

As the normal use of the planned cyclone shelters is to serve as educational facilities (school buildings) which will not be usually used at night, no lighting system will, in principle, be provided. In view of the special request for night use at some sites, however, the provision of the following lighting system at Site No.3 is planned as a test case.

- Power Source : solar system with battery
- Lighting Capacity : capable of continuously lighting one classroom for 3 - 4 hours
- Luminous Intensity : 100 - 150 lux

### 5.3.3 Basic Design Drawings

The basic design drawings are given in the following pages.

[Basic Design Drawings]

- Site Plan Fig. 5-3-1 (1)~Fig. 5-3-1 (10)
- Ground Floor Plan Fig. 5-3-2
- First Floor Plan Fig. 5-3-3 (1), Fig. 5-3-3 (2)
- Roof Plan Fig. 5-3-4
- Elevation Fig. 5-3-5
- Section Fig. 5-3-6

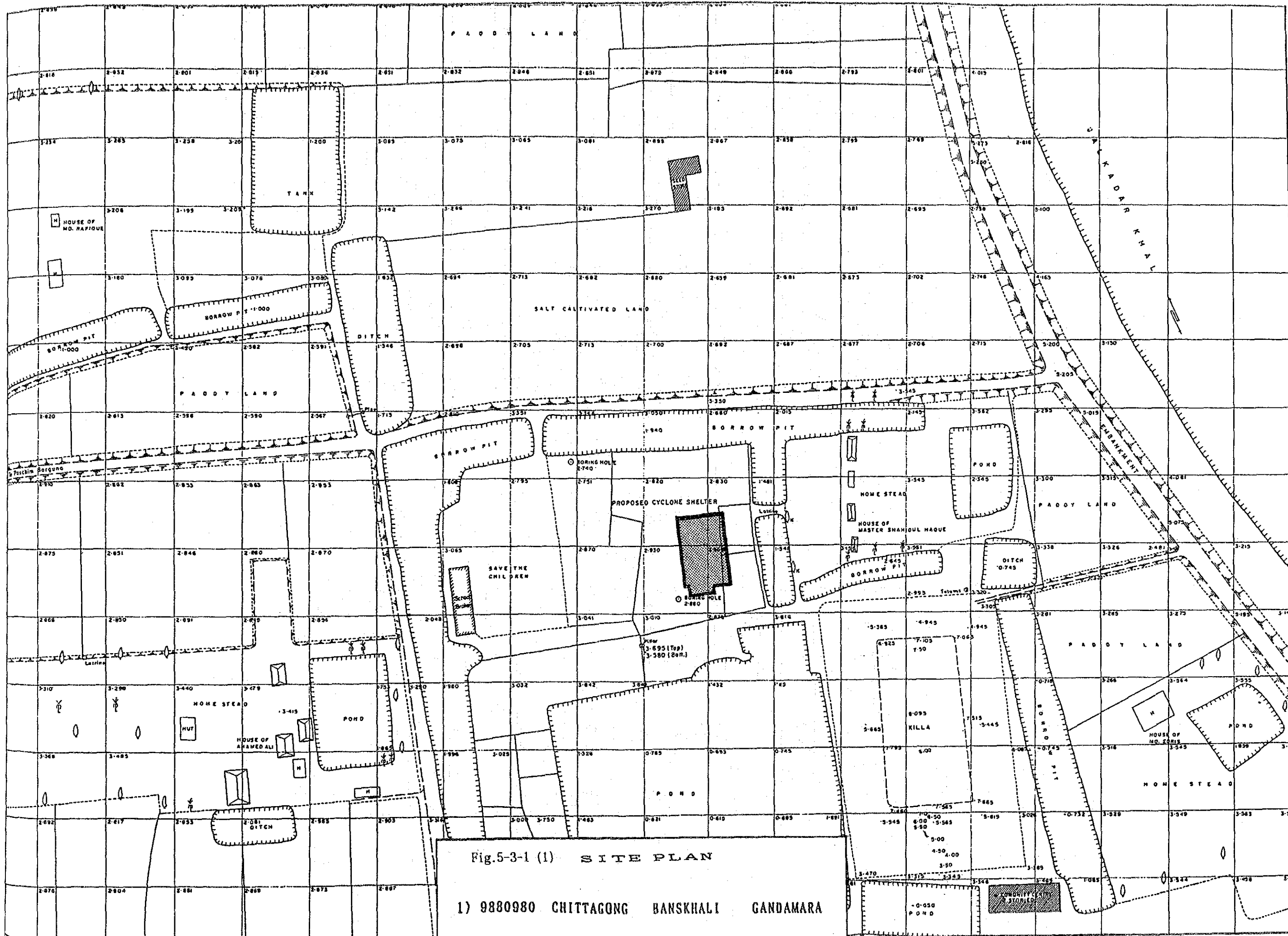


Fig.5-3-1 (1) SITE PLAN

1) 9880980 CHITTAGONG BANSKHALI GANDAMARA



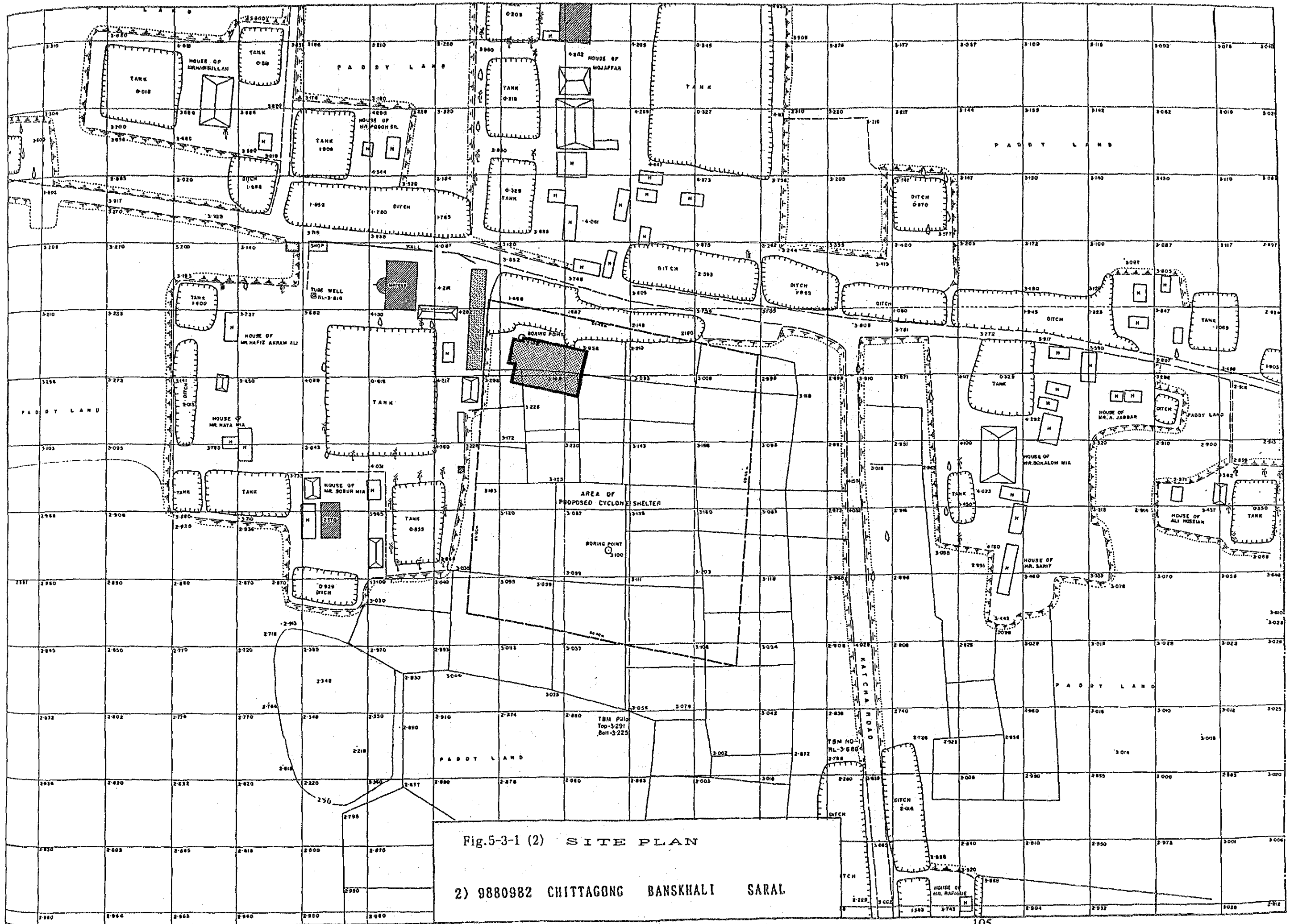
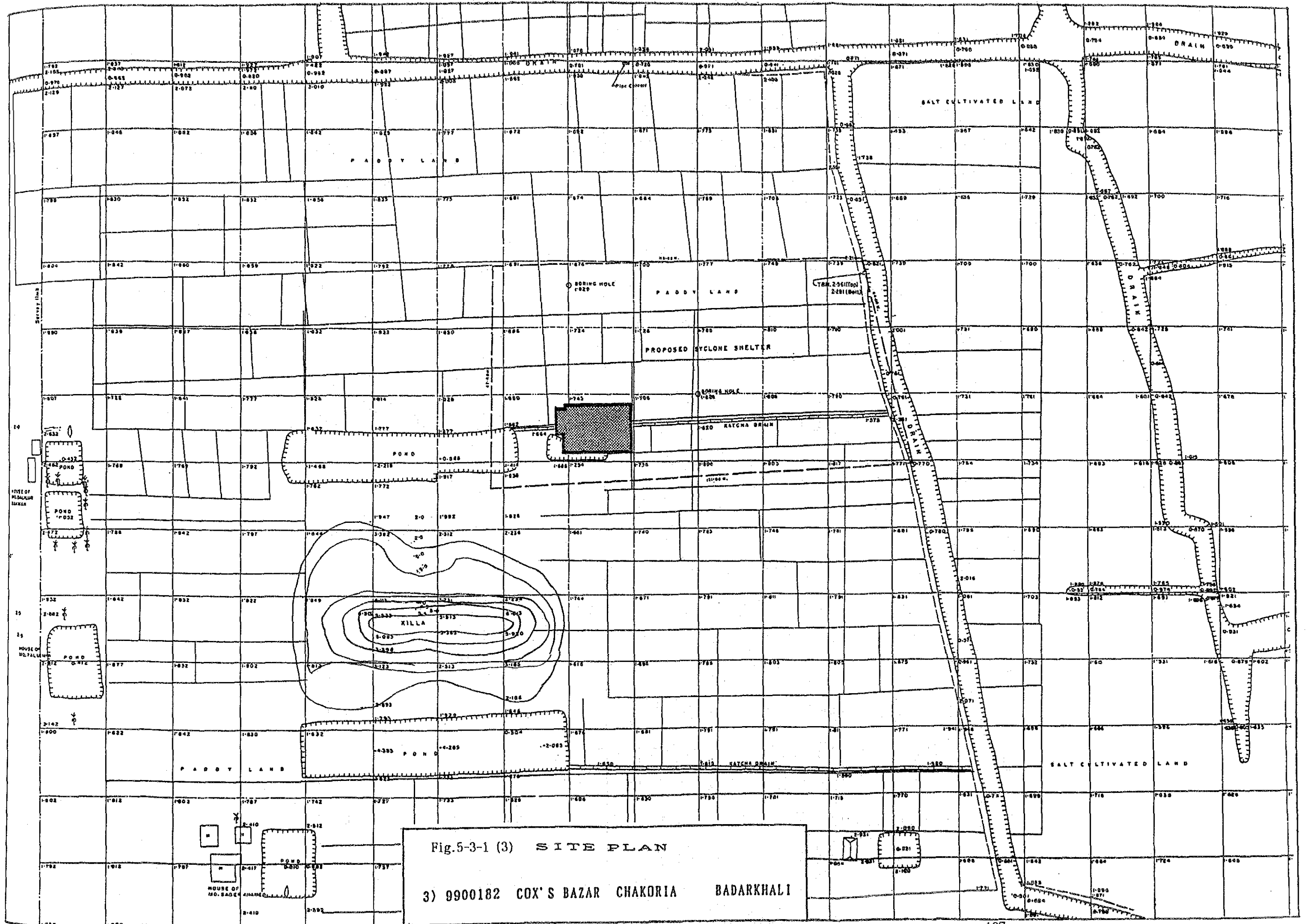


Fig.5-3-1 (2) SITE PLAN

2) 9880982 CHITTAGONG BANSKHALI SARAL







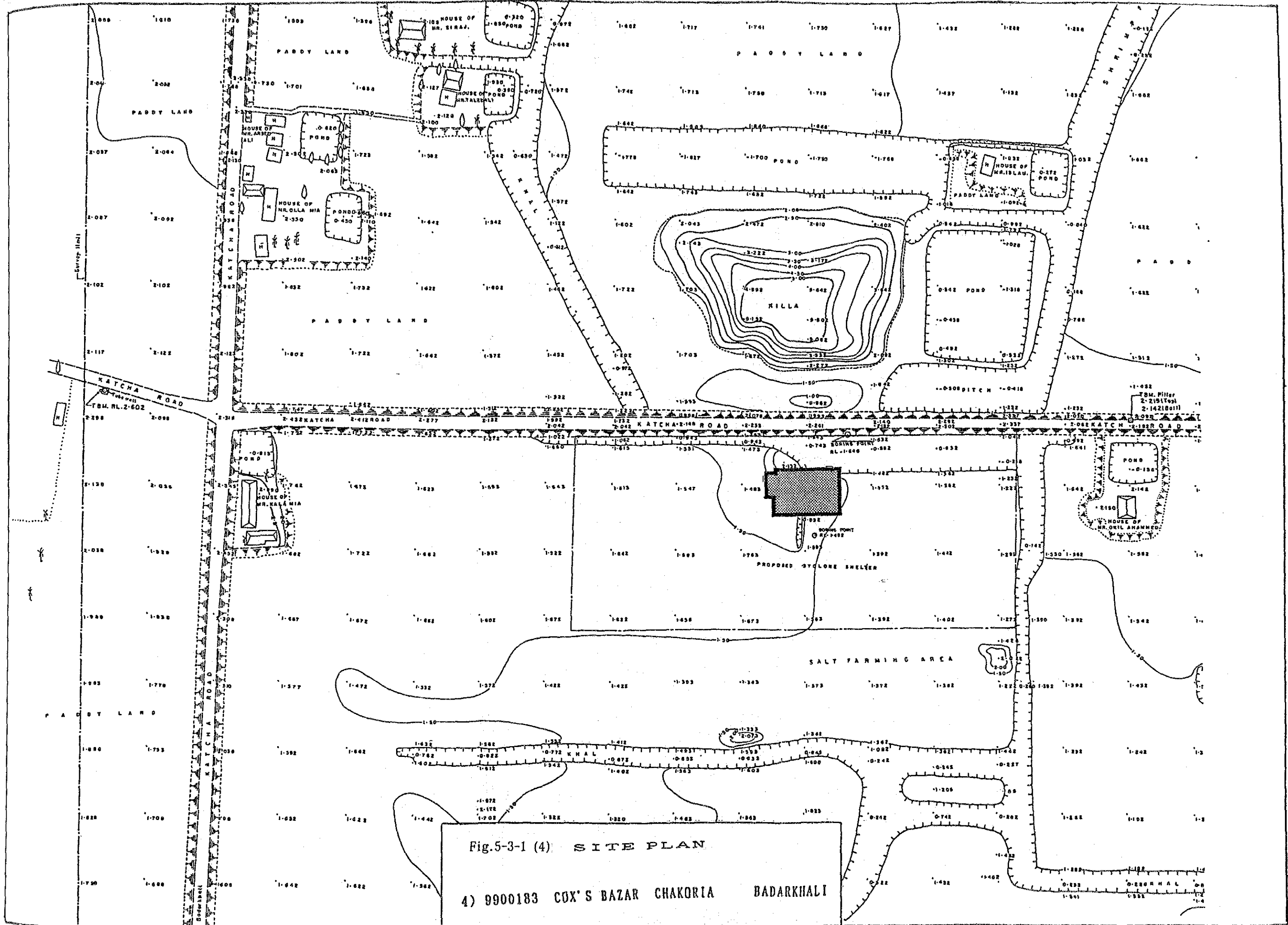


Fig.5-3-1 (4) SITE PLAN  
 4) 9900183 COX'S BAZAR CHAKORIA BADARKHALI





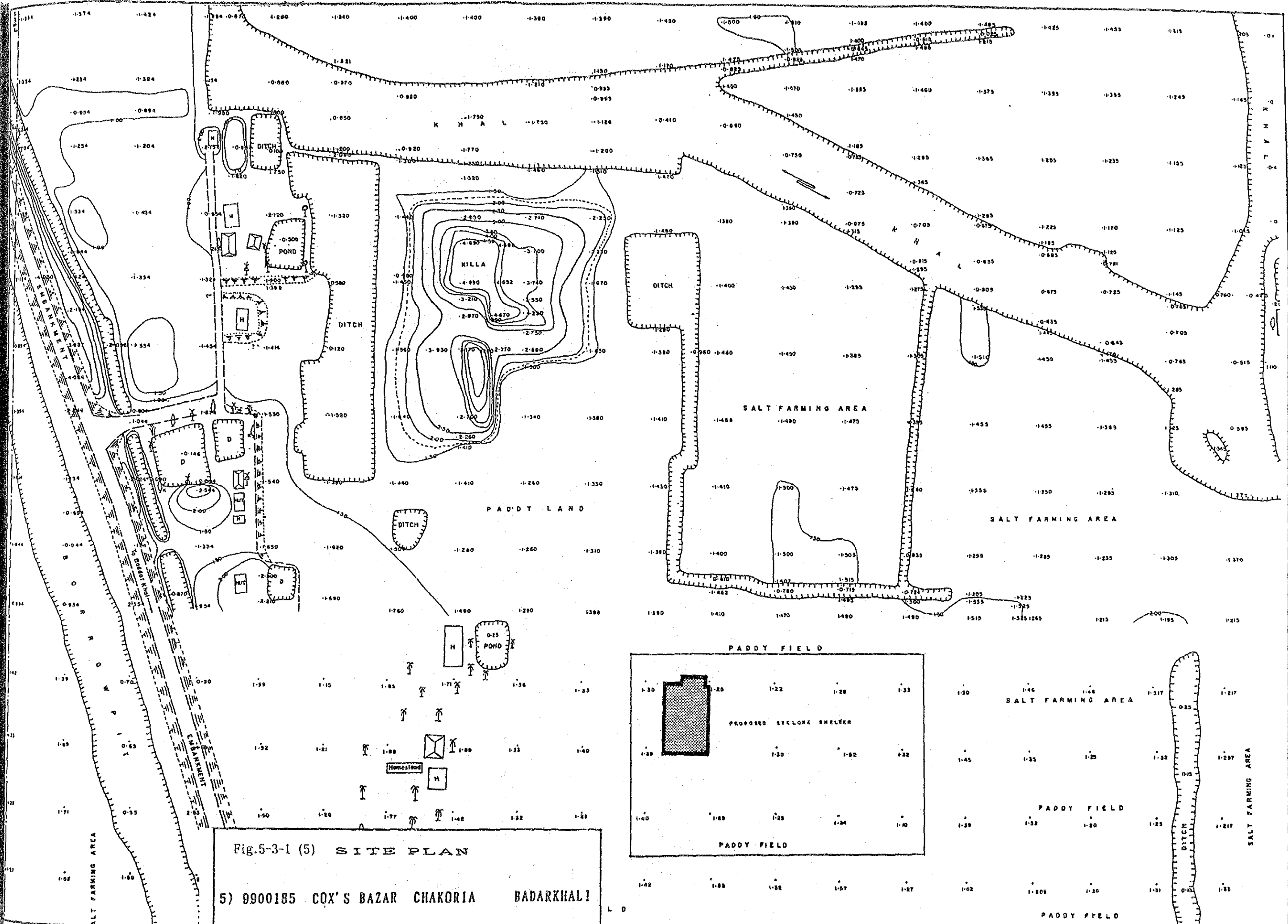


Fig.5-3-1 (5) SITE PLAN  
 5) 9900185 COX'S BAZAR CHAKORIA BADARKHALI



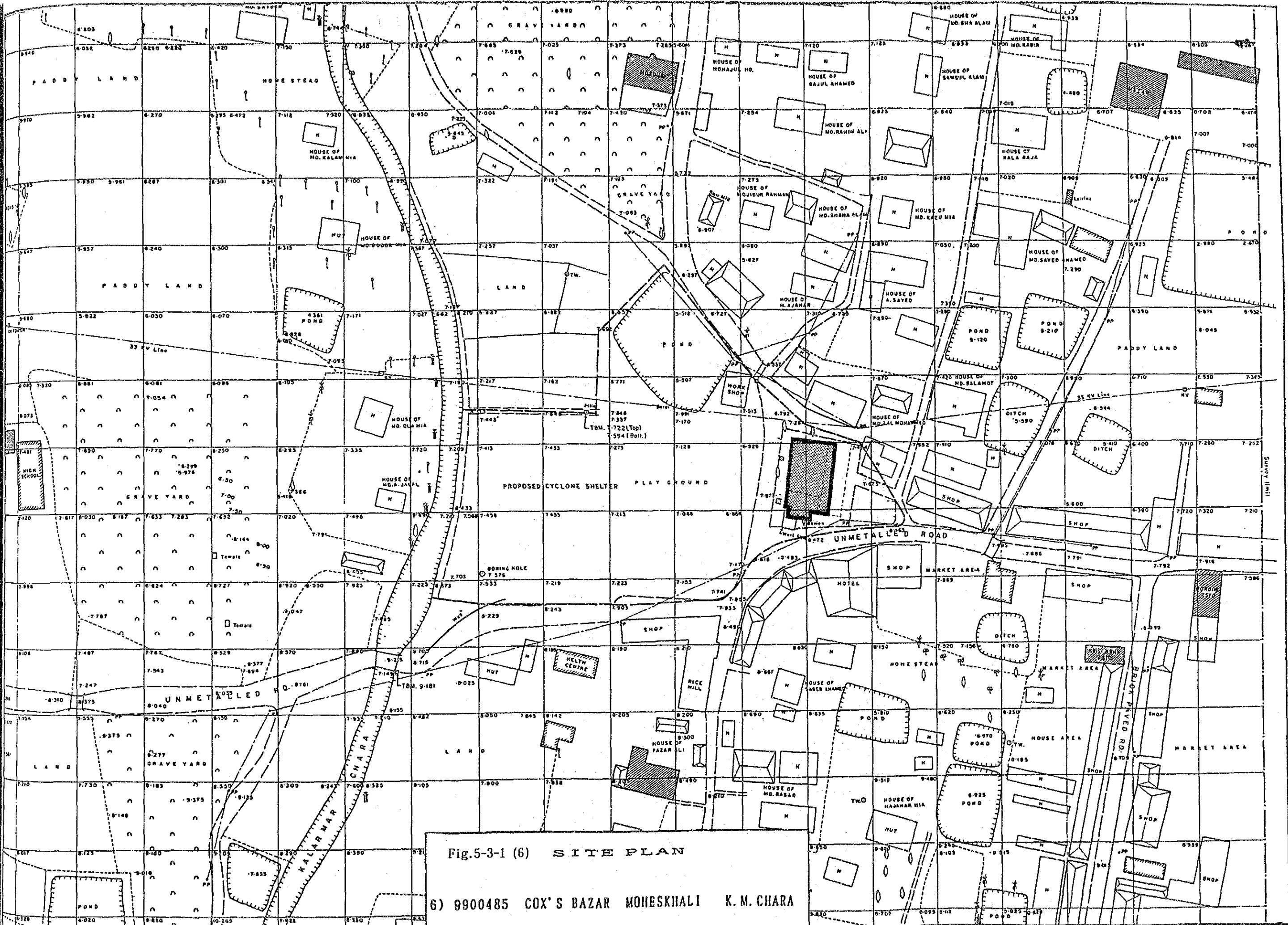
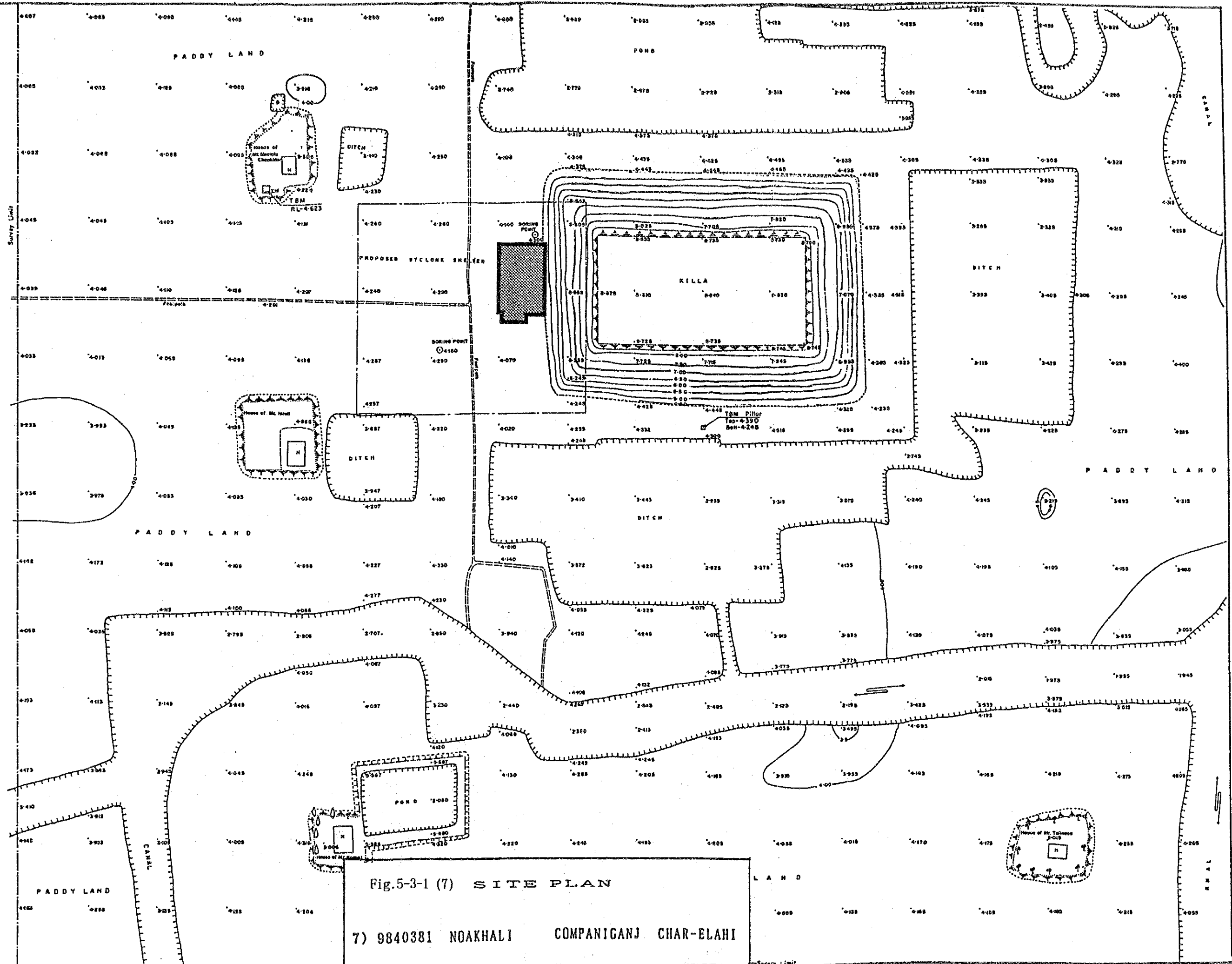


Fig.5-3-1 (6) SITE PLAN

6) 9900485 COX'S BAZAR MOHESKHALI K. M. CHARA







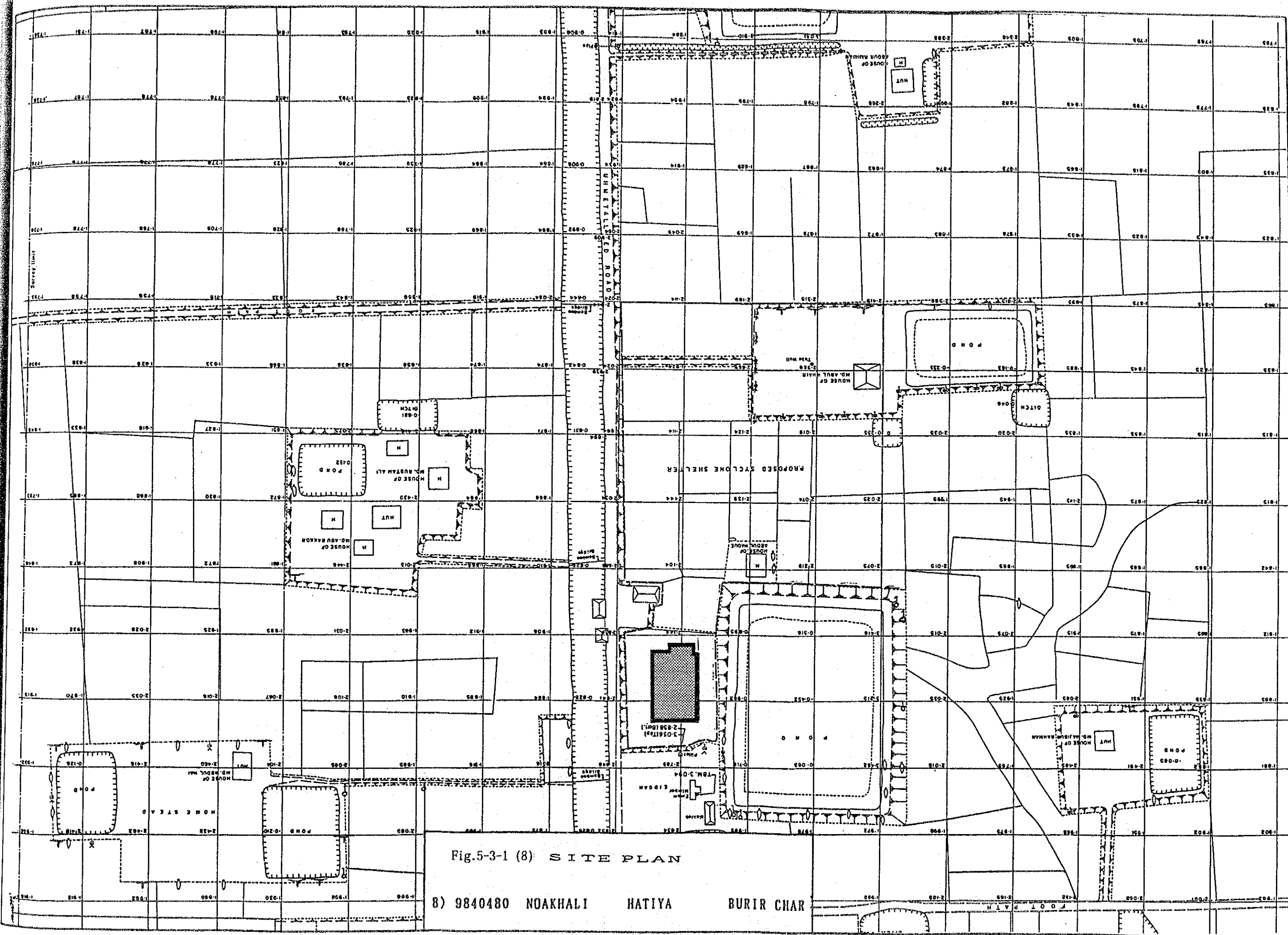


Fig.5-3-1 (8) SITE PLAN

8) 9840480 NOAKHALI HATIYA BURIR CHAR





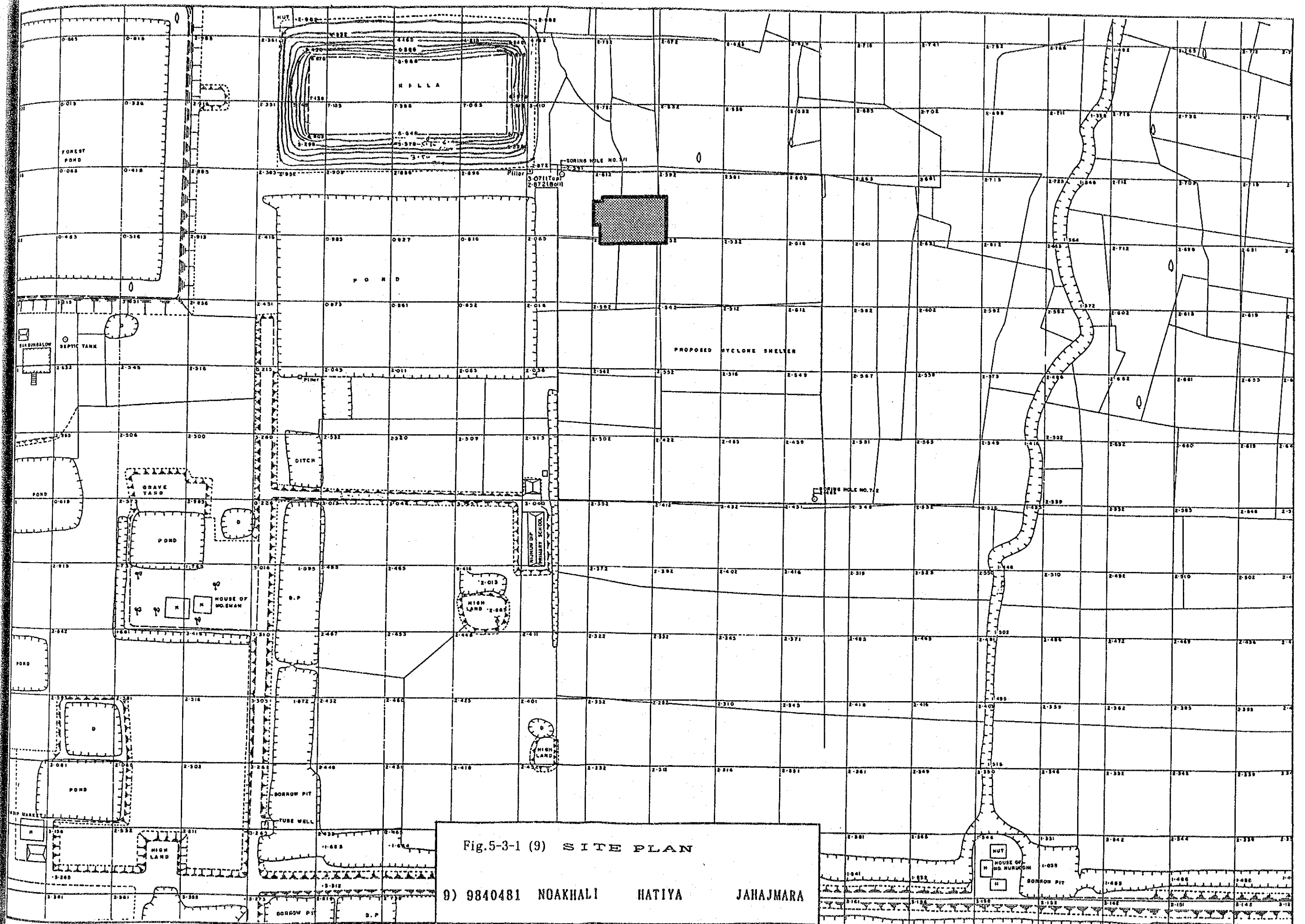


Fig.5-3-1 (9) SITE PLAN  
 9) 9840481 NOAKHALI HATIYA JAHAJMARA



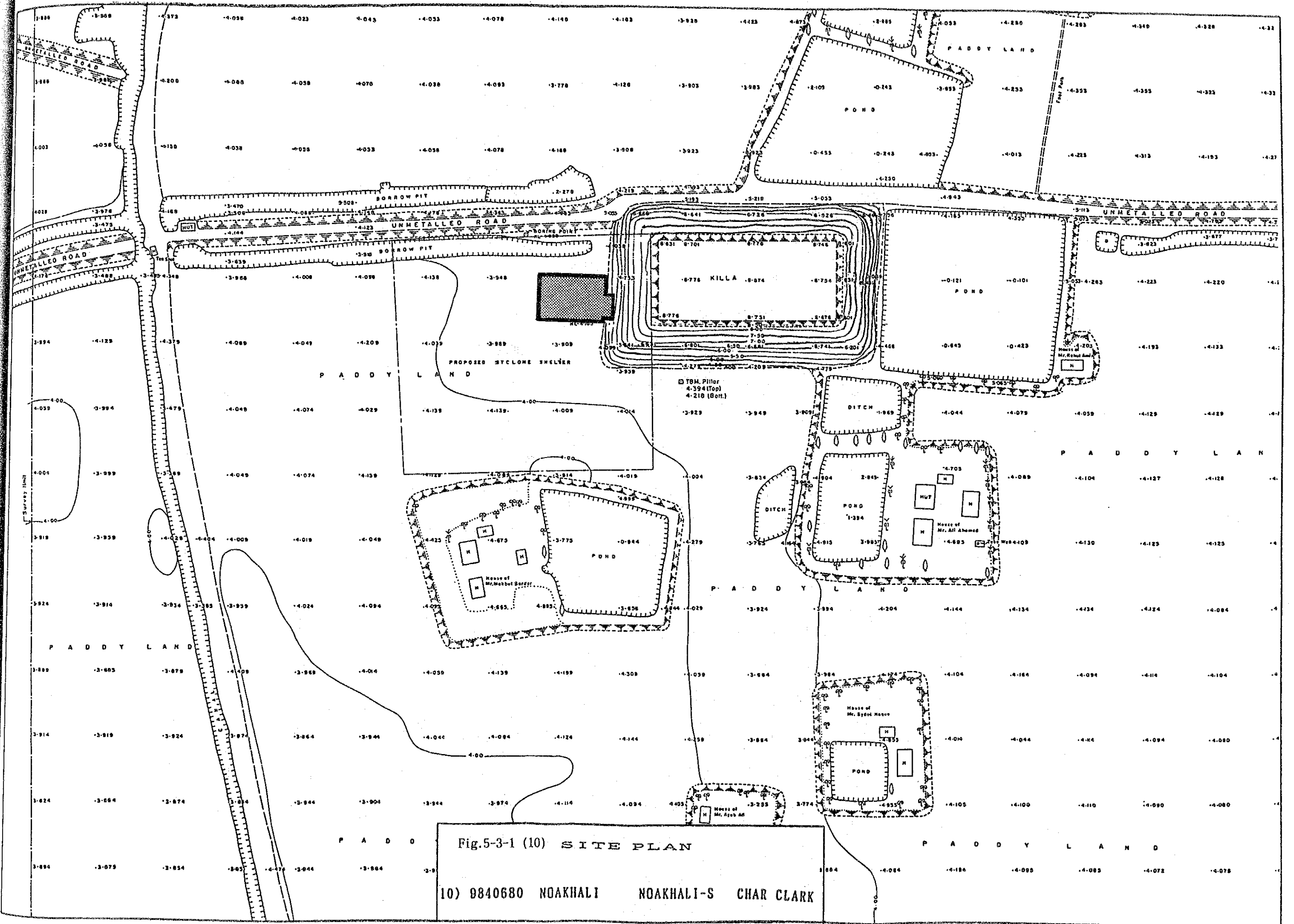


Fig.5-3-1 (10) SITE PLAN  
 10) 9840680 NOAKHALI NOAKHALI-S CHAR CLARK



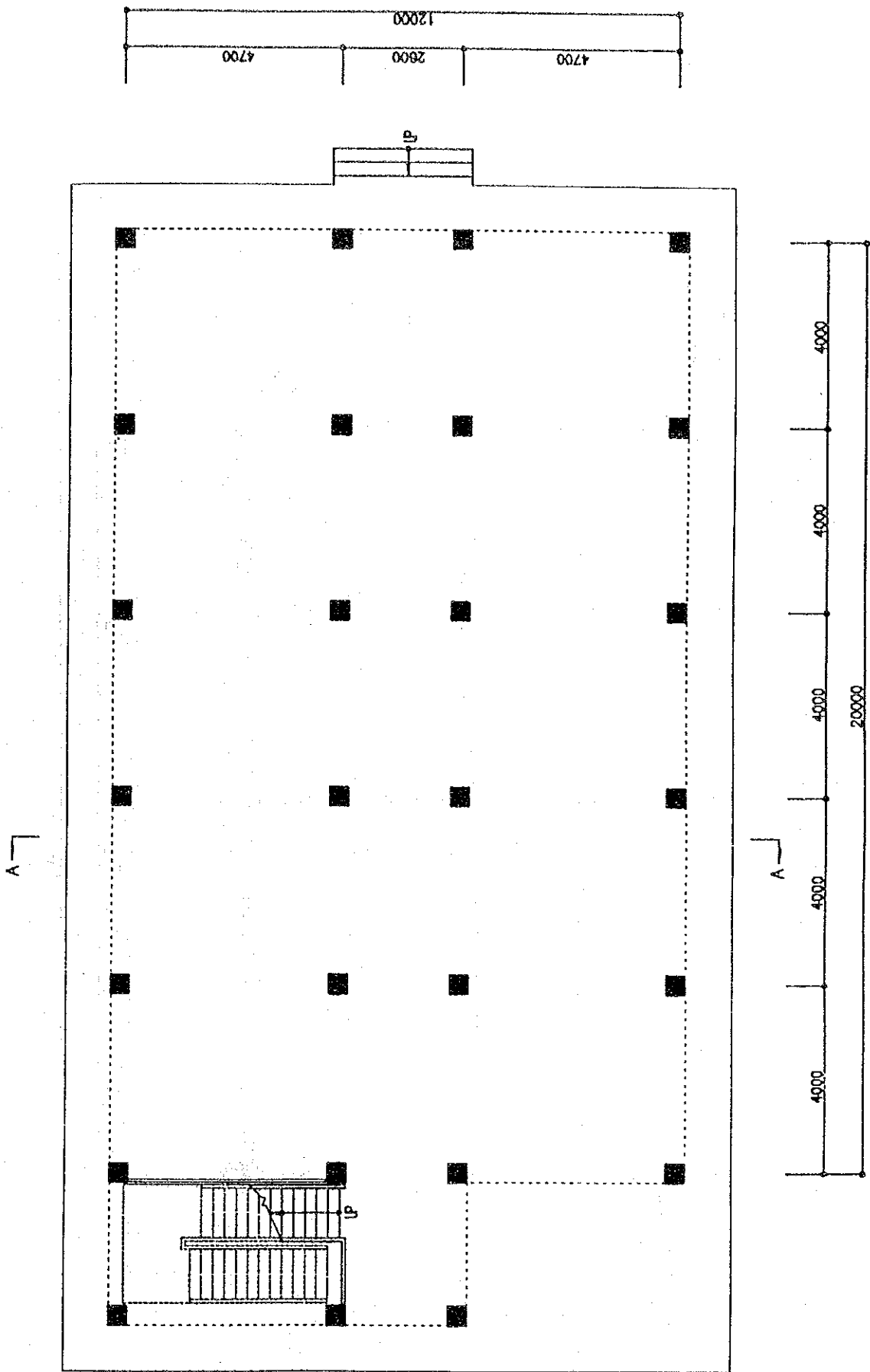


Fig.5-3-2 GROUND FLOOR PLAN S = 0 M 1 5 M

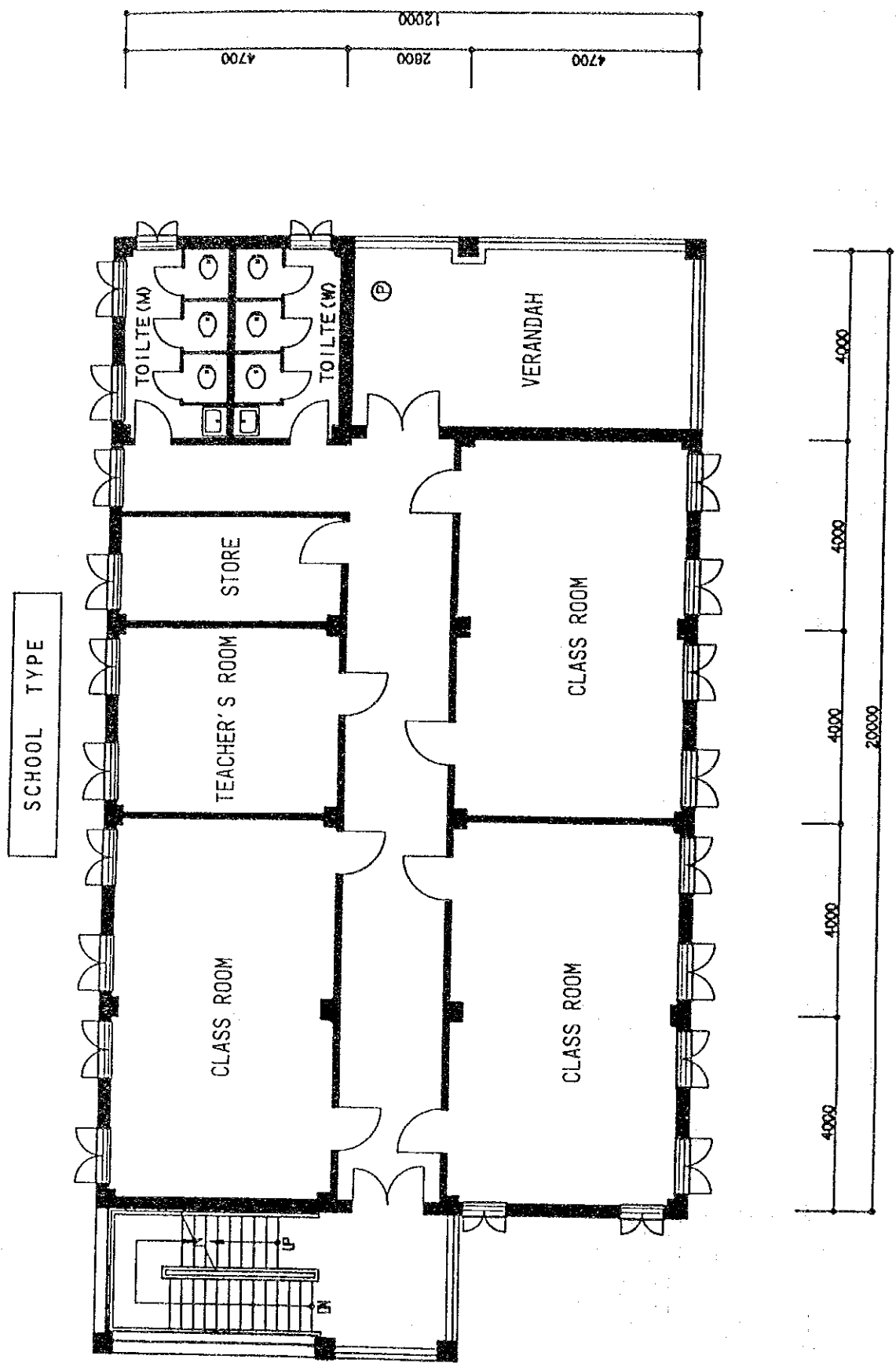


Fig.5-3-3 (1) FIRST FLOOR PLAN S = 1/100

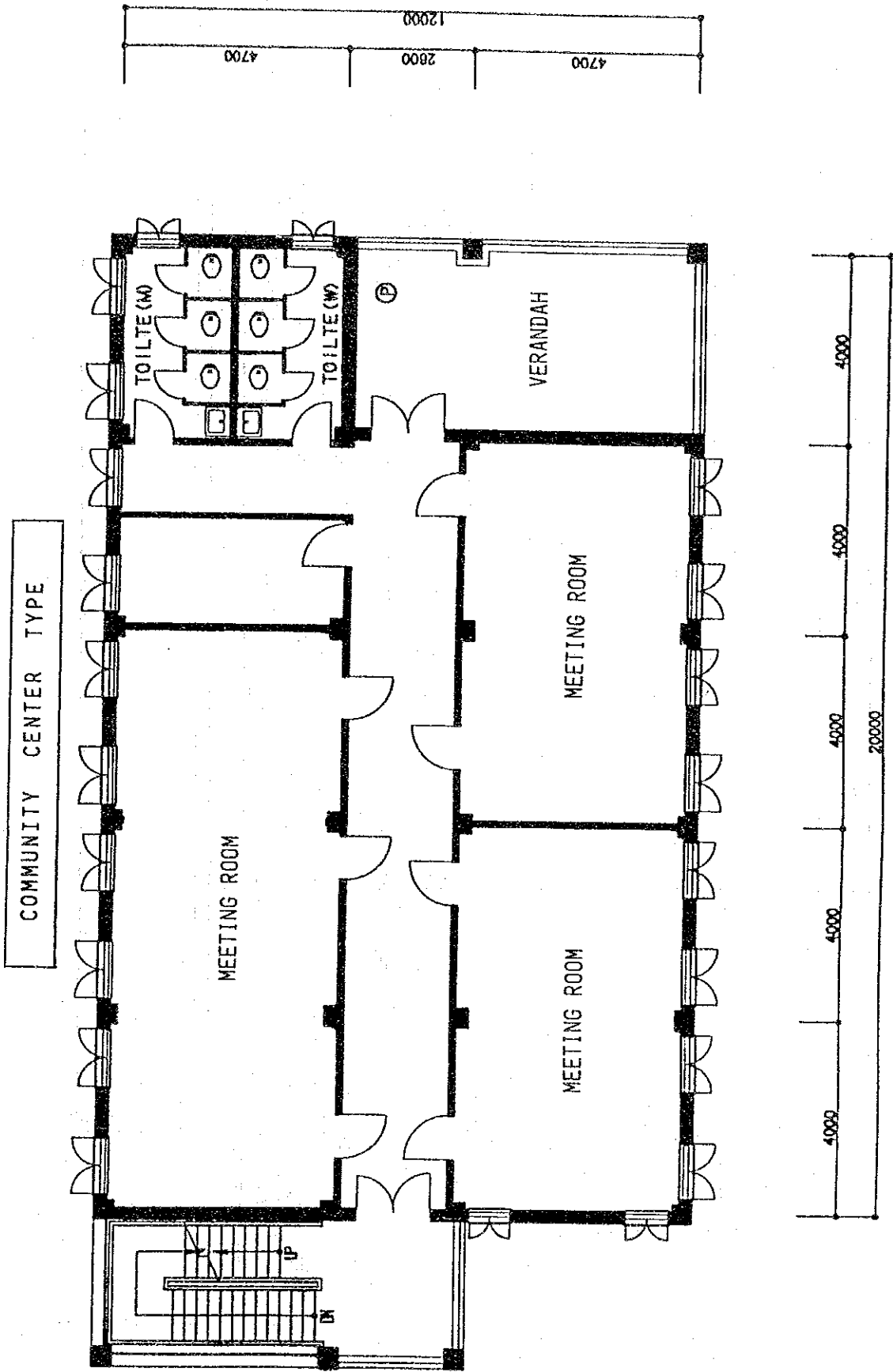


Fig.5-3-3 (2) FIRST FLOOR PLAN S =  $\frac{1}{10000}$



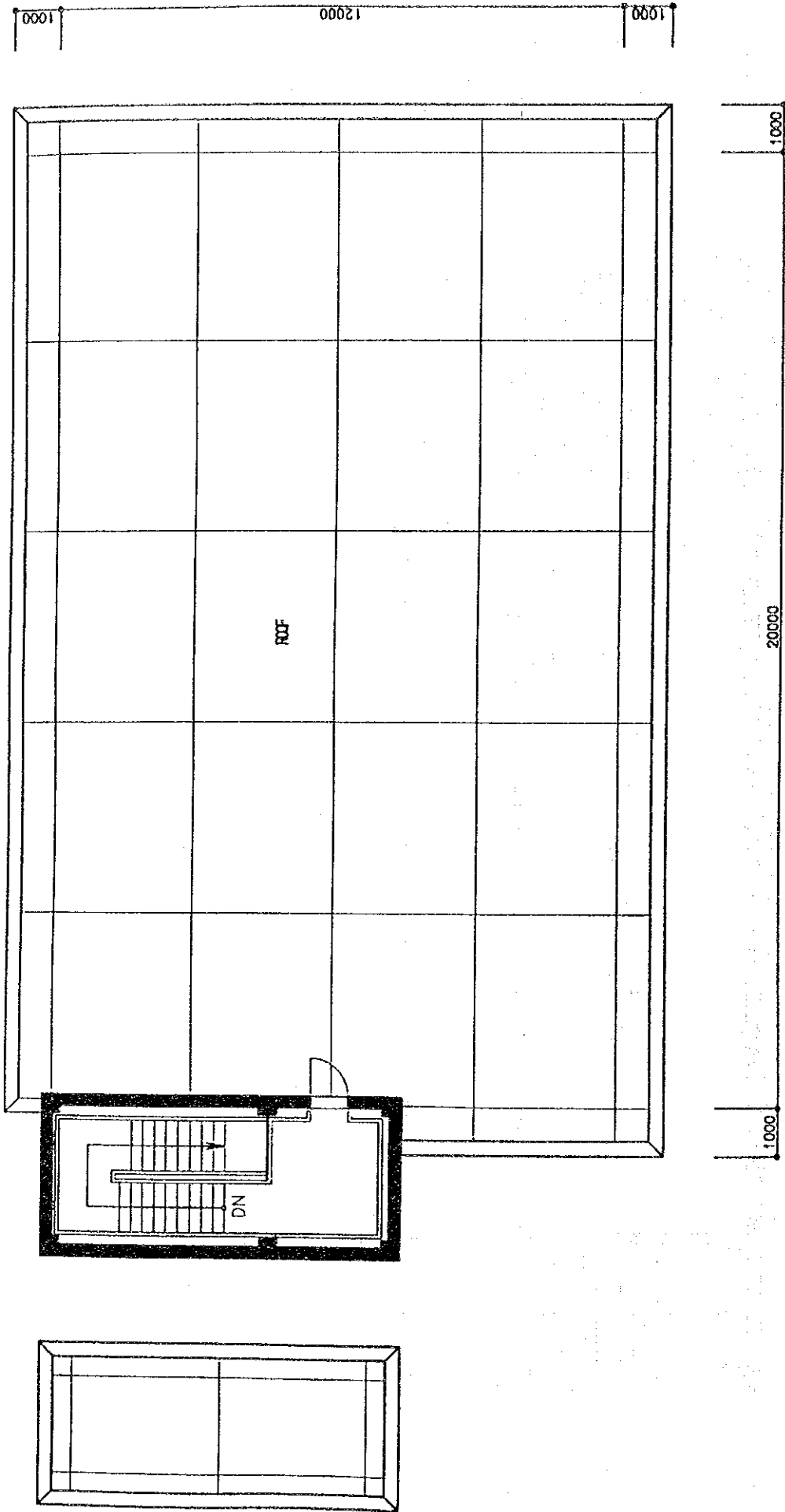


FIG. 5-3-4 ROOF PLAN S = 1/100

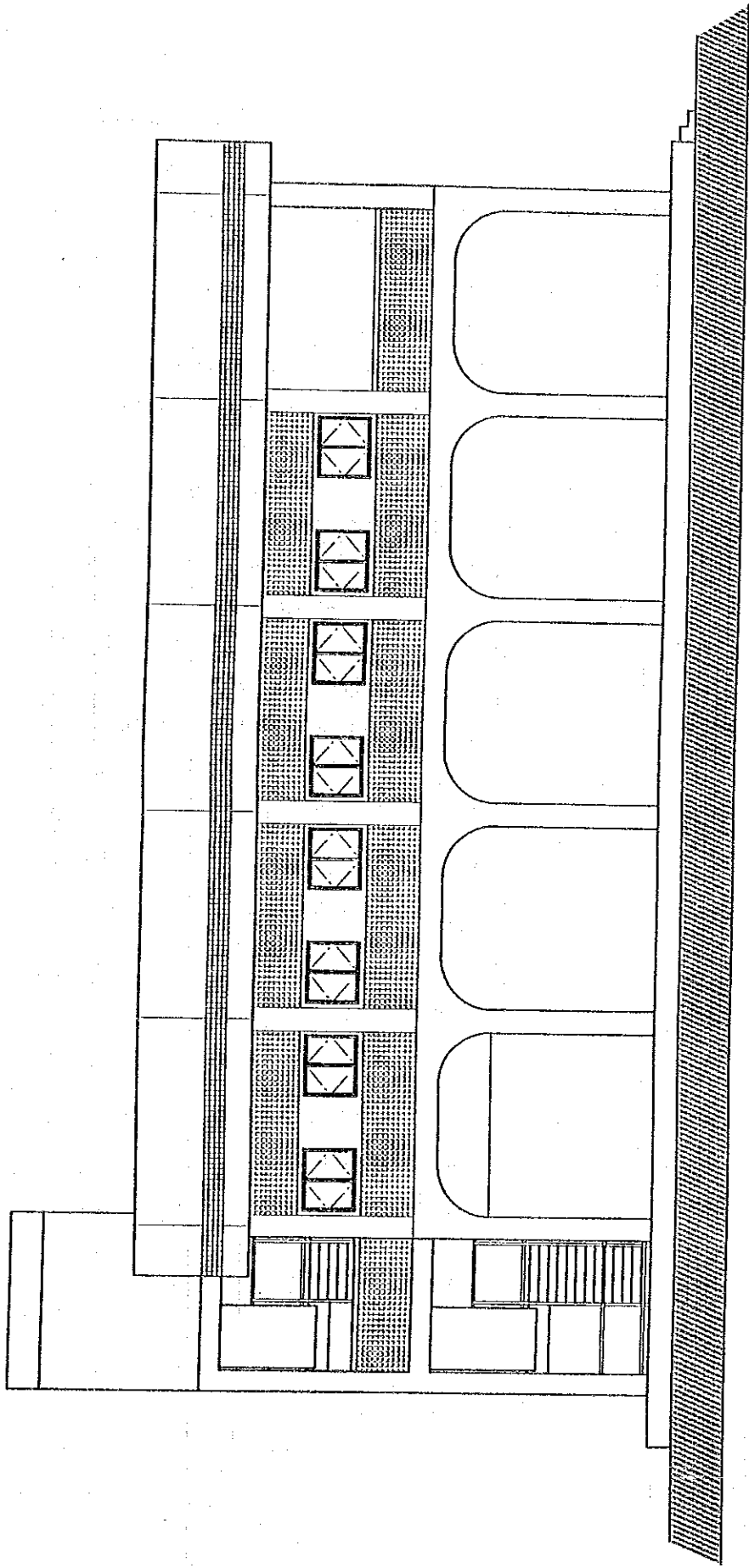
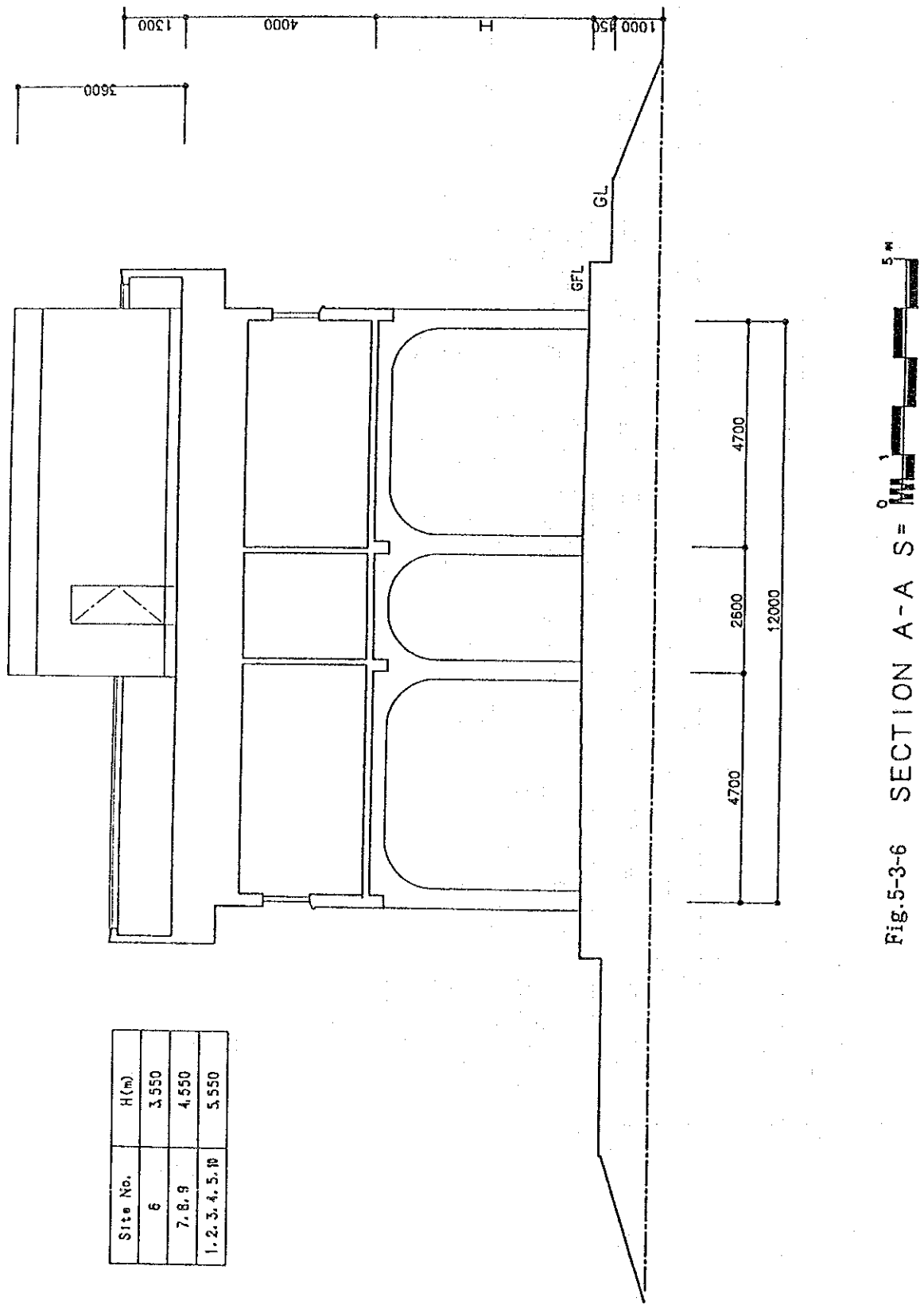


FIG. 5-3-5 ELEVATION S = 0 1



## 5.4. Construction Plan

### 5.4.1 Construction Policies

#### (1) Project Implementation System

The responsible ministry for the project is the MLGRD&C and the implementing agency is the LGED of the MLGRD&C. Therefore, local counterparts for the Detailed Design Study are the staff members from LGED who will also be responsible for supervision of the construction work representing the Bangladesh side. Contracts with the consultant and contractor for the Project, however, will be made by the LGED in accordance with the relevant procedures of the Government of Bangladesh.

Following the signing of the E/N relating to grant aid for the Project, the LGED will conclude a consultancy contract with a Japanese consultant. The Japanese consultant will be assigned the preparation of the detailed design (preparation of detailed design documents and drawings and supervision of the tender procedure on behalf of the Government of Bangladesh) and to supervise the construction work. The actual construction work will be conducted by a Japanese contractor, selected by the LGED in accordance with the tender procedure supervised by the consultant.

#### (2) Scope of Undertakings of Both Governments

The Governments of Japan and Bangladesh will be responsible for the following for the successful completion of the Project.

The Government of Bangladesh will undertake the necessary measures which are described in the M/D dated the 8th of April, 1993 (refer to Appendix 1.4).

The Government of Japan will undertake the following.

- 1) Construction of 10 cyclone shelters.
- 2) Provision of fixtures for the cyclone shelters.
- 3) Provision of a hand pump at each site.
- 4) Construction of a borehole (GL: -300 to -400m) at each site.
- 5) Provision of a septic tank at each site.
- 6) Provision of a lighting system at site No.3.
- 7) Provision of consultancy services.

#### 5.4.2 Points to Note for Construction Work

Basic construction materials, such as cement, sand, gravel and reinforcing bars, etc., will be procured locally and local workers will be employed for construction purposes. Consequently, a local contractor will be appointed as the sub-contractor in view of the contractors detailed knowledge of the conditions of the local construction industry. The local sub-contractor should have experience of similar work, so that the conducting of assigned work under the appropriate supervision and advice provided by the Japanese contractor can be carried out properly.

Earth work must be avoided during the rainy season in Bangladesh, i.e., from June to October. Careful planning for staging of construction during the dry season i.e., commencement of earth work at the beginning of the construction period and finishing work at the end of the construction period is extremely important as this work is dependant upon weather conditions. In addition special attention must be paid to the religious holiday of Ramadam, (celebrated by many Muslims in Bangladesh), in terms of planning and construction scheduling, because of the drastic reduction of work productivity by those celebrating Muslims who might be employed as construction workers.

#### 5.4.3 Construction Management Plan

Following the signing of the E/N, the consultant which has secured the consultancy contract will prepare the detailed design, tender documents, will conduct the tender process on behalf of the Government of Bangladesh and will supervise the work to be conducted by the contractor who submits a successful bid.

##### (1) Preparation of Detailed Design and Tender Documents

The detailed design documents will be prepared by the consultant based on the survey maps prepared for the Basic Design, the boring survey results and the findings of further field surveys for the Detailed Design. Similarly, the consultant will prepare the tender documents for approval by the Government of Bangladesh.

##### (2) Tender

The consultant will carry out the tender announcement, acceptance of tender applications, explanatory meeting on the tender process, distribution of tender documents, acceptance of bids and evaluation of bids on behalf of the Government of Bangladesh. The consultant will be an advisor for negotiations between the Government of Bangladesh and the successful bidder in view of the conclusion of an appropriate construction contract.

**(3) Work Supervision**

Following the conclusion of the construction contract, the work supervision stage will commence. In Japan, the consultant will check and all approve documents presented by the contractor. At the actual construction sites, the consultant will supervise the contractor (including sub-contractors) on all aspects of the construction work, including the transportation of materials and equipment, process control, quality control and materials control.

**(4) Personnel Plan**

The experts to be assigned for the detailed design stage will be responsible for project implementation, architectural design, building structural design, cost estimations and tender documents arrangements. The architectural designer will be dispatched to Bangladesh as an on-site, full-time supervisor.

**5.4.4 Procurement Plan**

In principle, the materials and equipment required for the implementation of the Project will be procured locally. Those materials and equipment which are unavailable in Bangladesh, the quality of which is unacceptable, the stable supply of which is not guaranteed or the cost of which is prohibitive, will be procured in Japan in order to ensure the reliability and cost-competitiveness.

**(1) Main Materials and Equipment to be procured in Bangladesh**

**1) Construction Materials**

- reinforcing bars
- cement
- aggregates
- bricks
- water-resistant paint
- concrete forms

**2) Facilities**

- solar generator
- lighting equipment
- sanitary facilities
- hand pump for water supply

### 3) Equipment

- desks
- chairs
- blackboards

### (2) Materials and Equipment to be procured in Japan

Construction Machinery (due to the absence of a local leasing system)

- soil compactors (3 - 4 hp)
- vibrators (bar type: 1hp)
- welders (60 - 140 A)
- bar cutters
- bar benders
- levels
- transits
- slump testers
- forms (for form work)

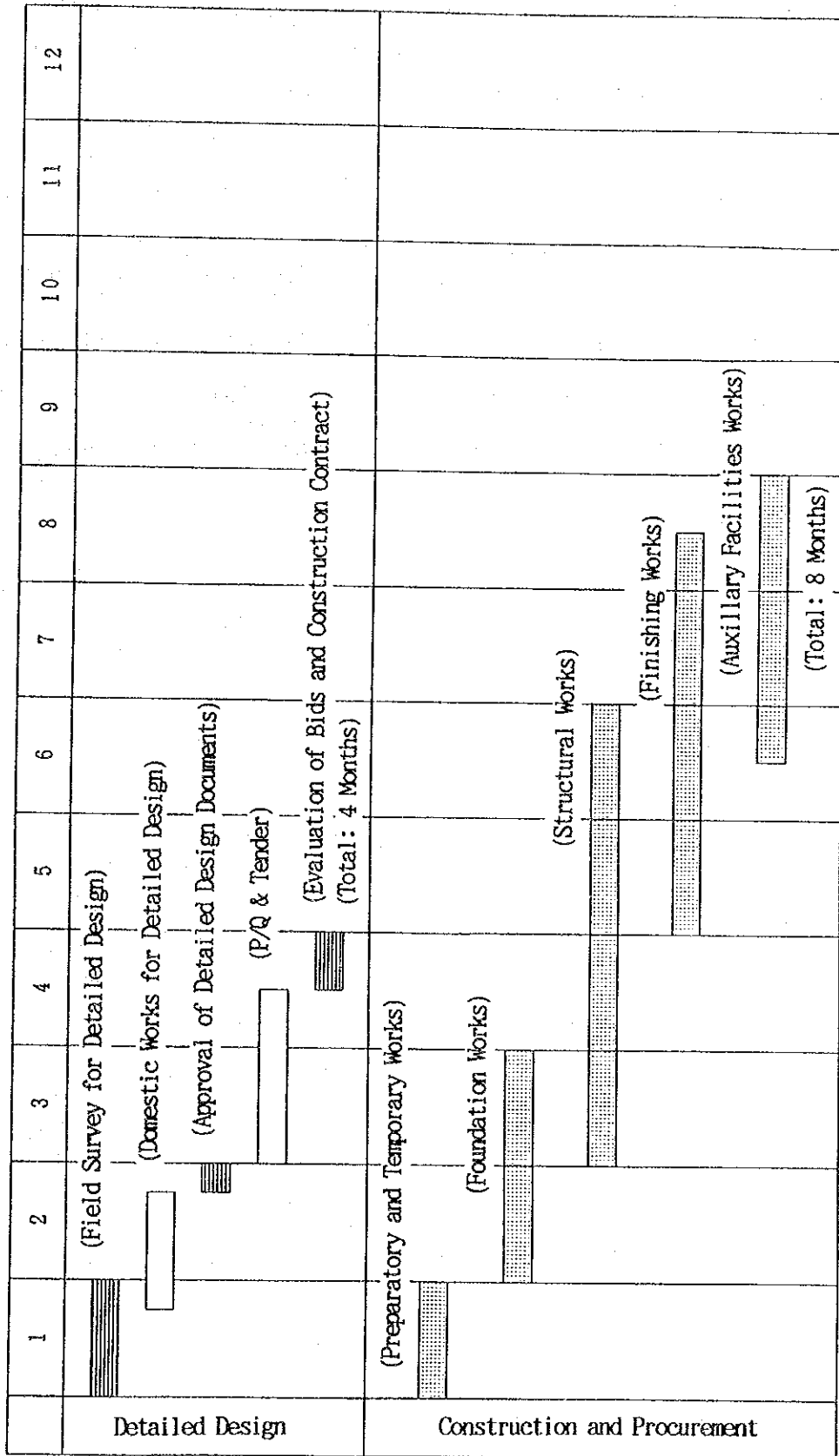
### (3) Labor

All types of workers and skills required for the implementation of the Project are available in Bangladesh and, therefore, all necessary labor will be recruited locally.

#### 5.4.5 Implementation Schedule

The adoption of the following project implementation schedule after the signing of the E/N by both governments is desirable. Following the signing of the E/N, the Government of Bangladesh (LGED) will then immediately conclude the consultancy contract to proceed with the Detailed Design. A period of 1.5 months will be required to complete the detailed design which will be immediately followed by the tender procedure to select the contractor. This tender procedure will be conducted by the consultant on behalf of the LGED and the negotiated contract will be concluded by the LGED and the successful bidder. The completion of the construction within 12 months of the signing of the E/N is highly desirable in view of the preparation of a viable project implementation schedule.

Table 5-4-1 Project Implementation Schedule





## 5.5 Estimated Project Cost

In the case of the Project being implemented by grant aid from the Government of Japan, the governments of Bangladesh will be required to meet the following costs for the successful completion of the Project.

1) Bank Commission	:154,000 TK (0.5 million yen)
2) Land Acquisition Cost (access roads)	:180,000 TK (0.6 million yen)
(shelters)	:2,310,000 TK (7.4 million yen)
3) Import Duties	:960,000 TK (3.1 million yen)
4) Killa Construction Cost	: funded by WFP
Total	:3,604,000 TK (11.6 million yen)

## **CHAPTER 6**

### **PROJECT EVALUATION AND CONCLUSIONS**



## CHAPTER 6 PROJECT EVALUATION AND CONCLUSIONS

### 6.1 Project Evaluation

The Master Plan prepared by the Government of Bangladesh for the urgent protection of people living in the HRA from the storm surge caused by cyclones calls for the construction of 2,500 new cyclone shelters. The Government of Bangladesh has already requested the assistance of donor countries, international aid organizations and NGOs for the construction of these cyclone shelters and work is underway by the World Bank to coordinate the aid efforts of various donor countries, including Japan. It is believed that the present Project is both an important and useful part of the international cooperation efforts to meet the requirements of the Master Plan.

The Master Plan identifies that the number of cyclone shelters required for the protection of people living in the HRA in the year 2002 will be approximately 3,400. Given the number of existing cyclone shelters and those of which construction has been firmly pledged for some 900 shelters, the construction of 2,500 cyclone shelters is still required. The 6 Thanas in the Project Area require a total of 498 cyclone shelters and the 10 shelters planned under the Project represent only a tiny proportion (2%) of the overall requirement.

The Project is considered extremely important from the humanitarian point of view because it aims at protecting human lives. The implementation of the Project is deemed urgent as the construction of cyclone shelters is a viable method of preventing cyclone disasters which can possibly occur every year. Each of the cyclone shelters envisaged by the Project will have the important effect of protecting the lives of 1,650 people (a total of 16,500). The shelters will also serve as educational facilities during normal weather conditions, accommodating a total of 3,000 pupils, thus greatly contributing to the consolidation of education in Bangladesh.

Moreover, the implementation of the Project will promote local employment during the construction period and will encourage the settlement of inhabitants in the HRA due to the additional safety provided by the cyclone shelters, thus stimulating the development of agriculture, fisheries and stock raising. The consolidation of access roads, the availability of water supply and the planting of trees will all contribute to improving the social infrastructure for the further economic development and improvement of the living standard of local communities.

From an international point of view, the objective of the Project is in line with the objectives of the International Decade for Natural Disaster Reduction (IDNDR). Japan's positive commitment to the Project can be regarded as part of Japan's responsibility vis-a-vis the international community in view of the importance of implementing such projects in Bangladesh.

## 6.2 Conclusions

The provision of Japan's grant aid for the Project is deemed highly appropriate as the implementation of the Project is expected to have numerous positive effects as described in section 6.1 above, including the protection of human lives in the coastal area, the promotion of stable settlement because of improved safety and the revitalization of local economies.

The Project envisages the construction of a cyclone shelter at 10 sites instead of at the 40 sites originally requested by the Government of Bangladesh. Because of the suitability and necessity of such cyclone shelters as verified by this report, and also because of the urgent desire on the part of the Government of Bangladesh for the construction of cyclone shelters, the approval and implementation of a Basic Design Study on the remaining 30 sites is highly recommended.

A precondition of project implementation is that the various proposals made in the present report must be met for the smooth and effective implementation of the Project. The main proposals are outlined as follows:

### (1) Land Acquisition at Planned Sites

The Government of Bangladesh has already started the procedure to acquire land at the planned sites and the completion of the procedure by the end of fiscal 1993 (Bangladesh fiscal year) is necessary.

### (2) Establishment of Maintenance System

As the cyclone shelters will be used as educational facilities during normal weather conditions, the necessary budget for teachers' salaries and for the maintenance cost must be appropriated. In addition, the LGED must determine the maintenance system for each site as soon as possible through consultations with the PMED and ERD.

(3) Construction of Access Roads

As it has been decided the Government of Bangladesh will construct access roads where deemed necessary, the subject land must be acquired prior to the commencement of the Project-related construction work.

(4) Construction of Killas

Killas have not yet been constructed at 2 sites. These 2 killas must be completed as soon as possible.

(5) Completion of Ministerial Arrangements

The Government of Bangladesh is required to complete the necessary arrangements between its ministries and agencies for the smooth implementation of the Project in view of the Project's completion within the framework of the grant aid system of the Government of Japan in line with the planned implementation schedule.



## APPENDICES





## **APPENDIX 1**



## APPENDIX 1.1 LIST OF STUDY TEAM MEMBERS

### (1) First Site Survey Team

Masashi KONO	Team Leader Assistant Director Grant Aid Division, Economic Cooperation Bureau Ministry of Foreign Affairs
Masayuki WATANABE	Disaster Prevention Planner International Cooperation Specialist Institute for International Cooperation Japan International Cooperation Agency (JICA)
Senichi KIMURA	Project Coordinator Study Review and Coordination Division Grant Aid Study and Design Department Japan International Cooperation Agency (JICA)
Hisashi TAKADA	Architectural Planner Japan Engineering Consultants Co., Ltd.
Sumitada OKAMOTO	Development Planner Japan Engineering Consultants Co., Ltd.
Hiroshi YONEHARA	Project Planner Japan Engineering Consultants Co., Ltd.
Hiromi YAMAGAI	Natural Conditions Surveyor (A) Japan Engineering Consultants Co., Ltd.
Shunji HONBO	Natural Conditions Surveyor (B) Japan Engineering Consultants Co., Ltd.
Keiji KOBAYASHI	Construction Planner/Cost Estimator Japan Engineering Consultants Co., Ltd.

(2) Second Site Survey Team

Masayuki WATANABE	Team Leader/Disaster Prevention Planner International Cooperation Specialist Institute for International Cooperation Japan International Cooperation Agency (JICA)
Sumitada OKAMOTO	Development Planner Japan Engineering Consultants Co., Ltd.
Hiromi YAMAGAI	Natural Conditions Surveyor (A) Japan Engineering Consultants Co., Ltd.
Akira KADOYA	Natural Conditions Surveyor (B) Japan Engineering Consultants Co., Ltd.

(3) Draft Final Report Explanation Team

Masayuki WATANABE	Team Leader/Disaster Prevention Planner International Cooperation Specialist Institute for International Cooperation Japan International Cooperation Agency (JICA)
Kouji NOGUCHI	Grant Aid Cooperation Grant Aid Division, Economic Cooperation Bureau Ministry of Foreign Affairs
Ichirou MUKAI	Project Coordinator Second Basic Design Study Division Grant Aid Study and Design Department Japan International Cooperation Agency (JICA)
Hisashi TAKADA	Architectural Planner Japan Engineering Consultants Co., Ltd.
Sumitada OKAMOTO	Development Planner Japan Engineering Consultants Co., Ltd.

APPENDIX 1.2 SITE SURVEY SCHEDULES

(1) First Site Survey Schedule

No.	Date	Days of the Week	Place to stay	Study Items
1	Oct. 31	Sat.	NRT - BKK	Departure of 2 Consultants
2	Nov. 1	Sun.	BKK - DAC	Arrival of Consultants Courtesy Visit to and Discussions with JICA
3	Nov. 2	Mon.	DAC	Courtesy Visit to and Discussions with LGED Meeting with Boring and Survey Companies
4	Nov. 3	Tue.	DAC	Preparation for Site Survey
5	Nov. 4	Wed.	CXB	Move to Site and Site Survey (Site-No. 4)
6	Nov. 5	Thu.	CXB	Site Survey (Site-No. 3, -No. 5, -No. 6)
7	Nov. 6	(Fri.)	CTG	Site Survey (Site-No. 1)
8	Nov. 7	Sat.	NKL	Site Survey (Site-No. 7, -No. 10)
9	Nov. 8	Sun.	DAC	Move to DAC
10	Nov. 9	Mon.	DAC	Arrangement of Survey Results
11	Nov. 10	Tue.	TYO - BKK	Departure of 4 Consultants
			DAC	Selection of Detailed Survey Sites
12	Nov. 11	Wed.	BKK - DAC	Arrival of Consultants
			DAC	Analysis of Selection Results
				Courtesy Visit of Embassy of Japan (EOJ) and JICA
13	Nov. 12	Thu.	DAC	Discussions with LGED, Courtesy Visit to UNDP, WB Discussions with MCSP Team
14	Nov. 13	(Fri.)	NKL	Move to Site
15	Nov. 14	Sat.	TYO - BKK	Departure of Mr. Kimura
			NKL	Site Survey (Site-No. 7, -No. 10)
16	Nov. 15	Sun.	BKK - DAC	Arrival of Mr. Kimura, Discussions with JICA
			CXB	Site Survey (Site-No. 4, -No. 5)
17	Nov. 16	Mon.	CXB	Move to Site (Mr. Kimura)
			DAC	Move to DAC (4 consultants)
18	Nov. 17	Tue.	TYO - BKK	Departure of Team Leader and Mr. Watanabe
			CXB	Site Survey (Site-No. 4, -No. 5) (Mr. Kimura & Consul.)
			DAC	Data Collection and Analysis
19	Nov. 18	Wed.	BKK - DAC	Arrival of Team Leader and Mr. Watanabe
			DAC	Move to DAC (Mr. Kimura)
				Visit to JICA, EOJ, Meeting
20	Nov. 19	Thu.	DAC	Discussions with UNDP, EEC and MCSP Team
			CXB	Move to Site (Mr. Watanabe)
21	Nov. 20	(Fri.)	DAC	Inner Meeting
			CXB	Site Survey (Site-No. 4, -No. 5) (Mr. Watanabe & Con.)
22	Nov. 21	Sat.	DAC	Discussions with ERD, LGED
			DAC	Move to DAC (Mr. Watanabe and Consul.)

## (1) First Site Survey Schedule Continued

No.	Date	Days of the Week	Place to stay	Study Items	
23	Nov. 22	Sun.	DAC	Discussions with LGED, WB, and Swiss Mission	
24	Nov. 23	Mon.	DAC	Discussions with LGED, Attend Joint Meeting	
25	Nov. 24	Tue.	DAC	Signing of Minutes of Discussions, Report to EOJ	
			DAC - BKK	Departure of Mr. Watanabe	
26	Nov. 25	Wed.	DAC - BKK	Departure of Team Leader and 2 Consultants	
			BKK - TYO	Return of Mr. Watanabe	
			DAC	Data Collection	Detailed Survey
27	Nov. 26	Thu.	BKK - TYO	Return of Team Leader and 2 Consultants	
			DAC	Discussions with LGED	Detailed Survey
28	Nov. 27	(Fri.)	DAC	Data Collection	-ditto-
29	Nov. 28	Sat.	DAC - NKL	Move to Site	-ditto-
30	Nov. 29	Sun.	NKL - HTY	Move to Site	-ditto-
31	Nov. 30	Mon.	HTY	Site Survey (Site-No. 9)	-ditto-
32	Dec. 1	Tue.	CTG	Move to Banskhali Area	-ditto-
33	Dec. 2	Wed.	CTG	Additional Site Survey	Move to DAC
34	Dec. 3	Thu.	DAC	Move to DAC	Arrangement of Data
35	Dec. 4	(Fri.)	DAC	Arrangement of Results	-ditto-
36	Dec. 5	Sat.	DAC	Discussions with LGED	Detailed Survey
37	Dec. 6	Sun.	DAC	-ditto-	-ditto-
38	Dec. 7	Mon.	DAC	Report to JICA and EOJ	
39	Dec. 6	Tue.	DAC - BKK	Departure of 4 Consultants	
40	Dec. 8	Mon.	BKK - TYO	Return of 4 Consultants	
TYO: Tokyo    BKK: Bangkok    DAC: Dhaka    CTG: Chittagong    CXB: Cox's Bazar NKL: Noakhali    HTY: Hatiya					

## (2) Second Site Survey Schedule

No.	Date	Days of the Week	Place to stay	Study Items
1	Jan. 21	Thu.	TYO - BKK	Departure of 2 Consultants
2	Jan. 22	(Fri.)	BKK - DAC	Arrival of Consultants, Receive Cost Estimates
3	Jan. 23	Sat	DAC	Visit LGED, Signing Contracts on Detailed Surveys
4	Jan. 24	Sun	NKL	Courtesy Visit to EOJ and JICA, Move to Site
5	Jan. 25	Mon.	HTY	Move to Site
6	Jan. 26	Tue.	HTY	Site Confirmation (Site-No. 8, -No. 9)
7	Jan. 27	Wed.	CTG	Move to CTG
8	Jan. 28	Thu.	TYO - BKK	Departure of One consultant
			CTG	Site Confirmation (Site-No. 1, -No. 2)
9	Jan. 29	(Fri.)	BKK - DAC	Arrival of Consultant
			CXB	Site Confirmation (Site-No. 3)
10	Jan. 30	Sat.	DAC	Courtesy Visit to LGED, Attend Seminar of MCSP
			CXB	Site Confirmation (Site-No. 6)
11	Jan. 31	Sun.	DAC	Attend Seminar
				Move to DAC
12	Feb. 1	Mon.	DAC	Discussions with LGED
13	Feb. 2	Tue.	TYO - BKK	Departure of Team Leader (Mr. Watanabe)
			DAC	Courtesy Visit to and Discussions with PMED
				Detailed Survey
14	Feb. 3	Wed.	BKK - DAC	Arrival of Team Leader, Discussions with JICA, EOJ
15	Feb. 4	Thu.	DAC	Discussions with LGED, ERD
16	Feb. 5	(Fri.)	CTG	Move to Site
17	Feb. 6	Sat.	CTG	Site Survey (Site-No. 1, -No. 2)
18	Feb. 7	Sun.	DAC	Move to DAC, Discussions with LGED
19	Feb. 8	(Mon.)	DAC	Inner Works (Arrangement of M/D)
20	Feb. 9	Tue.	DAC	Attend Joint Meeting
21	Feb. 10	Wed.	DAC - BKK	Report to EOJ and JICA, Departure of Team Leader and One Consultant
22	Feb. 11	Thu.	BKK - TYO	Return of Team Leader and Consul.
23	Feb. 12	(Fri.)	Site	-ditto-
24	Feb. 13	Sat.	Site	-ditto-
25	Feb. 14	Sun.	Site	-ditto-
26	Feb. 15	Mon.	Site	-ditto-
27	Feb. 16	Tue.	Site	-ditto-
28	Feb. 17	Wed.	Site	Report to LGED, EOJ, JICA
29	Feb. 18	Thu.	DAC-BKK	Departure of 2 Consultants
30	Feb. 19	(Fri.)	BKK - TYO	Return of 2 Consultants



(3) Draft Final Report Explanation Schedule

No.	Date	Days of the Week	Place to stay	Study Items	
1	Apr. 3	Sat.	TYO - BKK	Departure of Team Leader (Mr. Watanabe)	
2	Apr. 4	Sun.	BKK-DAC	Arrival of Officials and Consul.	Discussions with JICA
			KAT - DAC	Arrival of Mr. Noguchi	
3	Apr. 5	Mon.	DAC	Discussions with EOJ, Attend Joint Meeting (ERD)	
4	Apr. 6	Tue.	DAC	Discussions with P.C.	Explanation of D.F.R. and Discussions with LGED
			DAC	Data Collection (BDRCS)	
5	Apr. 7	Wed.	DAC	Explanation of D.F.R. and Discussions with PMED	
6	Apr. 8	Thu.	DAC	Discussions on M/D, and came to agreement	
7	Apr. 9	(Fri. )	DAC - NKL	Move to Site (Team Leader and 2 Consul). Site Survey	
			DAC	Visit the Model Town Project (Mr. Mukai)	
			DAC - BKK	Departure of Mr. Noguchi	
8	Apr. 10	Sat.	-- TYO	Return of Mr. Noguchi	
			NKL - DAC	Move to DAC (Team Leader and 2 Consul), Visit ERD	
			DAC - BKK	Departure of Mr. Mukai	
9	Apr. 11	Sun.	DAC - BKK	Signing of M/D, Report to EOJ Departure of Team Leader and 2 Consultants	
10	Apr. 12	Mon.	-- TYO	Return of Team Leader and 2 Consultants	

## APPENDIX 1.3 LIST OF INTERVIEWEES

### (1) Bangladesh Side

#### 1) Economic Relation Division (ERD)

Dr. Sadaad Husain	Additional Secretary
Mr. Dewan Zakir Hussain	Deputy Secretary
Mr. Md. Rafiqul Islam	Assistant Chief

#### 2) Planning Commission

Mr. Mir Mahfuzul Haque	Joint Chief (Acting)
Mr. Omar Hadi	Division Chief

#### 3) Ministry of Finance

Ms. Durafshan H. Chowdhury	Senior Assistant Secretary
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#### 4) National Board of Revenue

Mr. Md. Johrul Hoque	First Secretary
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#### 5) Primary and Mass Education Division (PMED)

Mr. Kazi Rakibuddin Ahmed	Additional Secretary In-charge
Mr. A. K. M. Anisur Rahman	Joint Secretary
Mr. Mohini Mohan Chakrabarty	Deputy Secretary
Mr. Abul Hussan Chowdhury	Deputy Secretary
Dr. Md. Delwar Hossain	Deputy Chief

#### 6) Ministry of Local Government, Rural Development and Cooperatives (MLGRD&C)

Mr. Mushfiqur Rahman	Secretary
Mr. M. A. Matin	Deputy Secretary
Mr. Serajul Islam	Assistant Chief

#### 7) Local Government Engineering Department (LGED)

[Dhaka H.Q. ]

Mr. Qamrul Islam Siddique	Chief Engineer
Mr. Md. Ataullah Buiya	Superintending Engineer
Mr. M. M. H. Chowdhury	Superintending Engineer
Mr. Saroj Kumar Sarkar	Executive Engineer
Mr. Iftekhar Ahmed	Executive Engineer
Mr. A. B. M. Nazrul Islam	Senior Research & Development Specialist

APPENDIX 1.3 LIST OF INTERVIEWEES CONTINUED\*

Mr. A. K. Farhad Ahmed	Assistant Engineer
Mr. Nur Nabi	Assistant Engineer
Mr. S. M. Salim	Assistant Engineer
Ms. Nurun Nahar Begum	Assistant Engineer
Ms. Nasim Banu	Assistant Engineer

[Noakhali District]

Mr. Golam Mostafa Patwary	Executive Engineer
Mr. Mihir Chakrabarty	Thana Engineer, Companiganj
Mr. A. K. M. Maniruzzaman	Thana Engineer, Sadar Thana
Mr. Habibul Aziz	Thana Engineer, Hatiya

[Chittagong District]

Mr. Md. Wahidur Rahman	Executive Engineer
Mr. Sarwar Ahmed	Thana Engineer, Banskhal

[Cox's Bazar District]

Mr. Kazi A. B. Siddique	Executive Engineer
Mr. Md. Mostafa Kamal	Thana Engineer, Chakoria
Mr. Nazmul Hossain	Thana Engineer, Moheskhali

8) UNDP

Mr. Putu M. Kamayana	Assistant Resident Representative
Mr. Mohammad Iqbal Karim	Programme Officer

9) World Bank

Mr. Saeed Rana	Head Agriculture Unit
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10) EEC

Mr. Nick Roberts	Project Coordinator
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11) Swiss Development Corporation (SDC)

Mr. Henri Francois Morand	First Secretary
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## APPENDIX 1.3 LIST OF INTERVIEWEES CONTINUED\*

### 12) Multipurpose Cyclone Shelter Programme Study Team

Dr. J. R. Choudhury	Team Leader, Professor
Dr. Shamim Z. Bosunia	Professor
Dr. A. M. Hoque	Professor
Mr. Q. A. S. M. Zakaria Islam	Sociologist

### 13) Bangladesh Red Crescent Society (BDRCS)

Mr. Masaaki Ohashi	Deputy Head of Delegation/ Development Delegate for CDP
Mr. Tomoatsu Kayano	Japanese Red Cross Society Delegate in Bangladesh
Mr. Kurt Granberg	Development Delegate
Mr. M. R. Sarkar	Project Engineer
Mr. S. M. Rafiqul Islam	Deputy Director, Noakhali

### (2) Japanese Side

#### 1) Embassy of Japan in Bangladesh

Mr. Yasuyoshi Ichihashi	Minister
M. Takeshi Ohta	First Secretary
Mr. Kenichi Yokoyama	Second Secretary

#### 2) JICA Bangladesh Office

Mr. Takeshi Imazu	Resident Representative
Mr. Takeshi Naruse	Deputy Resident Representative
Mr. Yuuki Aratsu	Deputy Resident Representative



**APPENDIX 1.4 MINUTES OF DISCUSSIONS**

**(1) First Site Survey**



MINUTES OF DISCUSSIONS

THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR THE CONSTRUCTION OF CYCLONE SHELTERS  
IN  
THE PEOPLE'S REPUBLIC OF BANGLADESH

In response to the request of the Government of People's Republic of Bangladesh and based on the results of the Preliminary Study on the Project for the Construction of Cyclone Shelters (hereinafter referred to as "the Project") Japan International Cooperation Agency (JICA) decided to conduct the Basic Design Study and sent the study team, headed by Mr. Masashi Kono, Assistant Director, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, from 1st November to 8th December, 1992. The study team held discussions with the officials concerned of the Government of Bangladesh and conducted a field survey at the Project area.

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

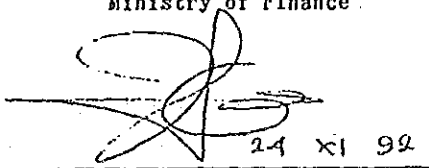
Dhaka, 24th November, 1992



Mr. Masashi Kono  
Leader, The Basic Design Study Team  
J I C A

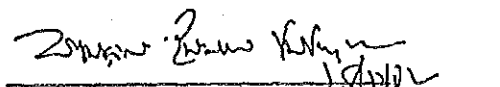


Mr. Dewan Zakir Hussain  
Deputy Secretary  
Economic Relations Division  
Ministry of Finance



24 XI 92

Mr. H. A. Matin  
Deputy Secretary  
Local Government Division  
Ministry of Local Government,  
Rural Development and Cooperatives



Mr. Quamrul Islam Siddique  
Chief Engineer  
Local Government Engineering  
Department



## ATTACHMENT

### 1. Objective

The objective of the Project is to construct cyclone shelters which would protect people of the project area at the time of cyclone. The shelter should be used as a primary school in usual time.

### 2. Project sites

The project sites finally requested by the Bangladesh side in this Basic Design Study are located in following ten area which are indicated in the map attached herewith as Annex I :

No.	District	Thana
1) 9880980	Chittagong	Banskhali
2) 9880982	Chittagong	Banskhali
3) 9900182	Cox's Bazar	Chakoria
4) 9900183	Cox's Bazar	Chakoria
5) 9900185	Cox's Bazar	Chakoria
6) 9900485	Cox's Bazar	Moheskhal
7) 9840381	Noakhali	Companiganj
8) 9840480	Noakhali	Hatiya
9) 9840481	Noakhali	Hatiya
10) 9840680	Noakhali	Noakhali-s

### 3. Executing agency

Local Government Engineering Department is responsible for the administration and execution of the Project including management and maintenance of the facilities constructed under the Project.

### 4. Components of the shelter requested by the Government of Bangladesh

After discussions with the Basic Design Study Team, the Bangladesh side requested the following components in the Project;

- (1) Each shelter will be comprised of three classrooms, one teacher's room, one store room, and two toilet rooms.
- (2) Water supply facilities (a tube well and a manual pump) will be provided for each shelter.

Note: Access roads will be constructed, if necessary, by Local Government Engineering Department.

## 5. Japan's Grant Aid System

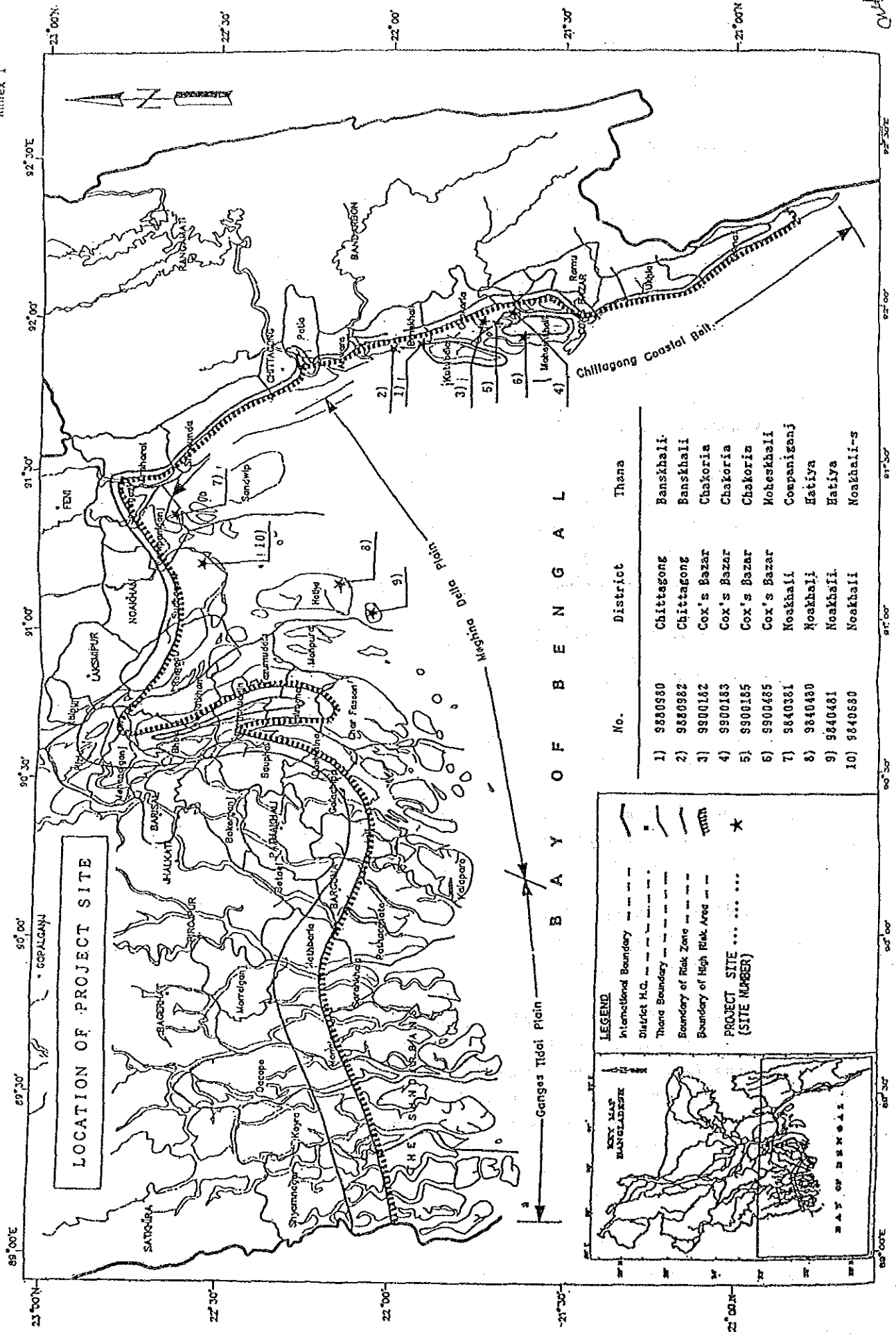
- (1) The Bangladesh side has understood Japanese Grant Aid system explained by the team.
- (2) The Bangladesh side will take necessary measures for the smooth implementation of the Project in case the Government of Japan decides to extend the Grant Aid for the Project.

## 6. Schedule of the study

- (1) The consultants proceeds to further studies in Bangladesh until 8th December, 1992.
- (2) JICA will prepare the draft final report in English and dispatch a mission in order to explain its contents in February, 1993.
- (3) In case that the contents of the report is accepted in principle by the Bangladesh side, JICA will complete the final report and send it to the Government of Bangladesh.

## 7. Others

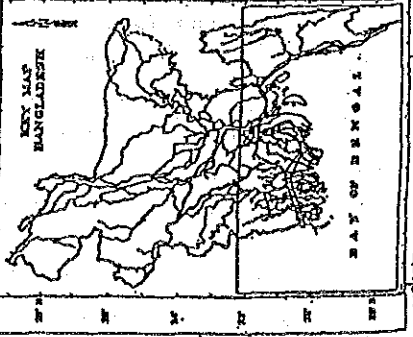
- (1) The Bangladesh side expressed the strong hope that the future cyclone shelter projects would be favourably considered by the Government of Japan.
- (2) The Bangladesh side assured the Japanese side that the land acquisition for the Project sites will be completed before the construction.
- (3) The Bangladesh side assured the Japanese side that the necessary arrangements will be made including the assignment of teachers and staff for the purpose of managing and maintaining the shelters as primary schools in consultation with Primary and Mass Education Division of Prime Minister's Office.



LOCATION OF PROJECT SITE

**LEGEND**

- International Boundary ————
- District H.C. - - - - -
- Thana Boundary - - - - -
- Boundary of Risk Zone - - - - -
- Boundary of High Risk Area - - - - -
- PROJECT SITE ... (SITE NUMBER) \*



No.	District	Thana
1) 9880980	Chittagong	Banskhali.
2) 9880982	Chittagong	Banskhali
3) 9880182	Cox's Bazar	Chakoria
4) 9880183	Cox's Bazar	Chakoria
5) 9880185	Cox's Bazar	Chakoria
6) 9880485	Cox's Bazar	Moheskhal
7) 9840381	Noakhali	Companiganj
8) 9840480	Noakhali	Katiya
9) 9840481	Noakhali	Katiya
10) 9840680	Noakhali	Noakhali-s

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## (2) Draft Final Report Explanation



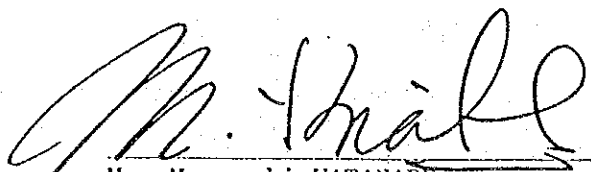
MINUTES OF DISCUSSIONS  
ON  
THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR THE CONSTRUCTION OF MULTIPURPOSE CYCLONE SHELTERS  
IN  
THE PEOPLE'S REPUBLIC OF BANGLADESH

From the 1st November to the 8th December, 1992, and from the 22nd January to the 18th February, 1993, the Japan International Cooperation Agency (JICA) dispatched two Basic Design Study Teams on the Project for the construction of multipurpose cyclone shelters (hereinafter referred to as "the Project") to Bangladesh, 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 the Bangladesh side on the components of the Draft Report, JICA sent to Bangladesh a Draft Study Report Explanation Team, headed by Mr. Masayuki WATANABE, Development Specialist in the field of Disaster Prevention, JICA, and scheduled to stay in the country from the 4th to the 11th of April, 1993.

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

Dhaka, the 8th of April, 1993



Mr. Masayuki WATANABE  
Team Leader,  
Draft Report Explanation Team,  
JICA



Dr. Sadaat Husain  
Additional Secretary,  
Economic Relations Division,  
Government of Bangladesh

## A T T A C H M E N T

### 1. CONTENTS OF THE DRAFT STUDY REPORT

The Government of Bangladesh has agreed the Site Location, Design and Implementation Schedule (annexed).

### 2. JAPAN'S GRANT AID SYSTEM

- (1) The Government of Bangladesh has understood the system of Japan's Grant Aid explained by the team.
- (2) The Government of Bangladesh has ensured to take the necessary measures described in Annex-1, for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

### 3. CONSTRUCTION OF KILLAS

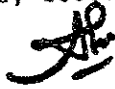
The Government of Bangladesh has ensured to complete the construction of the KILLAs in the proposed shelter sites before construction of proposed shelters starts.

### 4. MAINTENANCE AND OPERATION OF THE SHELTER IN ORDINARY CONDITION

- (1) The Local Government Engineering Department will be responsible for the maintenance practice of all the shelters under the Project, with mutual consultation with the user organization.
- (2) The user organizations of the shelters of the Project under the normal condition as per in Annex-2.
- (3) It is also agreed that such user organizations of the shelters have to open the shelters for those who are escaping from cyclone attacks.

### 5. FURTHER SCHEDULE

The Team will make the Final Report in accordance with the confirmed items, and send it to the Government of Bangladesh by June, 1993.

1/2. 

ANNEX-1      NECESSARY MEASURES TO BE TAKEN BY BANGLADESH SIDE

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

1. To secure the site for the Project.
2. To clear and level the Project site prior to commencement of construction, if necessary.
3. To provide proper lands for access roads for constructing the shelters.
4. To remove the existing primary school building, to build a temporary school building prior to the construction of proposed shelter, to maintain it for the time the construction work is done for the purpose to keep the class on, and remove it after the completion of the shelter in the site No. 9900485.
5. To bear commissions to the Japanese foreign exchange bank for its banking services, based upon the existing Banking Arrangement system.
6. To ensure payment of necessary taxes and to take necessary procedures for customs clearance of the materials and equipment for the Project at the port of disembarkation.
7. In order to exempt Japanese nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Bangladesh with respect to the supply of the products and services under the verified contracts, the cost of duties, internal taxes and other fiscal levies to be imposed under the Bangladesh Regulations shall be borne by the relevant Ministry/Agency concerned with the Project for which necessary budget provision shall be made by them.
8. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract/s such facilities as may be necessary for their entry into Bangladesh and stay therein for the performance of their work.
9. To provide necessary permissions, licences and other authorizations for carrying out the Project, if necessary.
10. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Grant Aid.
11. To bear all the expenses, other than those to be borne by the Grant Aid.

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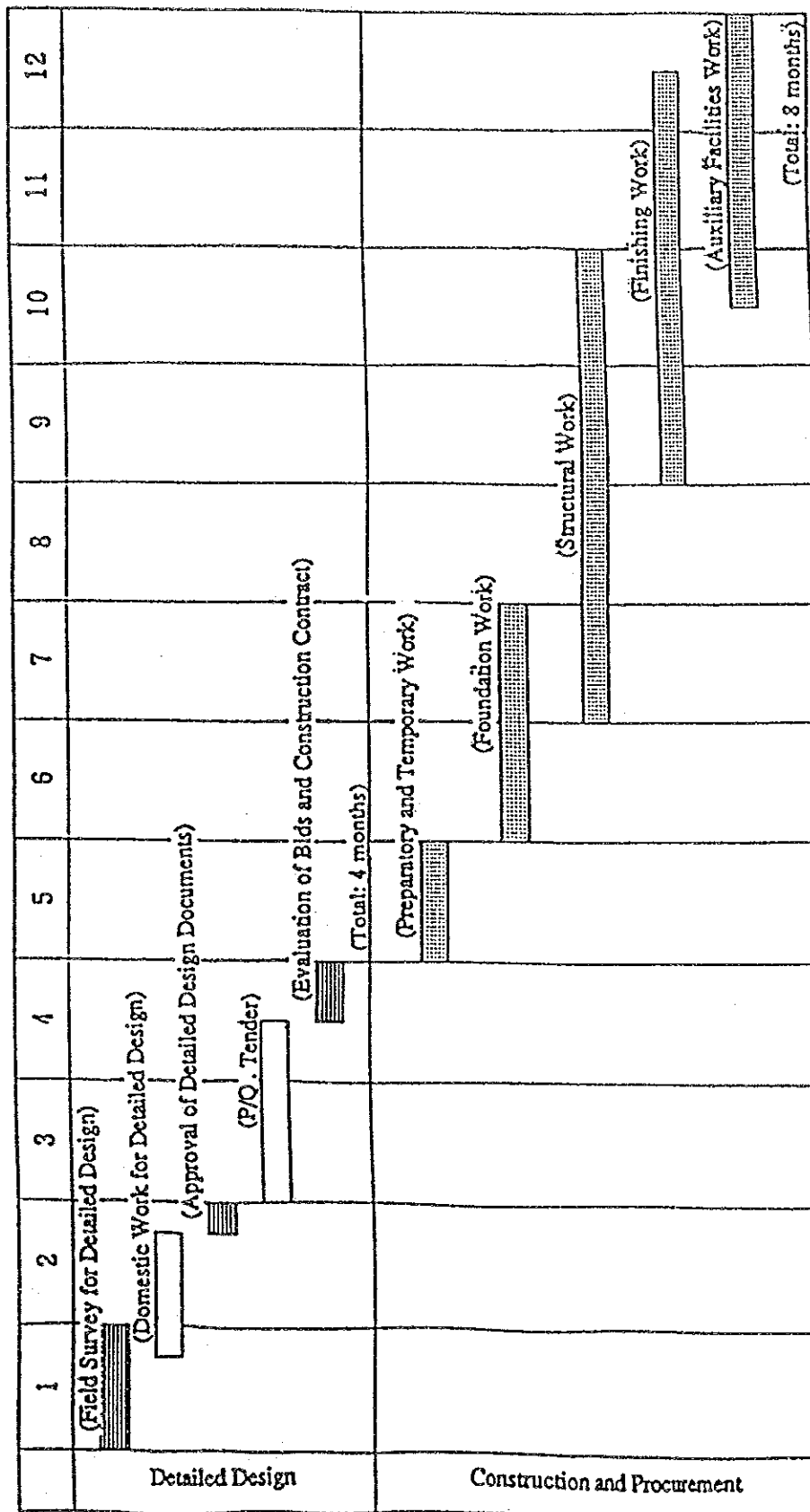


## ANNEX-2

## OPERATION AND MAINTENANCE OF THE SHELTERS IN ORDINARY CONDITION

No.	District	Thana	Killa	Proposed Use under Ordinary Condition	User Organization	
1)	9880980	Chittagong	Banskhali	exist	High School	High School Managing Committee
2)	9880982	Chittagong	Banskhali	to be constructed	Madrasha	Madrasha Managing Committee
3)	9900182	Cox's Bazar	Chakoria	to be constructed	Primary School	Union Parishad
4)	9900183	Cox's Bazar	Chakoria	to be constructed	Primary School	Union Parishad
5)	9900185	Cox's Bazar	Chakoria	to be constructed	Primary School	Union Parishad
6)	9900485	Cox's Bazar	Moheskhal	to be constructed	Governmental Primary School	Primary & Mass Education Division
7)	9840381	Noakhali	Companiganj	exist	Community center	Union Parishad
8)	9840480	Noakhali	Hatiya	to be constructed	Governmental Primary School	Primary & Mass Education Division
9)	9840481	Noakhali	Hatiya	exist	Primary School	School Managing Committee
10)	9840680	Noakhali	Noakhali-s	exist	Primary School	Union Parishad

*Jm* *AP.*



*Handwritten signature/initials*

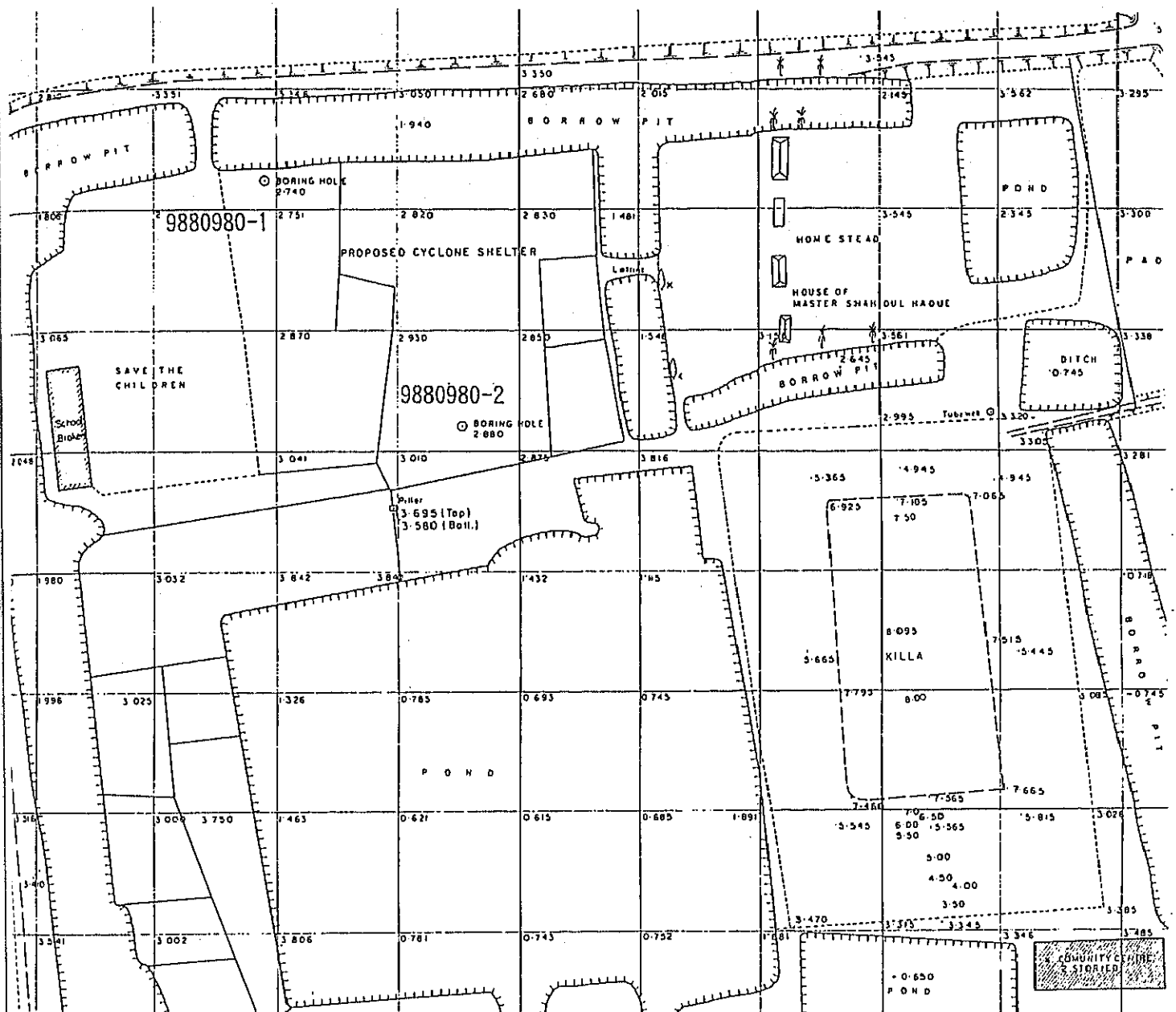


## **APPENDIX 2**



## APPENDIX 2.1 LOCATION OF BOREHOLE

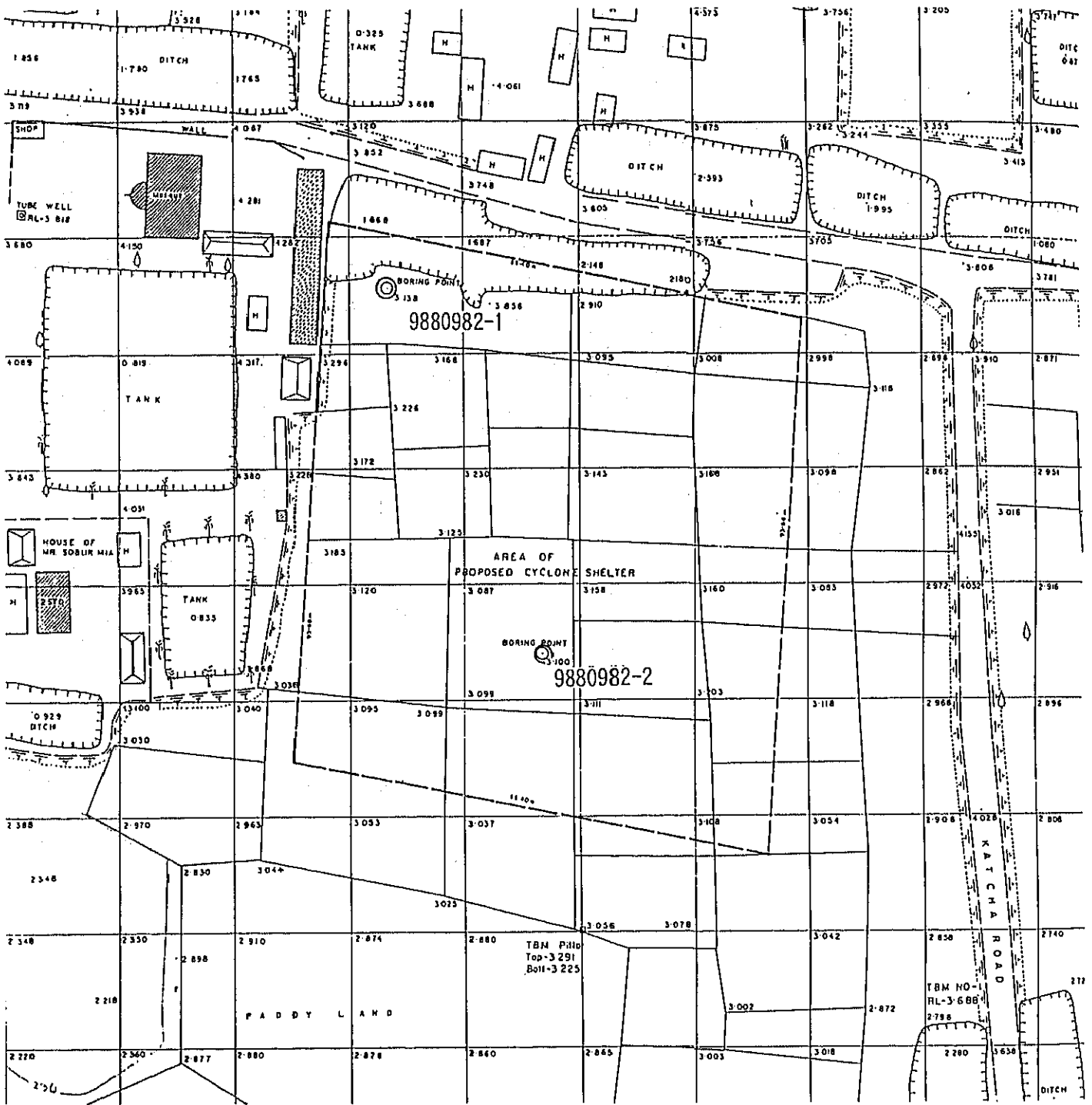




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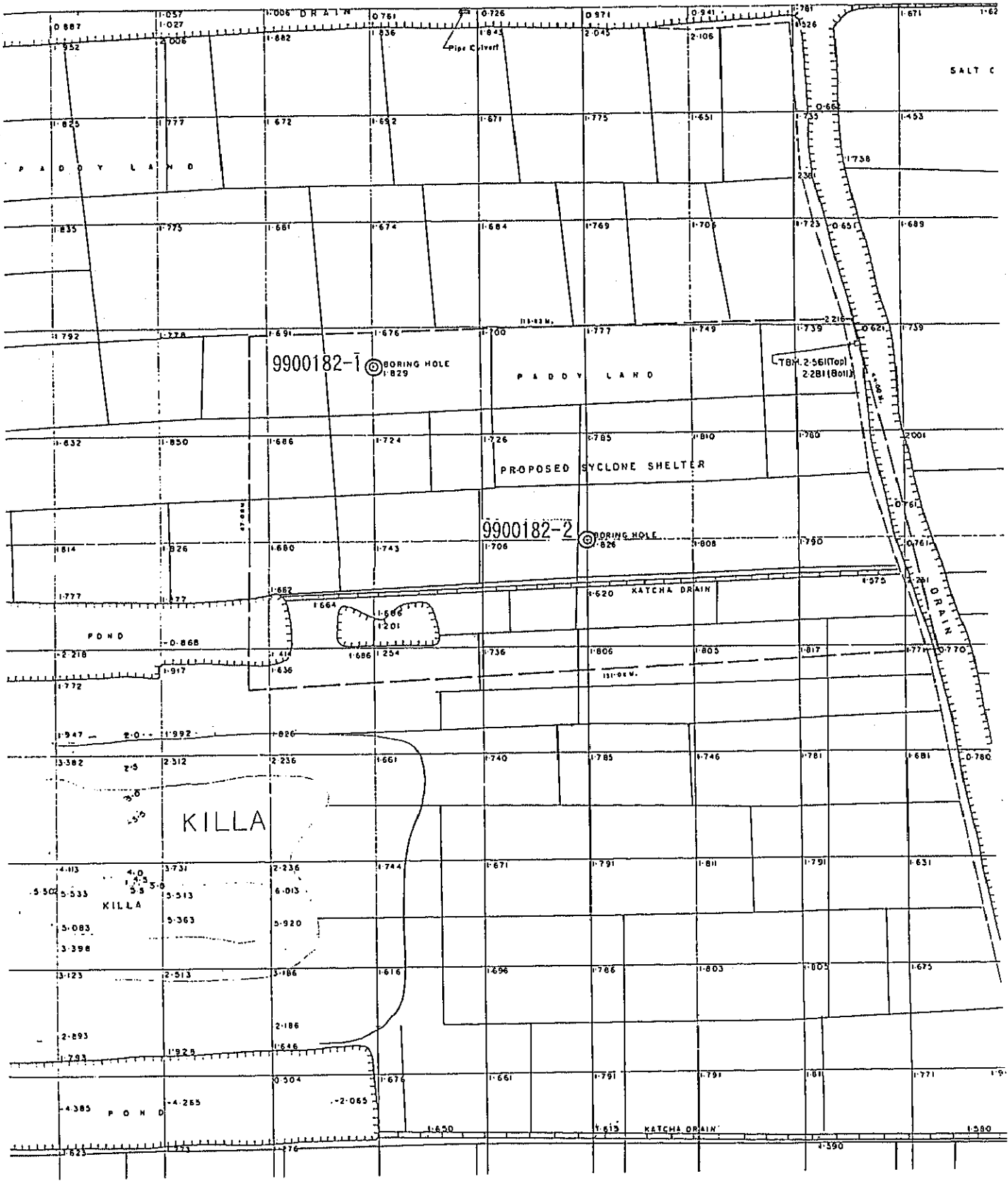
LOCATION OF BOREHOLES(9880980)





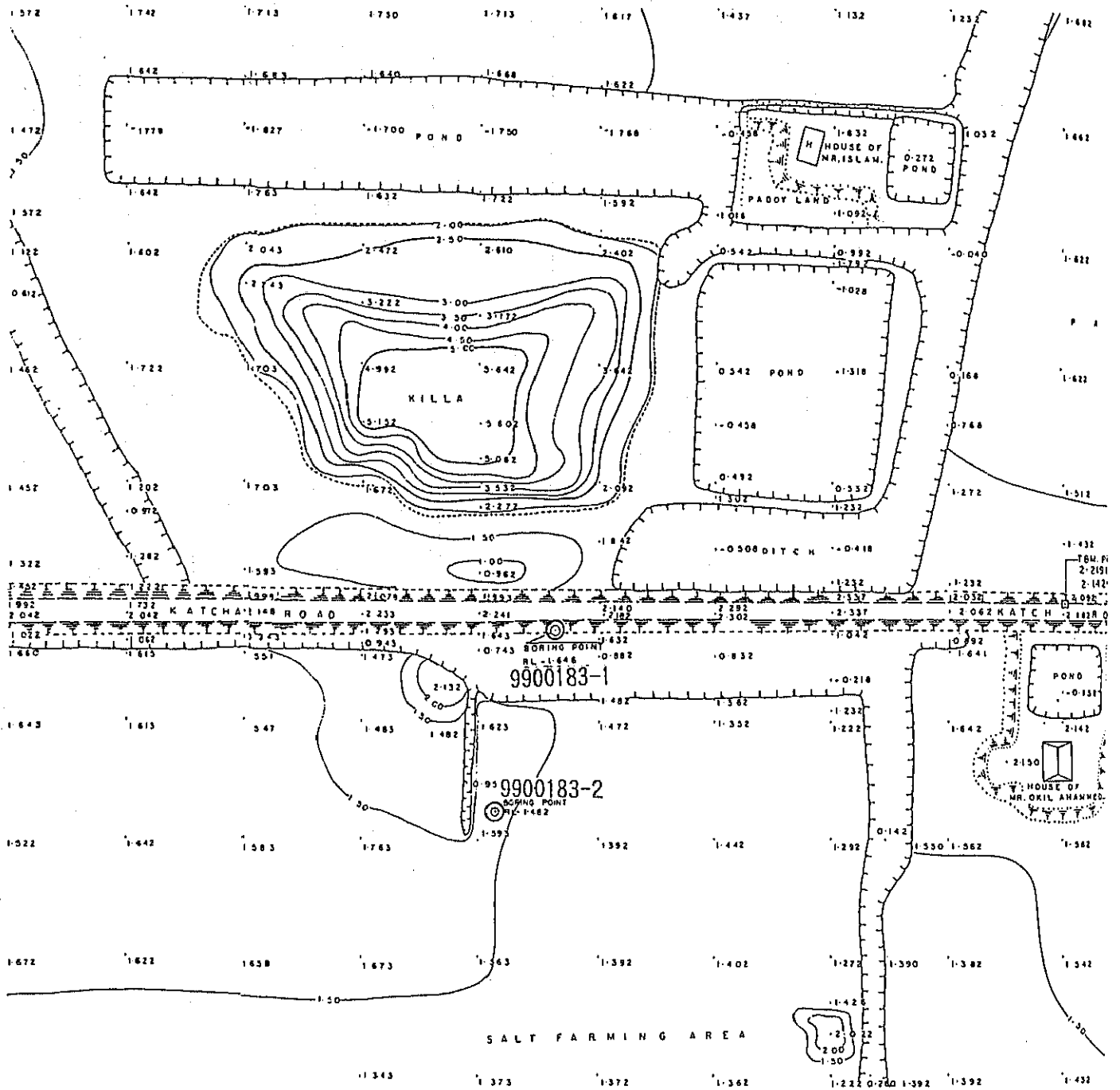
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LOCATION OF BOREHOLES(9880982)



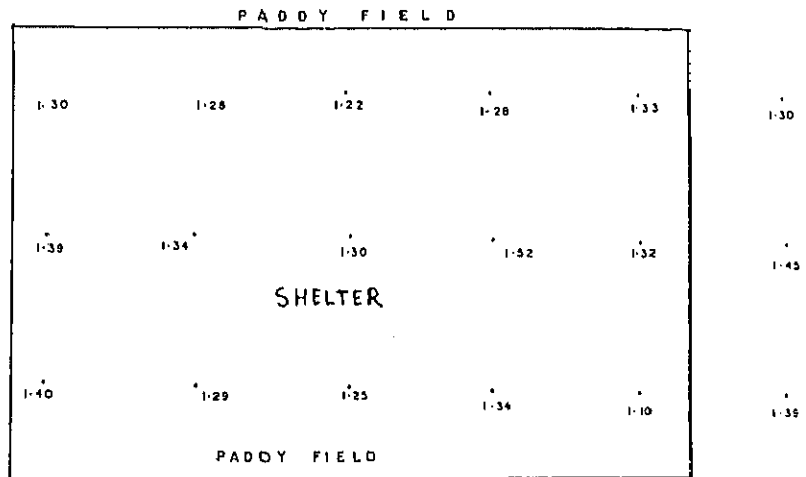
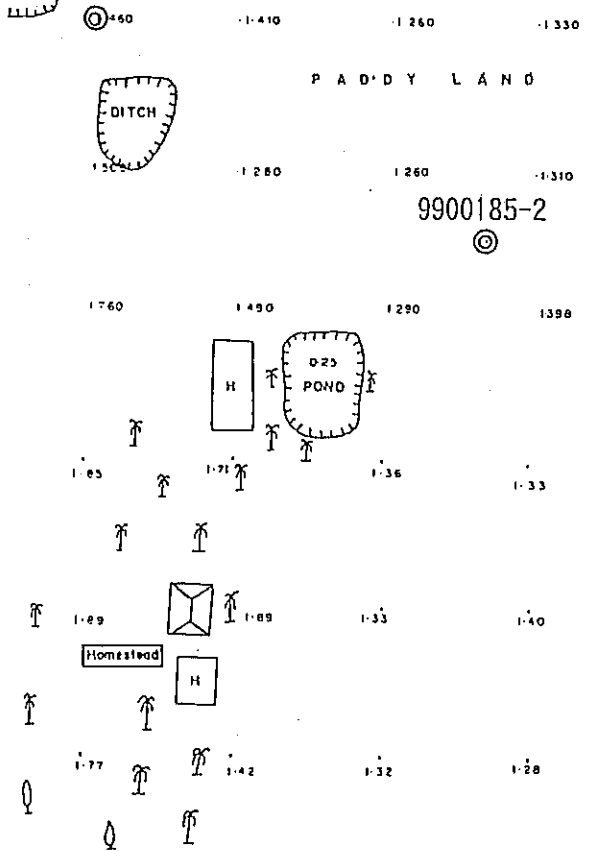
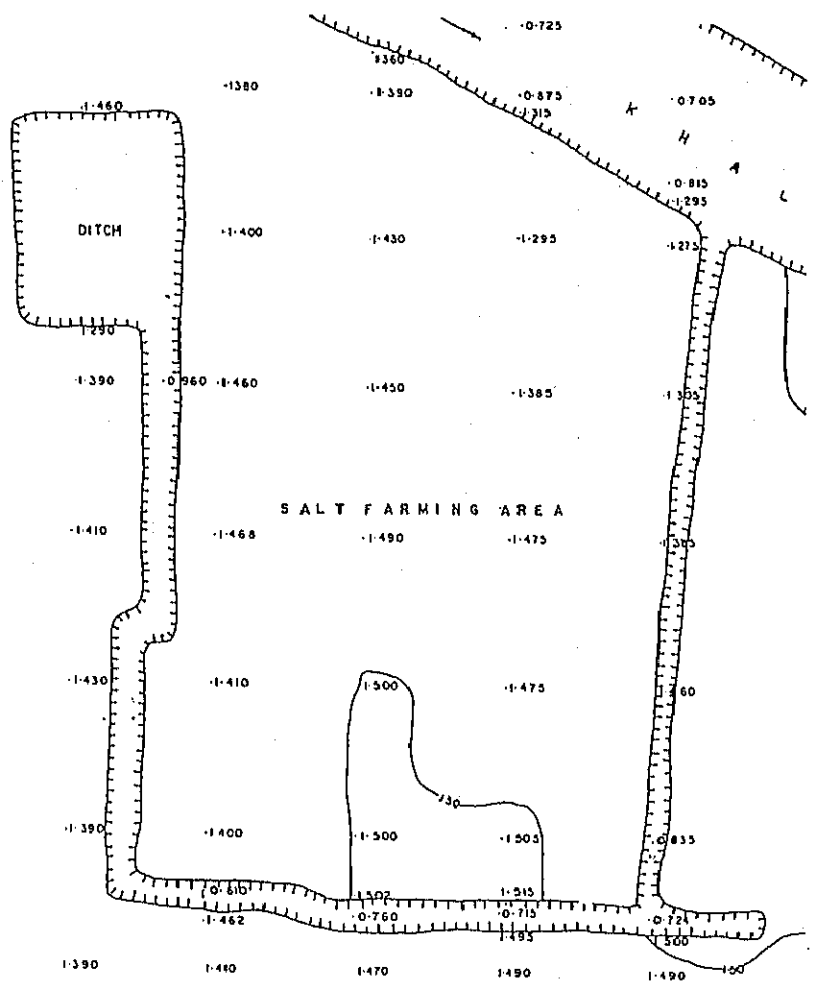
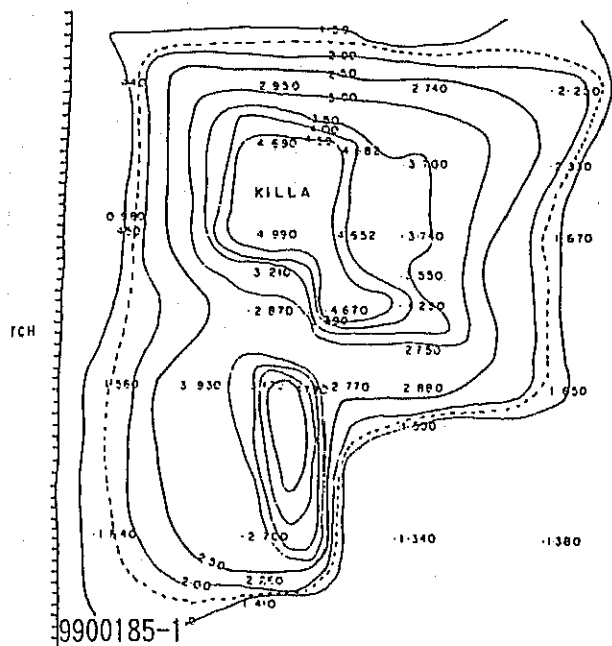
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LOCATION OF BOREHOLES(9900182)



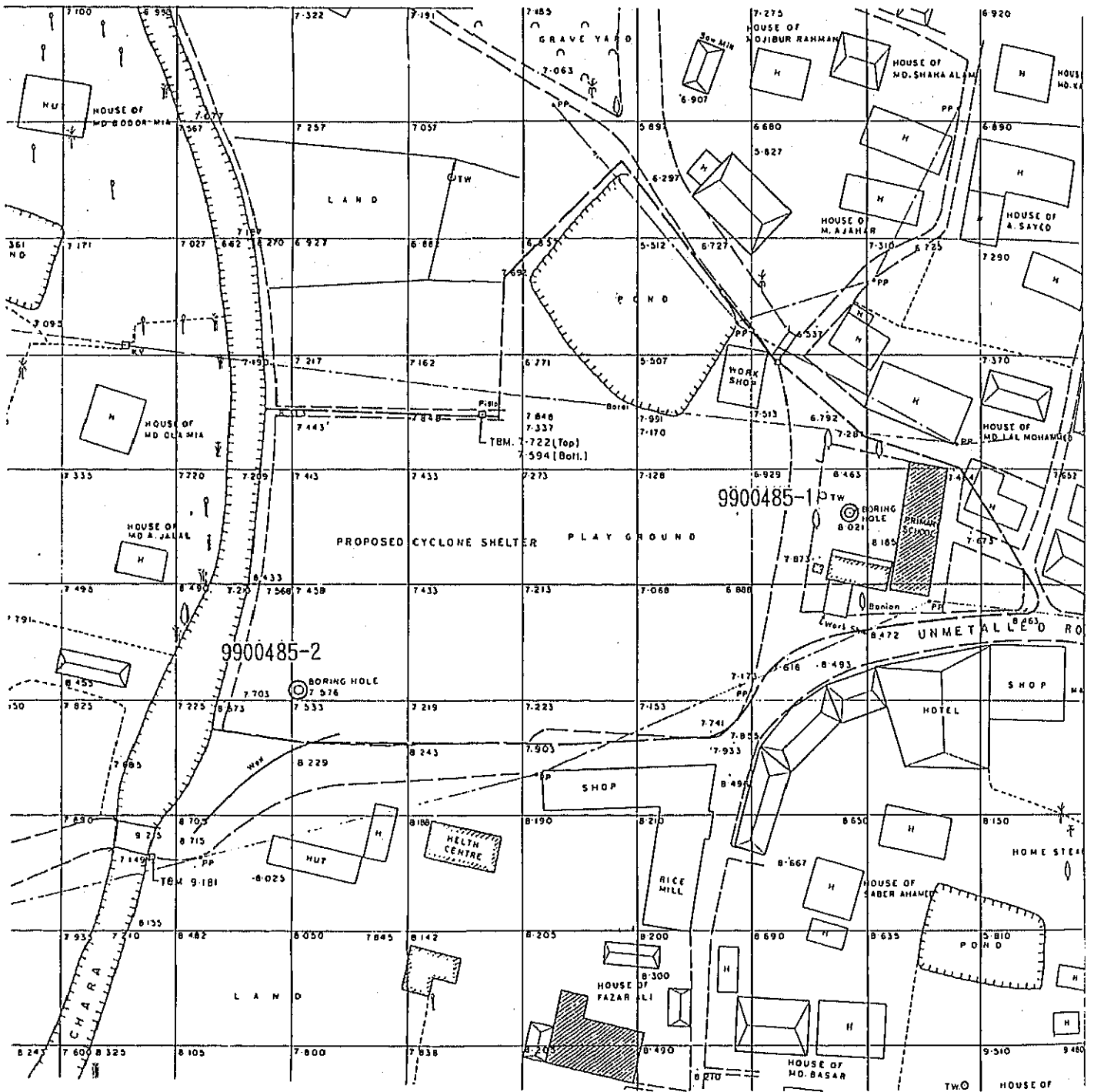
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LOCATION OF BOREHOLES(9900183)



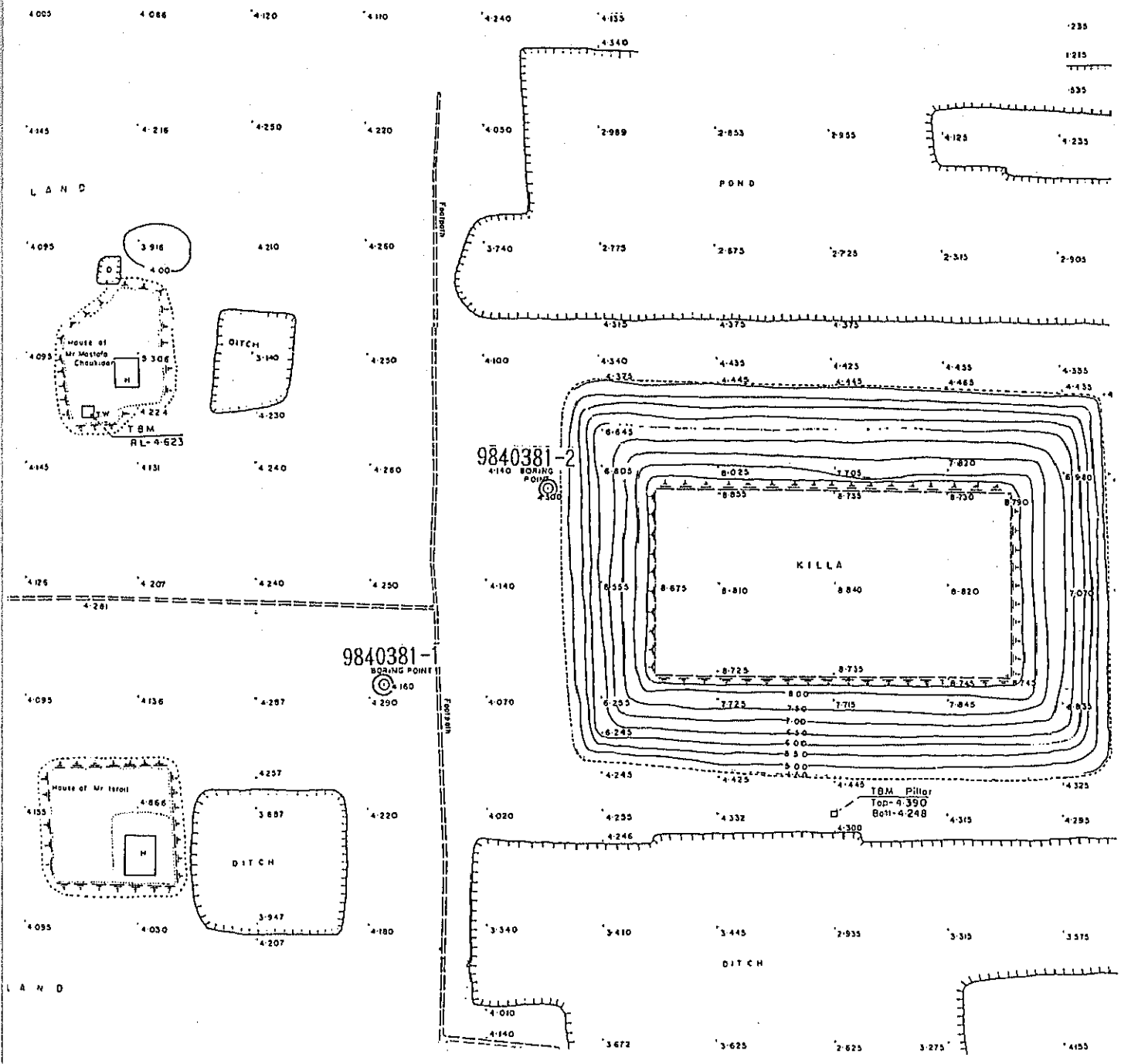
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LOCATION OF BOREHOLES (9900185)



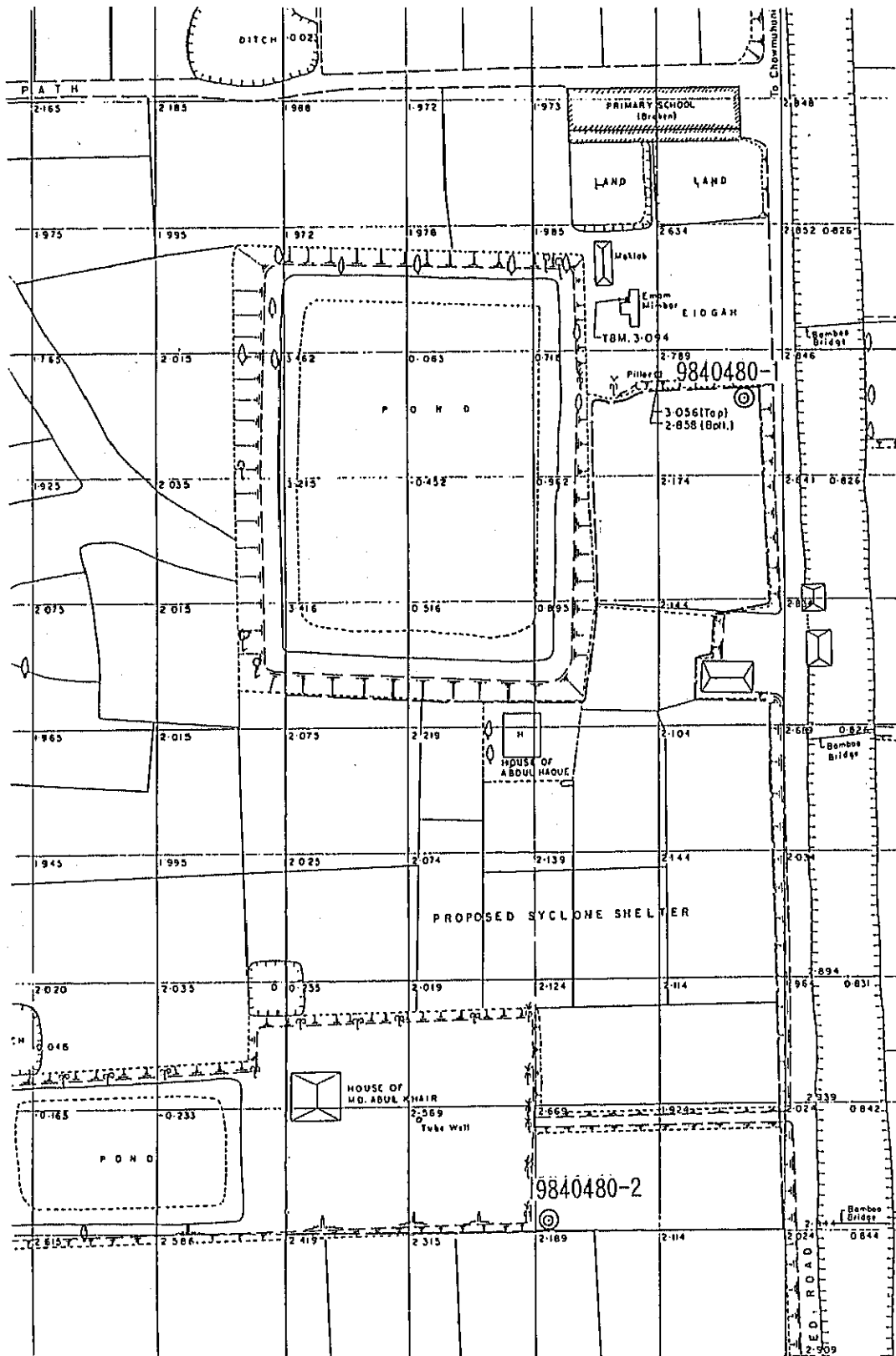
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LOCATION OF BOREHOLES(9900485)



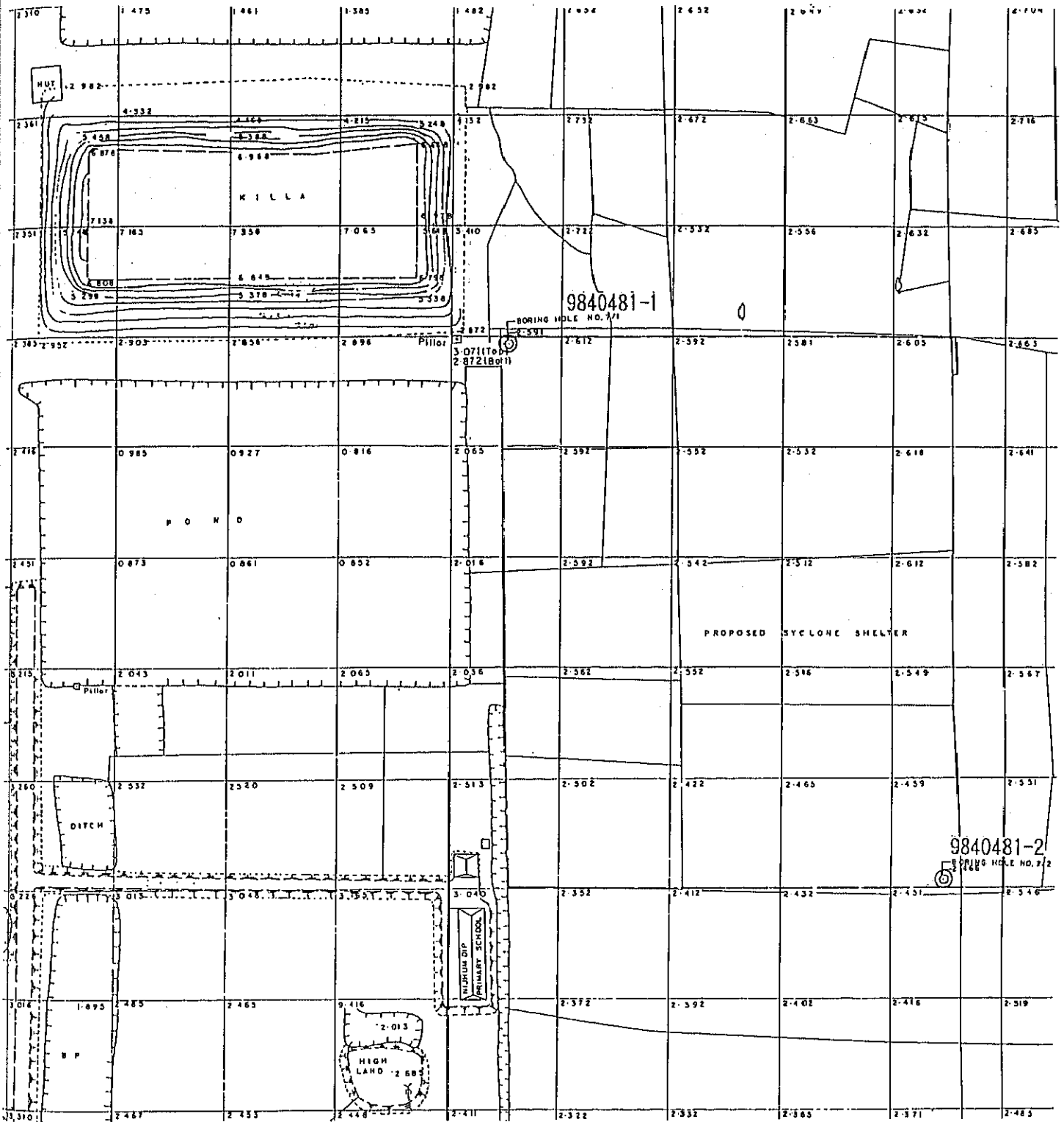
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LOCATION OF BOREHOLES(9840381)



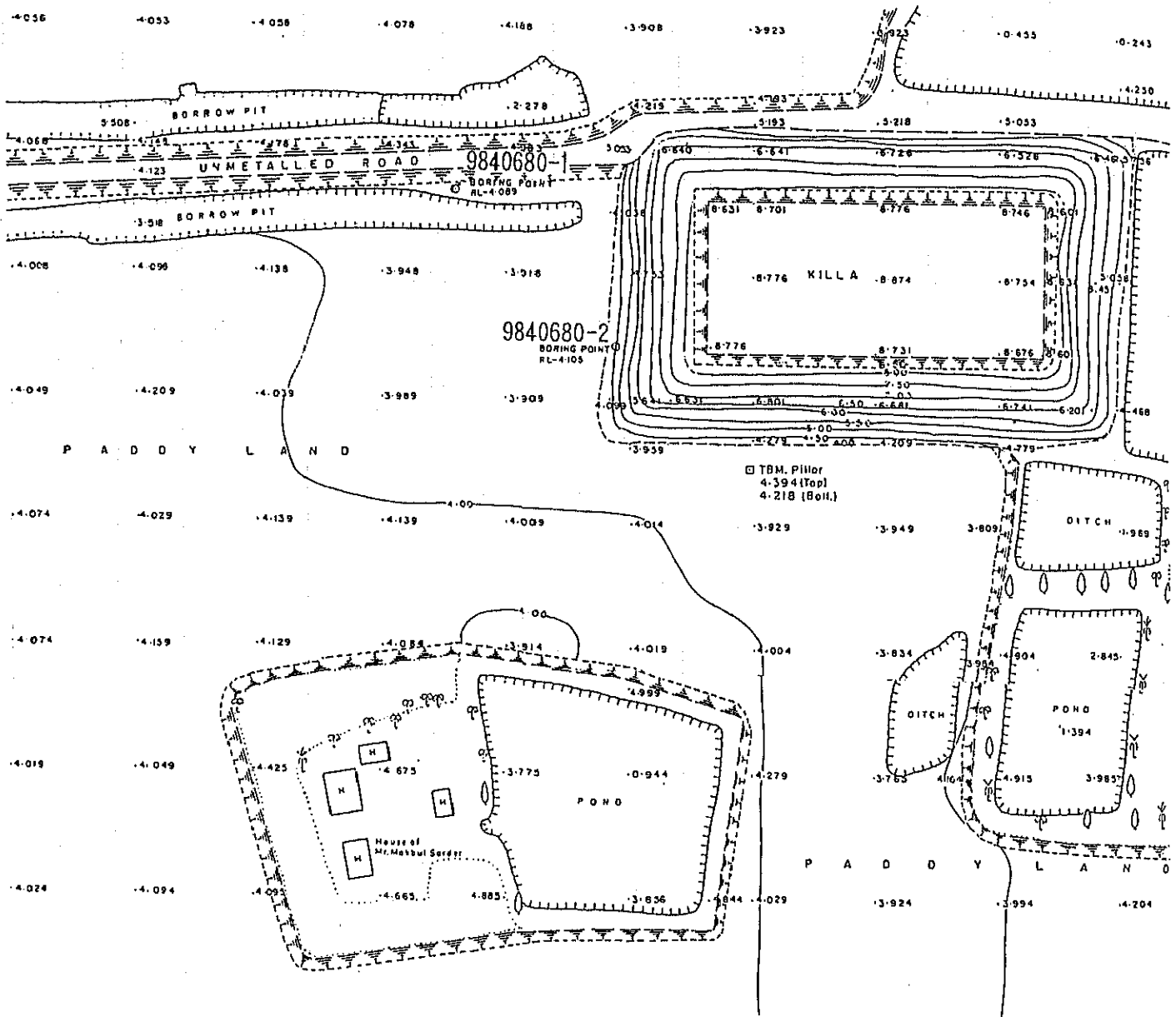
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LOCATION OF BORRHOLES(9840480)



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LOCATION OF BOREHOLES(9840680)