construction of engine bed, oil fence for daily fuel tank and wiring floor duct
  - (8) City power line to the site and indoor distribution
  - (9) Water supply system in the site and indoor distribution
  - (10) Mobile telephone system for the site
  - (11) Air conditioner with enough capacity to transmitter room and others where the equipment is installed
  - (12) Official permission for tower construction, if any
2. To construct the base and to erect the new antenna tower by the end of November, 1994(New Hassake station).
3. To bear the erection insurance of tower construction (New Hassake station).
4. To secure an undisturbed use of CH2 for New Hassake station.
5. To terminate the following works before the commencement of second period of the project(Deir ez Zor station and Tabqua station).
  - (1) Withdrawing of old engine generator of 70kVA and engine bed.
  - (2) Manufacturing of air-duct specified for TV transmitter.
  - (3) Construction of new engine bed and oil fence for daily fuel tank.
6. To prepare data and information necessary for the detailed design.
7. To ensure prompt unloading, to exempt taxes and to take necessary measures for customs clearance, at ports of disembarkation in Syria and internal transportation therein of the materials and equipment provided under the Grant.

U<sub>1</sub>  
1-2

2



8. To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon B/A (Banking Arrangement).
  - (a) Advising commission of Authorization to Pay ( A/P )
  - (b) Payment commission (about 0.1% of the total Project amount)
9. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Syria and stay therein for the performance of their work.
10. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Syria with respect to the supply of the products and services under the verified contract.
11. To maintain and use properly and effectively the facilities provided under the Grant.
12. To bear all the expenses other than those to be borne by the Grant necessary for the implementation of the Project.

1/2

2

## Equipment list

ITEM	DESCRIPTION	Q'TY	UNIT
I.	New Hassake station		
1.	20kW VHF Solid-state TV Transmitter with Dual Exciters	1	set
2.	Output Coaxial Equipment	1	
3.	Programme Input and Monitoring Equipment		
4.	Microwave Link (Normal and standby link with 1 channel operation) and VHF communication system	1	
5.	Antenna System for wide band (CH2 and CH4) 2D Antenna, 4-3-3-4	1	
6.	Guyed Wire Antenna Tower(198m), according to RS-222C standard with minimum wind velocity of 45m/s(foundation and erection work by Syrian side)	1	
7.	Engine Generator System	1	
1)	Engine Generator System (200kVA) with Daily fuel tank	1	
2)	Engine Genarator System (150kVA), mobile type for common use	1	
3)	Incoming Power Facilities, AVR(90kVA)	1	
8.	Spare Parts and Modules	1	
9.	Test Equipment for Routine Maintenance	1	
1)	Oscilloscope	1	
2)	RF Pushbutton Attenuator	1	
3)	Circuit Tester	1	
4)	TV Test Signal Generator	1	
10.	Common Test Equipment for Periodical Maintenance (for three stations)	1	
1)	Spectrum analyzer with Tracking Generator	1	
2)	Directional Bridge	1	
3)	Field Strength Meter	1	
4)	Video Envelop Delay Time Measuring instrument	1	
11.	Installation Materials	1	

## Equipment list

ITEM	DESCRIPTION	Q'TY	UNIT
II.	Deire ez Zor station		
1.	10kW VHF Solid-state TV Transmitter with Dual Exciters	1	set
2.	Output Coaxial Equipment	1	
3.	Program Input and Monitoring Equipment	1	
4.	Antenna System for CH11, 4D antenna 4-4-2-4	1	
5.	Engine Generator System	1	
1)	Engine Generator System (150kVA) with Daily fuel tank	1	
2)	Power receiving/distribution board with AVR(50kVA)	1	
6.	Spare Parts and Modules	1	
7.	Test Equipment for Routine Maintenance	1	
1)	Oscilloscope	1	
2)	RF Pushbutton Attenuator	1	
3)	Circuit Tester	1	
4)	TV Test Signal Generator	1	
8.	Installation Materials	1	

(4/10)

70

## Equipment list

ITEM	DESCRIPTION	Q'TY	UNIT
III. Tabqua Station			
1.	10kW VHF Solid-state TV Transmitter with Dual Exciters	1	set
2.	Output Coaxial Equipment	1	
3.	Channel Combiner	1	
4.	Program Input and Monitoring Equipment	1	
5.	Antenna System for wide band(CH 8 and CH 10) 4D Antenna, 3-4-2-3	1	
6.	Engine Generator System	1	
1)	Engine Generator System (150kVA) with Daily fuel tank	1	
2)	Power receiving/distribution board with AVR(50kVA)	1	
7.	Spare Parts and Modules	1	
8.	Test Equipment for Routine Maintenance	1	
1)	Oscilloscope	1	
2)	RF Pushbutton Attenuator	1	
3)	Circuit Tester	1	
4)	TV Test Signal Generator	1	
8.	Installation Materials	1	

④  
10

2

## 5. List of Collected Materials



5. List of Collected Materials

(1) Answers to Questionnaire

(2) Table of Result of Site Survey

(3) Organizational Chart of BTA

(4) List of Transmitting Stations (including staff numbers)

(5) Statistical Abstract of 1992

(6) Organizational Chart of Ministry of Education

(7) Meteorological Data for Each Site

(8) Topographical Map (1/500,000 1/200,000)





## 6. List of TV Studio Equipment in Damascus TV Station



6. List of TV Studio Equipment in Damascus TV Station

Studio Name	Description	
Studio No.1	250m <sup>2</sup> Video Mixer Audio Mixer Lighting Control	Input 32 24 CH 90 CH
Studio No.2	380m <sup>2</sup> Video Mixer Audio Mixer Lighting Control	Input 32 24 CH 120 CH
Studio No.3	70m <sup>2</sup> Video Mixer Audio Mixer Lighting Control	For Second TV Service Input 32 24 CH 24 CH
Studio No.4	100m <sup>2</sup> Video Mixer Audio Mixer Lighting Control	Input 24 24 CH 60 CH

OB Van

Type		Maker	Description
No.1	OB Van (Big)	BOSCH (BTS)	Studio Camera 3 sets EFP Camera 1 set
No.2	OB Van (Small)	BOSCH (BTS)	EFP Camera 3 sets
No.3	OB Van (Big)	NEC	Studio Camera 6 sets
No.4	OB Van (Big)	NEC	Studio Camera 5 sets
No.5	OB Van (Small)	NEC	Studio Camera 3 sets
No.6	OB Van (Small)	NEC	Studio Camera 3 sets
FPU		NEC	8 sets



**7. Table of European TV Channel "E"**



## 7. Table of European TV Channel "E"

VHF Low channel : CH2 ~ 4

VHF High channel : CH5 ~ 12

### VHF

CH	fv frequency (MHz)	CH	fv frequency (MHz)	CH	fv frequency (MHz)
2	48.25	5	175.25	9	203.25
2A	49.75	6	182.25	10	210.25
3	55.25	7	189.25	11	217.25
4	62.25	8	196.25	12	224.25

### UHF

CH	fv frequency (MHz)	CH	fv frequency (MHz)	CH	fv frequency (MHz)
21	471.25	38	607.25	54	735.25
22	479.25	39	615.25	55	743.25
23	487.25	40	623.25	56	751.25
24	495.25	41	631.25	57	759.25
25	503.25	42	639.25	58	767.25
26	511.25	43	647.25	59	775.25
27	519.25	44	655.25	60	783.25
28	527.25	45	663.25	61	791.25
29	535.25	46	671.25	62	799.25
30	543.25	47	679.25	63	807.25
31	551.25	48	687.25	64	815.25
32	559.25	49	695.25	65	823.25
33	567.25	50	703.25	66	831.25
34	575.25	51	711.25	67	839.25
35	583.25	52	719.25	68	847.25
36	591.25	53	727.25	69	855.25
37	599.25				





## 8. Reference Data



## 8. Reference Data

Table 8-1 Fuel Fee for One Year of Each Engine Generator

Type of Engine Generator	Fuel consumption per 1 hour	Fuel consumption for 1 day	Fuel consumption per 1 year	Fuel consumption fee per 1 year
70 kVA	30 ℓ	120 ℓ	43,800 ℓ	394,200SP
100 kVA	33 ℓ	132 ℓ	48,160 ℓ	433,620SP
150 kVA	45 ℓ	180 ℓ	65,700 ℓ	591,300SP
200 kVA	57 ℓ	228 ℓ	83,220 ℓ	748,800SP

Fuel fee: Calculated from 9 SP/ℓ

Table 8-2 Electric Power Fee

Output Power of TV Transmitter	Input Power at Ave. Modulation (kW)	Operating Electric Power for 8 hours/day (kWh)	Operating Electric Power for 1 year (kWh)	Operating Electric Power fee for 1 year (SP)
1 kW	2.1	17.3	6,300	12,600
10 kW	18.5	147.6	53,880	107,760
20 kW	38.0	304.8	111,250	222,500

Electric Power fee: Calculated from 2 SP/200 kWh

Table 8-3 Minimum Wage for Engineer, etc.

Unit: SP

Item	1 hour	1 day (6 hours)	1 month
Electronic Engineer	30	150	4,000
Electronic Assistant Engineer	28	140	3,200
Electrician	28	140	3,200
Assistant Electrician	28	140	3,000



## **9. Routine Engine Generator Maintenance**



## 9. Routine Engine Generator Maintenance

Table 9 Routine Engine Generator Maintenance

Kind of Maintenance	Period of Maintenance	Main Items for Maintenance	Remarks
Daily Maintenance	Daily or Weekly	(a) Monitoring and recording of operation status (b) Supply water and oil and cleaning of filter	Maintenance in operation
Maintenance A	Monthly	(a) Measuring of main point pressure and temperature, and function check (b) Check of main point vibration and leakage	Maintenance in operation
Maintenance B (order to maker)	1,000~ 2,000 hours	(a) Repair of fuel valve, exhaust valve and starter valve (b) Visual check for other equipment	including Maintenance A
Maintenance C (order to maker)	3,000~ 4,000 hours	(a) Repair of air intake valve, cylinder head, supercharger, air cooling (b) Visual check of clutch, reversing gear, reduction gear	including Maintenance A and B
Maintenance D (order to maker)	7,000~ 8,000 hours	(a) Repair of piston, metal, liner, jacket, attachment parts and RC (b) Check of clutch, reversing gear, reduction gear and coupling	(a) Corresponding to intermediate inspection for marine engines (b) including Maintenance A, B and C
Maintenance E (order to maker)	14,000~ 15,000 hours	(a) Check of piston cooling, each gear and supercharger casing (b) Release check of generator and clutch (c) Exchange of clunk bolt (20,000 hours)	(a) Corresponding to routine inspection for marine engines (b) including Maintenance A, B and C





## 10. School Subjects



## 10. School Subjects

Table 10-1 School Subjects (Secondary School)

No.	First stage	Third stage
1	Religion	Religion
2	Arabic language	Arabic language
3	Foreign language	Foreign language
4	History	The Arabian political society
5	Society	Mathematics
6	Geography	Physics
7	Mathematics	Chemistry
8	Physics	Natural science
9	Chemistry	Military education
10	Natural science	
11	Art education	
12	Sports education	
13	Military education	
14	National education	

Table 10-2 School Subjects (Preparatory Stage)

1	Religious education	
2	Arabic language	
3	Foreign language	
4	History	
	Geography	
	Nationality	
5	Mathematics	
6	Chemistry	
	Physics	
	Natural science	
7	Art and home education	Knitting
		Drawing and handicrafts
8	Sports and music	
9	Military education	

## 11. Table of Weekly TV Programmes



# 11. Table of Weekly TV Programmes

Table 11-1 1st TV Programmes from 20/11/1993 to 26/11/1993

Time	20-11 SATURDAY	21-11 SUNDAY	22-11 MONDAY	23-11 TUESDAY	24-11 WEDNESDAY	25-11 THURSDAY	26-11-1993 FRIDAY
09:30							Test Transmission
10:00							Quran Religion Talk
11:00							Morning Tour
12:00							Arabic Drama
13:00							Morning Newspaper
14:00		13:30 Test Transmission					Children Programmes
15:00	14:30 Test Transmission	14:01 Quran + Programme Schedule					14:30 Soccer Match on Air
16:00	15:15 Educational Programme	14:15 Sport Stations					15:00 Quran + Programme Schedule
17:00		15:00 Educational Programme					15:15 Educational Programme
18:00		15:30 Educational Programme					15:30 Arabic Drama
19:00		16:35 Children Programmes					16:50 Scientific Programme The Miracle Planet
20:00		17:30 Family Programme					17:30 Letter from RAGA
21:00		18:00 Youth Programme					18:00 Teacher's Programme
22:00		18:15 Farmers Programme					18:15 The Economical Programme
23:00		18:30 Students Programme					18:30 Arabic Drama
24:00		18:45 Worker's Programme					19:00 Arabic Drama
25:00		19:00 Youth Programme					19:30 Stations from the World
26:00		19:15 TV Newspaper					20:00 Stations from the World
27:00		19:30 Letter from ALASSY					20:25 Stations from the World
28:00		19:45 Evening Bird					21:00 Stations from the World
29:00		19:55 Health Programme					21:15 Stations from the World
30:00		20:05 Syria Today					21:30 Stations from the World
31:00		20:20 Arabic Drama					21:45 Stations from the World
32:00		20:35 Arabic Drama					22:00 Stations from the World
33:00		20:50 Arabic Drama					22:15 Stations from the World
34:00		21:05 Arabic Drama					22:30 Stations from the World
35:00		21:20 Arabic Drama					22:45 Stations from the World
36:00		21:35 Arabic Drama					23:00 Stations from the World
37:00		21:50 Arabic Drama					23:15 Stations from the World
38:00		22:05 Arabic Drama					23:30 Stations from the World
39:00		22:20 Arabic Drama					23:45 Stations from the World
40:00		22:35 Arabic Drama					24:00 Stations from the World
41:00		22:50 Arabic Drama					24:15 Stations from the World
42:00		23:05 Arabic Drama					24:30 Stations from the World
43:00		23:20 Arabic Drama					24:45 Stations from the World
44:00		23:35 Arabic Drama					25:00 Stations from the World
45:00		23:50 Arabic Drama					25:15 Stations from the World
46:00		24:05 Arabic Drama					25:30 Stations from the World
47:00		24:20 Arabic Drama					25:45 Stations from the World
48:00		24:35 Arabic Drama					26:00 Stations from the World
49:00		24:50 Arabic Drama					26:15 Stations from the World
50:00		25:05 Arabic Drama					26:30 Stations from the World
51:00		25:20 Arabic Drama					26:45 Stations from the World
52:00		25:35 Arabic Drama					27:00 Stations from the World
53:00		25:50 Arabic Drama					27:15 Stations from the World
54:00		26:05 Arabic Drama					27:30 Stations from the World
55:00		26:20 Arabic Drama					27:45 Stations from the World
56:00		26:35 Arabic Drama					28:00 Stations from the World
57:00		26:50 Arabic Drama					28:15 Stations from the World
58:00		27:05 Arabic Drama					28:30 Stations from the World
59:00		27:20 Arabic Drama					28:45 Stations from the World
60:00		27:35 Arabic Drama					29:00 Stations from the World
61:00		27:50 Arabic Drama					29:15 Stations from the World
62:00		28:05 Arabic Drama					29:30 Stations from the World
63:00		28:20 Arabic Drama					29:45 Stations from the World
64:00		28:35 Arabic Drama					30:00 Stations from the World
65:00		28:50 Arabic Drama					30:15 Stations from the World
66:00		29:05 Arabic Drama					30:30 Stations from the World
67:00		29:20 Arabic Drama					30:45 Stations from the World
68:00		29:35 Arabic Drama					31:00 Stations from the World
69:00		29:50 Arabic Drama					31:15 Stations from the World
70:00		30:05 Arabic Drama					31:30 Stations from the World
71:00		30:20 Arabic Drama					31:45 Stations from the World
72:00		30:35 Arabic Drama					32:00 Stations from the World
73:00		30:50 Arabic Drama					32:15 Stations from the World
74:00		31:05 Arabic Drama					32:30 Stations from the World
75:00		31:20 Arabic Drama					32:45 Stations from the World
76:00		31:35 Arabic Drama					33:00 Stations from the World
77:00		31:50 Arabic Drama					33:15 Stations from the World
78:00		32:05 Arabic Drama					33:30 Stations from the World
79:00		32:20 Arabic Drama					33:45 Stations from the World
80:00		32:35 Arabic Drama					34:00 Stations from the World
81:00		32:50 Arabic Drama					34:15 Stations from the World
82:00		33:05 Arabic Drama					34:30 Stations from the World
83:00		33:20 Arabic Drama					34:45 Stations from the World
84:00		33:35 Arabic Drama					35:00 Stations from the World
85:00		33:50 Arabic Drama					35:15 Stations from the World
86:00		34:05 Arabic Drama					35:30 Stations from the World
87:00		34:20 Arabic Drama					35:45 Stations from the World
88:00		34:35 Arabic Drama					36:00 Stations from the World
89:00		34:50 Arabic Drama					36:15 Stations from the World
90:00		35:05 Arabic Drama					36:30 Stations from the World
91:00		35:20 Arabic Drama					36:45 Stations from the World
92:00		35:35 Arabic Drama					37:00 Stations from the World
93:00		35:50 Arabic Drama					37:15 Stations from the World
94:00		36:05 Arabic Drama					37:30 Stations from the World
95:00		36:20 Arabic Drama					37:45 Stations from the World
96:00		36:35 Arabic Drama					38:00 Stations from the World
97:00		36:50 Arabic Drama					38:15 Stations from the World
98:00		37:05 Arabic Drama					38:30 Stations from the World
99:00		37:20 Arabic Drama					38:45 Stations from the World
100:00		37:35 Arabic Drama					39:00 Stations from the World

Table 11-2 2nd TV Programmes

from 1/1/1994 to 1/7/1994

Time	SATURDAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
05:00							Arabic Drama
06:00	English Lessons	Sesame Street	English Lessons	Sesame Street	English Lessons	Sesame Street	Cartoons
	Robin Hood	America	Unforgettable Tales	Birds Everywhere	Nassouh Adventures	The Tenchou Sister	Cir'kissimo
	Animals Nature Book	World of Arts	Healthy life	A Film for Youngsters	The Campells	Towards a World without Drugs	L'echole de Fans
07:00	Sport Magazine	All Creatures Small and Big	Environment		Long Documentary Scientific Culture Films	Sport Show of the Week	Tomorrow's World
			Le Material				Strange But True
08:00	News in French						
	Letters & Songs	Arabic Drama	Focus	Panorama	Omnibus	Point of View	You Bet Your Life
			Varieties		Jazz Music	Music to Watch	Arabic Variety
09:00	Sight and Sound	I Witness Video	Russian Drama	Arabic Drama	French Drama	Arabic Drama	TV Magazine
10:00	News in English						
	Feature Film	French Drama	Feature Film	Secret Service	Best Sellers	Cine Club	Street of Justice
		Comedy Series		World Language			Ballet Show
12:00	Night Cap and Closing						



## 12. Table of Educational TV Programmes



## 12. Table of Educational TV Programmes

Table 12-1 Table of Educational TV Programmes

The Syrian Arab Republic  
Ministry of Education  
EMDPC

from 17 April to 22 April  
26th week

Date	Stage	Subject	Remarks
Sat. 17 Apr.	Holiday	—	—
Sun. 18 Apr.	Holiday	—	—
Mon. 19 Apr.	General/ Secondary	Geography	The economy of al Nyle Valley
	General	French language	Folklore music
	Secondary	Mathematics	The sphere
	General	Scientific encyclopedia	The beginning
Tue. 20 Apr.	Secondary	Physics	Electronics (1)
	General	English language	Walter, Cony and the old lady
	Elementary	Music	The tone of Zat a Syneen
	General	Scientific encyclopedia	Animals of coast and sea
Wed. 21 Apr.	Secondary industrial	Mathematics	Integration
	General	French language	Folklore music
	Preparatory	Natural science	Breathing
	General	Scientific Encyclopedia	Waves and energy
Thu. 22 Apr.	Elementary	Arabic language	Reading
	General	English language	Walter writes a story
	General	Teaching technology	Educational charts
	General	Scientific encyclopedia	How things move

Table 12-2 Table of Educational TV Programmes

The Syrian Arab Republic  
Ministry of Education  
EMDPC

from 24 April to 29 April  
27th week

Date	Stage	Subject	Remarks
Sat. 24 Apr.	Secondary	Physics	Electronics (2)
	General	English language	Walter writes a story
	Secondary	Natural science	Changing
	General	Scientific encyclopedia	Life in woods
Sun. 25 Apr.	Preparatory	Arabic language	Expression "New information media"
	General	Russian language	Tour in Mos
	Secondary	Mathematics	Logarithmic functions
	General	Scientific encyclopedia	The story of the oyster
Mon. 26 Apr.	General	Geography	The African horn
	General	French language	Bert's square
	Secondary	Mathematics	Logarithmic functions
	General	Scientific encyclopedia	Blood
Tue. 27 Apr.	Secondary	Chemistry	
	General	English language	Walter and Coney going to a party
	General	Health	The mother's health
	General	Scientific encyclopedia	Water and its effects
Wed. 28 Apr.	Secondary industrial	Chemistry	Oxidation numbers
	General	French language	Bert's square
	Preparatory	Arabic language	
	General	Scientific encyclopedia	Noise structure and job
Thu. 29 Apr.	Secondary	Arabic language	Expression
	General	English language	Walter and Coney going to a party
	General	Environment	Environmental awareness
	General		Light's effects

### 13. List of TV Translator Stations



13. List of TV Translator Stations

NO.	STATION	RECEIVING CH	TRANSMITTING CH	TX POWER (W)	PG. NO.	LOCATION
1	SALKAD	7	4	10	1	NEAR SWEDA
2	GOLLAN	7	4	10	1	NEAR QUNITRA
3	YABROOD	8	6	10	1	NEAR YABROOD
4	YABROOD	6	10	50	1	NEAR YABROOD
5	RAS ALMARA	8	10	10	1	NEAR YABROOD
6	HOSH ARAB	10	6	10	1	NEAR SYDNAYA
7	ASHRAFEAT ALWADY	10	8	10	1	WEST OF DAMASCUS
8	KUDSAYA	10	8	10	1	WEST OF DAMASCUS
9	HENA	10	8	10	1	SOUTH OF DAMASCUS
10	ERNA	10	6	10	1	SOUTH OF DAMASCUS
11	ALSAROKEA	12	64	50	2	WEST OF DAMASCUS
12	KUNAYFES	3	6	10	1	NEAR PALMYRA
13	ALSUKENA	8	12	100	1	NEAR PALMYRA
14	ALMUZAYNA	3	11	10	1	NEAR HOMS
15	BAYT ALALOONY	9	11	50	1	NEAR LATAKIA
16	AL DOLAYBAT	9	5	10	1	NEAR LATAKIA
17	DOYR RUSSLAN	3	10	10	1	NEAR TARTUS
18	HAMAM KUNENA	3	10	10	1	NEAR TARTUS
19	WADY ALOYOON	3	11	10	1	NEAR TARTUS
20	ALDREKEESH	9	10	10	1	NEAR TARTUS
21	MASHITA ALHOLO	3	7	50	1	NEAR TARTUS
22	SALKEEN	9	11	10	1	NEAR ALEPPO
23	HAREM	9	12	10	1	NEAR ALEPPO
24	ALBAB	5	8	10	1	NEAR ALEPPO
25	KANATER	9	5	10	1	NEAR ALEPPO
26	DARKUSH	9	12	10	1	NEAR ALEPPO
27	TAL ABYAD	5	11	10	1	NEAR TABQA
28	ALSABKHA	8	6	10	1	NEAR TABQA





## 14. List of Medium Wave Radio Stations



#### 14. List of Medium Wave Radio Stations

NO.	FREQUENCY (kHz)	STATION		LOCATION	TX POWER (kW)	BROADCASTING HOUR
1	567	DAMASCUS	1	036E55 033N33	1000	0600 -0200+
2	612	HOMS	1	036E42 034N47	300	0600 -0200+
3	666	DAMASCUS	1	036E55 033N33	600	0600 -0200+
4	747	SALAKEB	1	036E49 035N50	100	0600 -0200+
5	783	TARTUS	1	035E50 034N50	600	0600 -0200+
6	828	DER EZ ZOR	1	040E12 035N25	1500	0600 -0200+
7	873	DAMASCUS	2	036E22 033N25	10	0600 -1600
8	954	DER EZ ZOR	2	040E12 035N25	60	0600 -1600
9	1431	ALEPPO	2	037E08 036N14	10	0600 -1600
10	918	HASSAKE	1		200	0600 -1600
11	1071	TARTUS	2	035E53 034N51	60	0600 -1600
12	1125	HASSAKE	2		200	0600 -1600
13	1314	ALEPPO	1	037E08 036N14	10	0600 -1600



## 15. Result of Measuring of Field Strength



### 15. Result of Measuring of Field Strength

DATE :23 AUG, 1993

PLACE:NEW HASSAKE SITE

CH	STATION NAME	FIELD STRENGTH dB $\mu$ /m
2		-
3		-
4	HASSAKE(PRG. 1)	56
5		-
6	DEIR EZ ZOR(PRG. 1)	64
7		-
8	TABQUA(PRG. 1)	40
9		-
10		-
11		-
12		-

DATE :23 AUG, 1993

PLACE:HASSAKE SITE

CH	STATION NAME	FIELD STRENGTH dB $\mu$ /m
2		-
3		-
4	HASSAKE(PRG. 1)	100
5	IRAQ(SINJAR)	95
6		-
7	IRAQ(AL QAIM)	67
8		-
9	IRAQ(AL QAIM)	69
10	MALKIYA(PRG. 1)	79
11	IRAQ(SINJAR)	91
12	HASSAKE(PRG. 2)	-

DATE :24 AUG, 1993

PLACE:DEIR EZ ZOR SITE

CH	STATION NAME	FIELD STRENGTH dB $\mu$ /m
2		-
3		-
4	HASSAKE(PRG. 1)	35
5	IRAQ(SINJAR)	40
6	DEIR EZ ZOR(PRG. 1)	REST TIME
7		-
8	TABQUA(PRG. 1)	29
9		-
10		-
11	DEIR EZ ZOR(PRG. 2)	REST TIME
12		-

DATE :24 AUG, 1993

PLACE:TABQUA SITE

CH	STATION NAME	FIELD STRENGTH dB $\mu$ /m
2		-
3		-
4		-
5	ALEPPO/TABQUA(PRG. 2)	27
6		-
7	IRAQ(AL QAIM)	21
8	TABQUA(PRG. 1)	112
9		-
10	?	34
11		-
12		-

PROGRAM	CHANNEL 1	IN HASSAKE	IN KAMSHIRI
TRT 1	5-7-9	good	very good
TRT 2	Three UHF frequencies	good	very good
TRT 3	Three UHF frequencies	good	very good
TRT 4	Three UHF frequencies	good	very good
SHOWTV	One UHF frequencies	moderate	good
STARTV	One UHF frequencies	moderate	good
TGTR	One UHF frequencies	moderate	good
IRAQ 1ST PRG.	5	moderate	moderate
IRAQ 2ND PRG.	11	moderate	moderate









JICA