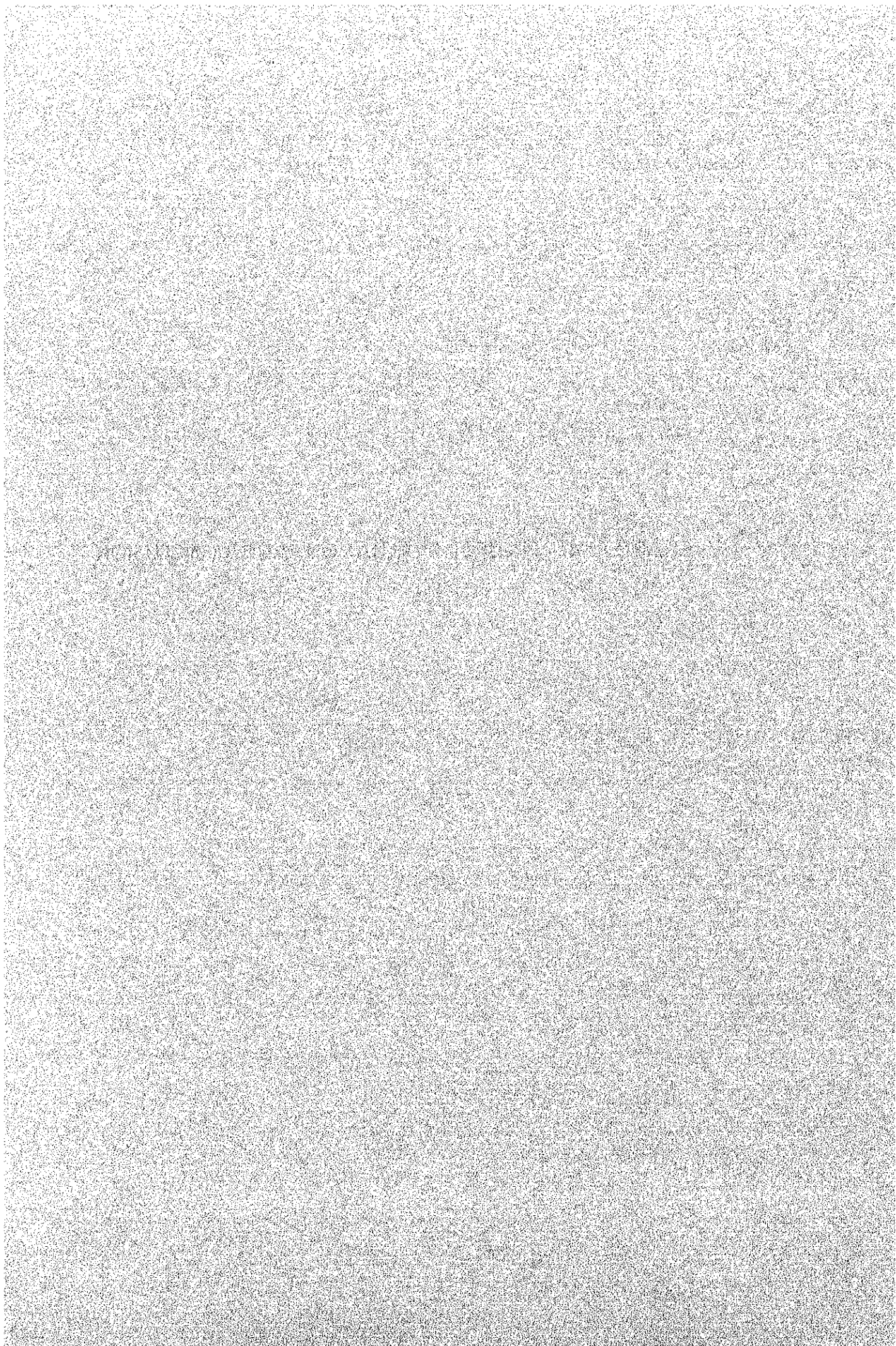


CHAPTER 4 PROJECT EVALUATION AND CONCLUSION



CHAPTER 4 PROJECT EVALUATION AND CONCLUSION

4-1 Expected Results of the Project

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

Present situation and problems	Measures under the Project	Expected effects and improvements
<p>③ The Survey of Kenya is commissioning the Kenya Polytechnic to train its pre-service staff members. But education given at the college is not designed to fully meet the Survey of Kenya's technical requirements. Thus, the practical training for pre-service staff is insufficient.</p>	<ul style="list-style-type: none"> ● The Kenya Institute of Surveying and Mapping, which is to provide training in land surveying, cartography, map reproduction and photogrammetry under the control of the Survey of Kenya, will be established. 	<ul style="list-style-type: none"> ● It will become possible to provide practical training of pre-service staff members in basic aspects of surveying and mapping, namely land surveying, cartography, map reproduction and photogrammetry, which will meet the Survey of Kenya's training requirements.
<p>④ The Kenya Polytechnic is unable to increase the full quota of trainees because of limitations to its facilities and teaching staff, and therefore it is difficult to provide training in accordance with the Survey of Kenya's plan to increase its technical staff.</p>	<ul style="list-style-type: none"> ● Facilities with a total floor space of about 6,850m² and required items of equipment will be procured. 	<ul style="list-style-type: none"> ● At present, the Survey of Kenya is commissioning Kenya Polytechnic to train about 60 pre-service staff members per grade, of which about 45 are recruited by the Survey of Kenya. The implementation of this project will make it possible to train as many as 103 trainees per grade. ● As a result, it will become for the Survey of Kenya to recruit about 60 pre-service staff members every year.
<p>⑤ There are not training facilities to train in-service staff members, which is making it hard to raise the technical level in keeping with the progress of surveying technologies.</p>	<ul style="list-style-type: none"> ● Five classrooms intended for the training of in-service staff members will be secured. 	<ul style="list-style-type: none"> ● It will become possible to provide Higher Diploma Course for 30 in-service staff members per grade. ● As a result, 18 in-service staff members will be qualified for Higher Diploma every year.
<p>⑥ It is difficult to train trainees from provincial areas due to accommodation limitations.</p>	<ul style="list-style-type: none"> ● A hostel to accommodate up to 300 trainees will be constructed. ● A canteen will be attached to the hostel to supply meals to trainees. 	<ul style="list-style-type: none"> ● It will become possible to train trainees from provincial areas. ● Trainees from provincial areas who complete their respective courses will be stationed in provincial areas, which will make it possible to secure the required number of surveying technicians to work in provincial areas.
<p>⑦ Because of a lack of calibration instruments and facilities as tape measures and transits, no training is given in calibration techniques, which poses the problem of precision of surveying.</p>	<ul style="list-style-type: none"> ● Collimators will be procured and an outdoor calibration field will be secured. 	<ul style="list-style-type: none"> ● It will become possible for trainees to learn calibration techniques. ● Surveying will become more precise.

Measures taken under the Project to resolve these problems will be limited to those related to facilities and equipment. When the Kenya Institute of Surveying and Mapping is established under the Project, however, the facilities and equipment for use in surveying and mapping training will be improved. As a result, it will become possible to increase the Survey of Kenya's technical staff and to raise their technical level, which will eventually contribute to the production of various kinds of maps in Kenya.

4-2 Appropriateness of the Implementation of the Project

(1) Training of Practical Technical Staff Members

When the Kenya Institute of Surveying and Mapping is established under the Project, a surveying and mapping training program for 103 pre-service staff members per grade and 30 in-service staff members per grade of the Survey of Kenya will be implemented.

The Survey of Kenya has so far commissioned the Kenya Polytechnic to train its pre-service staff members by specifying the full quota of trainees, but the training program conducted at the college has not been sufficient enough to reflect the actual situation of the Survey of Kenya's operations. Furthermore, it has been difficult for the college to increase the full quota of trainees, and as a result, the college has been unable to meet the Survey of Kenya's need to increase the number of its pre-service staff members. When the planned institute is established, it will become possible to train pre-service staff members in practical aspects of surveying and mapping, and the Survey of Kenya will be able to recruit pre-service staff members in accordance with its staff increase plan.

On the other hand, the Survey of Kenya, which has been recruiting about 45 out of the full quota of about 60 at the Kenya Polytechnic every year, is planning to recruit 60 out of the full quota of about 103 at the planned institute every year. This means an increase of only 15 in the number of pre-service staff members recruited every year. This plan reflects the Survey of Kenya's intention to increase its technical staff gradually within the limits of its current operational system, rather than increase it sharply at a time, and is therefore judged to be appropriate.

(2) System for the Operation and Management of the Kenya Institute of Surveying and Mapping

The Kenya Institute of Surveying and Mapping is to be operated as part of the Training Branch of the Survey of Kenya. It is to start with a staff of 197, of which about 67 will be lecturers. These staff members are to be recruited from among the Survey of Kenya's staff members, with no additional staff members being newly recruited. The Survey of Kenya currently has a staff of 3,446, of which 946 are surveying technicians. This means that only 5.7 percent of the Survey of Kenya's total staff members and only 7.1 percent of its technical staff members are required to operate and manage the institute. So there will be no problem with the system for the operation and management of the institute.

(3) Budgetary Appropriations

In the implementation of the Project, the Survey of Kenya plans to appropriate 556,637 Kf (about ¥24.5 million) for the operation and management of the institute's facilities. Since the project is not yet formally approved by the governments of the two countries, it cannot be said that the Ministry of Finance of Kenya has made a definite promise to secure the budget. Since the institute's staff members are to be recruited

from among the Survey of Kenya's present staff members, however, the personnel expenses in the amount of 374,339 Kf, which are included in the budget for this project will not cause any increase in the Survey of Kenya's total budget. The amount of the additional cost required to operate and manage the institute is 182,298 Kf, which is obtained by subtracting the amount of the personnel expenses of 374,339 Kf from the total budget of 556,637 Kf allocated for the operation and management of the institute. That amount makes up only about 1.6 percent of the Survey of Kenya's annual budget in the amount of 11,741,238Kf for fiscal 1994/95, and therefore it will be possible to make budgetary appropriations for the operation and management of the institute's facilities after the implementation of the Project.

Budgetary appropriations for the implementation of the Project are to be made out of the Survey of Kenya's annual budget for fiscal 1995/96 in keeping with the space of the implementation of the Project after the details of the Project are finalized.

(4) Operation and Maintenance

This institute's facilities are designed to be easy to operate and maintain after their completion. In the construction work under the Project, highly durable materials will be used, and priority will be given to those which can be procured locally. In addition, in the equipment installation work, utmost emphasis will be placed on the equipment manufacturers' maintenance service systems in Kenya. It should also be noted that the facilities are designed to minimize the energy cost by making full use of natural lighting and ventilation. This arrangement should make it easy to maintain and manage the facilities and equipment procured under the Project. Moreover, it is expected that the institute will assign a facility/equipment operation and maintenance staff of 23.

All in all, the institute's facility/equipment operation and maintenance system is judged to be sufficient.

As is clear from the above descriptions, it can be concluded that the implementation of this project is appropriate in terms of its objective, its expected results, its operation, its budget, and the operation and maintenance of its facilities and equipment.

4-3 Recommendations

Under the Project, the Kenya Institute of Surveying and Mapping will be established and the facilities and equipment required to provide surveying and mapping training in Kenya will be improved. As a result, it will become possible for the Survey of Kenya to train its pre-service and in-service technical staff members. The number of practical technical staff members will be increased and their technical level will be raised. All this will contribute to the smooth execution of the Survey of Kenya's mapping projects and the development of maps indispensable for the implementation of national development projects in Kenya.

The Survey of Kenya's surveying and mapping activities are playing a key role in the efforts by East African countries, including Kenya, to improve the quality of maps. If its training facilities are improved through the implementation of the Project, it will become possible for the Survey of Kenya to train trainees from other East African countries.

As such, the Project is expected to produce many positive effects in the country's human resources development and national development and thereby contribute to the sound socio-economic development in the country. It is concluded, therefore, that it is appropriate to implement the Project under the Government of Japan's grant aid cooperation.

As regards the operation and management of the institute's facilities, there will be no problem with the Government of Kenya's system for the implementation of the Project, including the staff assignment and budget allocation. The following recommendations are made so that the Project may be implemented promptly and that the facilities procured under the Project may be operated smoothly and effectively.

(1) The Relationship with the Project-type Technical Cooperation Program

The Project is to be implemented in accordance with the training plans worked out and implemented under the "Kenya Institute of Surveying and Mapping Project", a project-type technical cooperation program being implemented at the Survey of Kenya. The details and the scales of the facilities to be procured under the Project were decided on the basis of training courses, curriculum and the number of trainees which are specified in the surveying training plans for the project-type technical cooperation program. The Project is therefore designed to support the operations carried out under the project-type technical cooperation program. For this reason, it is expected that the Project, along with the project-type cooperation program, is expected to greatly contribute to the training of surveying technicians in Kenya and the promotion of surveying and mapping projects in the country. From the standpoint of ensuring the expected results of the ongoing project-type technical cooperation program, too, it is desirable that the Project be implemented as soon as possible.

(2) Prompt Formalities for Contracts or Office Procedures

Since the Project is to be implemented within the framework of the Government of Japan's grant aid cooperation, the construction work and the equipment installation work must be completed before the time limit

specified in the Exchange of Notes or the end of the fiscal year of the Government of Japan. The Kenyan side, therefore, needs to follow the procedures for the signing of the Exchange of Notes, the conclusion of the consultant agreement, the approval of detail drawings prepared based on this basis design study report, the filing of applications for approval, the conclusion of contracts, and the imported equipment's exemption from taxation.

(3) Budget for the Implementation of the Project

It is important that the Kenyan side promptly make budgetary appropriations for the Project when the implementation of the Project is formally approved by the governments of the two countries. Since the budget for the implementation of the Project is not included in the Government of Kenya's annual budget for fiscal 1994/95, the Government of Kenya needs to promptly make budgetary appropriations for the Project out of its annual budget for fiscal 1995/96 if it is decided to implement the Project within the limits of the Government of Japan's annual budget for fiscal 1995.

(4) Facility/Equipment Operation and Maintenance

Inadequate budgetary appropriations for the operation and maintenance of the facilities and equipment procured under the Project may destroy their durability and impair the efficiency of operations carried out at the facilities. In order to attain the objective of the Project, it is necessary to make well-planned budgetary appropriations for the operation and maintenance of the facilities and equipment.

ANNEX

1. MEMBERS OF THE BASIC DESIGN STUDY TEAM

(1) BASIC DESIGN STUDY (October 10~November 8, 1994)

- ① Mr. Yoshiro NAKAHORI Leader
Director for Research Coordination,
Planning Department,
Geographical Survey Institute,
Ministry of Construction
- ② Mr. Yujiro YABE Grant Aid Programme
Grant Aid Division,
Economic Cooperation Bureau,
Ministry of Foreign Affairs
- ③ Mr. Takanori TANAKA Project Manager of the Consultants cum
Training Facilities Planning
Yamashita Sekkei Inc.
- ④ Mr. Tsukasa TAMAKI Facilities Planning
Yamashita Sekkei Inc.
- ⑤ Mr. Tetsuya OHTSUKI Survey Training Equipment Planning
Yamashita Sekkei Inc.

(2) EXPLANATION OF DRAFT FINAL REPORT (February 19~March 2, 1995)

- ① Mr. Minoru AKIYAMA Leader
Director for Environmental Geographic
Information, Planning Department,
Geographical Survey Institute,
Ministry of Construction
- ② Mr. Shoji TOTSUKA Project Coordinator
Second Basic Design Study Division,
Grant Aid Study & Design Department,
JICA
- ③ Mr. Takanori TANAKA Project Manager of the Consultants cum
Training Facilities Planning
Yamashita Sekkei Inc.
- ④ Mr. Tetsuya OHTSUKI Survey Training Equipment Planning
Yamashita Sekkei Inc.

2. SURVEY SCHEDULE

(1) Basic Design Study (October 10~November 8, 1994)

No.	Date	Schedule
1	Oct. 10 (Mon)	<ul style="list-style-type: none"> ● Lv. Tokyo (Messrs. Nakahori, Tanaka, Tamaki, Ohtsuki) ● Ar. Frankfurt by JL 407
2	11 (Tue)	<ul style="list-style-type: none"> ● Lv. Frankfurt ● Ar. Nairobi by LH 580
3	12 (Wed)	<ul style="list-style-type: none"> ● Ar. Nairobi (Mr. Yabe) ● Meeting at JICA Kenya Office
4	13 (Thu)	<ul style="list-style-type: none"> ● Courtesy call on the Embassy of Japan ● Courtesy call on Ministry of finance Ministry of Lands and Settlement Survey of Kenya (SOK)
5	14 (Fri)	<ul style="list-style-type: none"> ● Survey of the project site ● Meeting with SOK on Grant-Aid-System
6	15 (Sat)	<ul style="list-style-type: none"> ● Observation of land use condition in semi-arid land ● Survey of local construction condition
7	16 (Sun)	<ul style="list-style-type: none"> ● Meeting within the study team ● Preparation of Minutes of Discussions (draft)
8	17 (Mon)	<ul style="list-style-type: none"> ● Discussion on the Inspection Report and M/D at SOK
9	18 (Tue)	<ul style="list-style-type: none"> ● Discussion on the M/D at SOK
10	19 (Wed)	<ul style="list-style-type: none"> ● Signing on the M/D ● Report to the Embassy of Japan and JICA Kenya Office
11	20 (Thu)	<ul style="list-style-type: none"> ● Observation of Nakuru provincial office
12	21 (Fri)	<ul style="list-style-type: none"> ● Lv. Nairobi (Messrs. Nakahori, Yabe) ● Ar. London by KQ106
13	22 (Sat)	<ul style="list-style-type: none"> ● Lv. London
14	23 (Sun)	<ul style="list-style-type: none"> ● Ar. Tokyo by BA007
15	24 (Mon)	<ul style="list-style-type: none"> ● Field Survey (Messrs. Tanaka, Tamaki, Ohtsuki) ● Discussion with SOK on the basic design, background of the project, etc. ● Market Research on material price, construction method, building laws, procurement condition, etc. ● Observation on the related facilities such as University of Nairobi, the Kenya Polytechnic, NYS training centre. ● Preparation of Survey Report
27	Nov. 5 (Wed)	<ul style="list-style-type: none"> ● Report to JICA Kenya Office
28	6 (Thu)	<ul style="list-style-type: none"> ● Lv. Nairobi (Messrs. Tanaka, Tamaki, Ohtsuki) ● Ar. Frankfurt by LH581
29	7 (Fri)	<ul style="list-style-type: none"> ● Lv. Frankfurt
30	8 (Sat)	<ul style="list-style-type: none"> ● Ar. Tokyo by JL408

(2) Explanation of Draft Final Report (February 19~March 2, 1995)

No.	Date	Schedule
1	Feb. 19 (Sun)	● Lv. Tokyo (Messrs. Akiyama, Totsuka, Tanaka, Ohtsuki) ● Ar. Paris by JL405
2	20 (Mon)	● Lv. Paris ● Ar. Nairobi by AF 476
3	21 (Tue)	● Courtesy call on Embassy of Japan, JICA Kenya Office Ministry of Finance ● Meeting with JICA Experts of "Kenya Institute of Survey and Mapping"
4	22 (Wed)	● Meeting with Ministry of Lands and Settlement, Survey of Kenya (SOK) on the Draft Report.
5	23 (Thu)	● Meeting with SOK on the Draft Report and Minutes of Discussions (draft)
6	24 (Fri)	● Meeting with SOK on M/D (draft) ● Observation of SOK's Field Headquarters
7	25 (Sat)	● Preparation of the M/D
8	26 (Sun)	● Meeting within the study team
9	27 (Mon)	● Signing on the M/D ● Report to Embassy of Japan, JICA Kenya Office ● Lv. Nairobi (Messrs. Akiyama, Totsuka, Tanaka, Ohtsuki)
10	28 (Tue)	● Ar. London by BA066
11	Mar. 1 (Wed)	● Lv. London
12	2 (Thu)	● Ar. Tokyo by JL402

3. MEMBER LIST OF CONCERNING PARTY IN KENYA

Ministry of Lands and Settlement

Mr. J. K. Sang	Permanent Secretary
Mr. J. J. R. Onchiri	Deputy Secretary (Development)
Mr. G. Kamuto	Senior Assistant Secretary (Finance)

Survey of Kenya

Mr. W. J. Absaloms	Director of Surveys
Mr. A. K. Njuki	Deputy Director of Surveys
Mr. O. M. Wainaina	Assistant Director of Surveys (Administration)
Mr. J. D. Obel	Assistant Director of Surveys (Mapping)
Mr. E. M. Gikinya	Assistant Director of Surveys (Cadastral)
Mr. J. R. R. Aganyo	Assistant Director of Surveys (Adjudication)
Mr. H. Nyapola	Acting Principal
	Kenya Institute of Surveying and Mapping
Mr. J. O. Sogoh	Assistant Director of Surveys (Technical)
Mr. J. W. Kililo	Assistant Secretary (Finance)

Ministry of Finance

Mr. J. L. Lavuna	Undersecretary
Mr. J. M. Nyanumba	Assistant Secretary
Ms. Rhodah W. Njuauna	Assistant Secretary

Ministry of Public Works and Housing

Mr. Philip O. Sika	Chief Superintendent, Architect
Mr. Moses A. Nyakiongora	Senior Superintendent, Quantity Surveyor
Mr. Daniel N. Osewa	Electrical Engineer
Mr. Peter K. Ngugi	Superintendent, Mechanical Engineer
Mr. John D. Obel	Assistant Director of Surveys
Mr. John A. Linturiri	Drainage Engineer

Kenya Post & Telecommunication Co.

Mr. Mangeni Benson	Planning & Construction
Mr. Kutto Fred	Planning & Construction

Ministry of Labour & Manpower Development

Mr. E. W. Ngare	Deputy Labour Commissioner
-----------------	----------------------------

National Meteorological Centre

Mr. James W. Kivuva

Climatological Section

Kenya Power & Lighting Co.

Ms. R. K. Gitonga

Mr. Keneth Chege

Senior Commercial Engineer

Assistant Commercial Engineer

Nairobi City Council

Mr. Macharia

Mr. David K. Nderitu

Mr. Francis Karugu

Mr. J. Omuombo Ngazi

Deputy General Manager,

Water & Sewerage Department

Chief Assistant Engineer, Sewer Section

Assistant General Manager, Commercial Section

fire Prevent Officer

Central Bank of Kenya

Ms. I. B. Miabu

Mr. M. Gituma

Foreign Department

Foreign Department

Embassy of Japan In Kenya

Mr. Masahiko HORIE

Mr. Kiyoshi SAKAI

Minister

First Secretary

JICA Kenya Office

Mr. Toshikazu NAGASHIMA

Mr. Sumio AOKI

Ms. Eri SUGITA

Resident Representative

Deputy Director

Assistant Resident Representative

JICA Expert

Mr. Taketsune HOSONO

Mr. Tamotsu SAITO

Mr. Shoichi HARA

Mr. Kiyohiro MIYAZAKI

Mr. Hideki MURAYAMA

Mr. Kenji ISOMOTO

Chief Advisor

JICA Expert (Cartography)

JICA Expert (Map Reproduction)

JICA Expert (Geodesy)

JICA Expert (Training Planner)

JICA Expert (Coordinator)

4. MINUTES OF DISCUSSIONS

(1) BASIC DESIGN STUDY

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR THE ESTABLISHMENT
OF
THE KENYA INSTITUTE OF SURVEYING AND MAPPING
IN
THE REPUBLIC OF KENYA

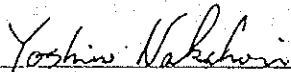
In response to a request from the Government of the Republic of Kenya, the Government of Japan has decided to conduct a Basic Design Study on the Project for the Establishment of the Kenya Institute of Surveying and Mapping in the Republic of Kenya (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Kenya the Basic Design Team headed by Mr. Yoshiro NAKAHORI, Director for Research Coordination, Planning Department, Geographical Survey Institute, Ministry of Construction, and is scheduled to stay in the country from the 11th October to the 6th November, 1994.

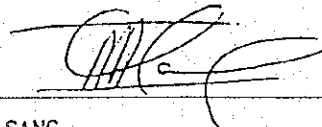
The Team held discussions with the officials concerned of the Government of Kenya and conducted a field survey at the study area.

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

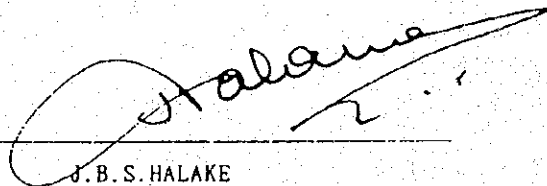
Nairobi, the 19th October, 1994



Yoshiro NAKAHORI
Leader,
Basic Design Study Team, JICA



J.K. SANG
Permanent Secretary,
Ministry of Lands and Settlement,
The Republic of Kenya



J.B.S. HALAKE
Financial Secretary,
Ministry of Finance,
The Republic of Kenya

ATTACHMENT

1. OBJECTIVE OF THE PROJECT

The objective of the Project is to establish the Kenya Institute of Surveying and Mapping along the agreement on the Technical Cooperation for the Kenya Institute of Surveying and Mapping Project.

2. PROJECT IMPLEMENTING AGENCY

The Ministry of Lands and Settlement is responsible for implementation of the Project.

3. PROJECT SITE

The project site location is shown in Annex-1.

4. CONTENTS OF THE REQUEST BY THE KENYAN SIDE

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

5. CHARACTERISTICS OF THE JAPAN'S GRANT AID PROGRAMME

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

6. NECESSARY MEASURES TO BE TAKEN BY THE KENYAN SIDE

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

7. FURTHER SCHEDULE OF THE STUDY

- (1) The Consultant will proceed to further studies in Kenya until the 6th of November, 1994.
- (2) JICA will prepare a Draft Study Report and dispatch a Draft Report Explanation Team in February, 1995 in order to explain and to confirm the contents of the Draft Study Report.
- (3) In case that the Draft Study Report is accepted by the Kenyan side, JICA will complete the Study Report and send it to the Kenyan side by May, 1995.

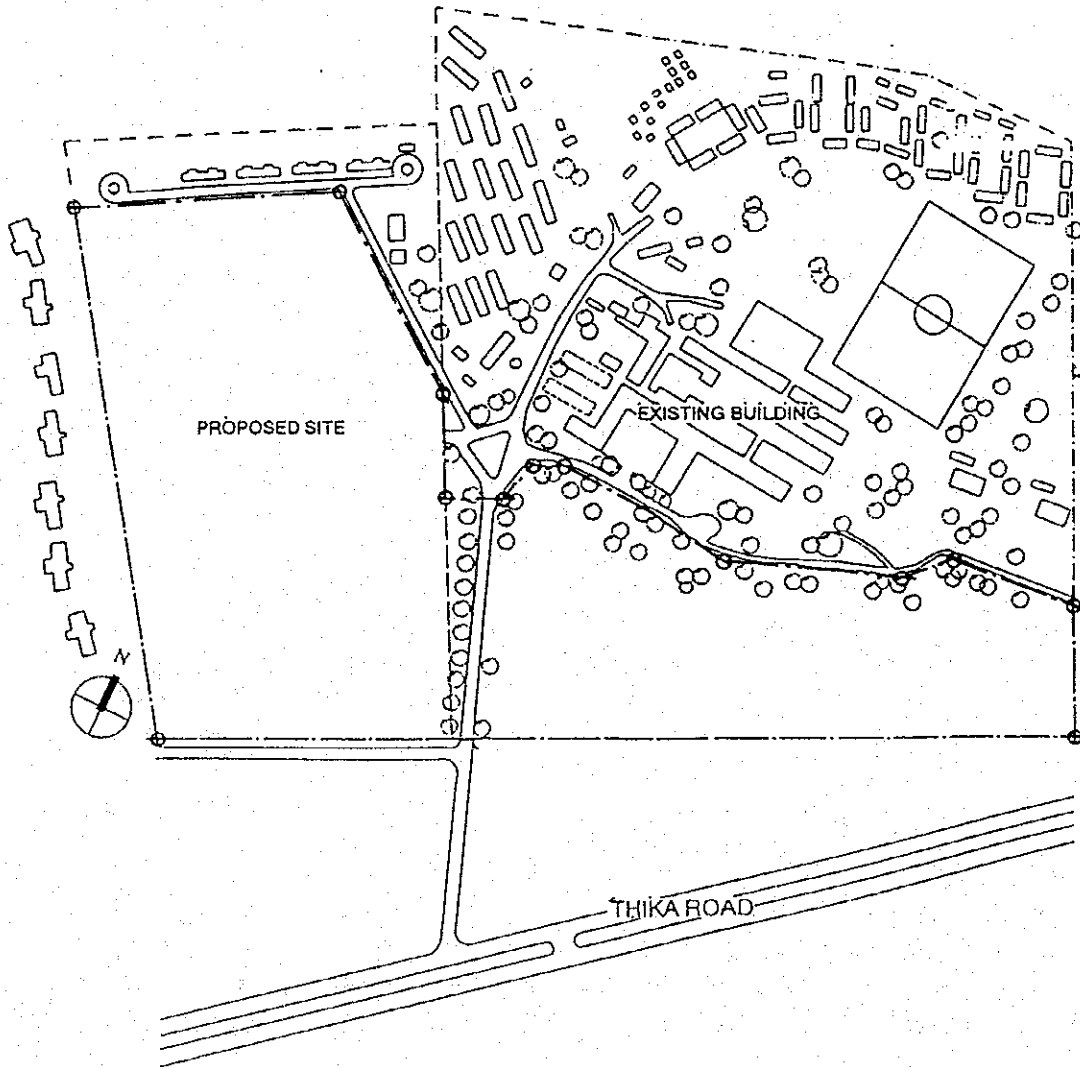
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ANNEX-1. LOCATION OF THE PROJECT SITE

The Project site is located in the premise of Survey of Kenya Field Headquarters, P.O.Box 30046, Nairobi.



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

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

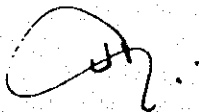
1. Facility

- (1) Administration Building
- (2) Training Building
- (3) Laboratory Building
- (4) Trainees' Hostel
- (5) Other Incidental Buildings
- (6) Calibration Site

2. Equipment

- (1) General Use Equipment
- (2) Land Survey Equipment
- (3) Cartographic Equipment
- (4) Photogrammetric and Remote Sensing Equipment
- (5) Map Reproduction Equipment

3. Vehicle for Field Training



ANNEX-3. JAPAN'S GRANT AID PROGRAMME

1. Japan's Grant Aid Procedures

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

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

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

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

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

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

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

2. Contents of the Study

(1) Contents of the Study

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

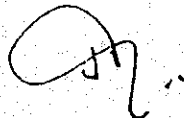
- a) to confirm the background of the request, objectives and effects of the Project and maintenance ability of the recipient country necessary for the implementation,
- b) to evaluate the appropriateness of the Grant Aid from the technological, social and economical points of views,
- c) to confirm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

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

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

(2) Selection of Consultants

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



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

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

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

(2) Exchange of Notes (E/N)

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

(3) Period

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

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

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

(4) Purchase of the Products and/or Services

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

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

However, in terms of the principle of the Grant Aid, the prime contractors, that is the consultant, contractor and procurement firm necessary for the implementation of the Grant Aid, are limited to "Japanese nationals".

(5) Verification

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

(6) Undertakings required to the The Recipient Country

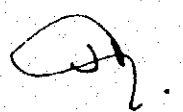
(As described in Annex-4).

(7) Proper Use

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

(8) Re-export

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



(9) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese Yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the contracts verified.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

12





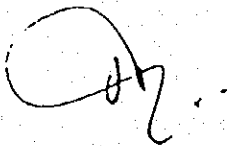
ANNEX-4. NECESSARY MEASURES TO BE TAKEN BY THE KENYAN SIDE

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

1. To provide data and information necessary for the Project;
2. To secure a land for the Project;
3. To clear, level and reclaim the site for the Project prior to the Project implementation;
4. To provide proper access road to the Project area;
5. To construct a temporary training building not later than December, 1995;
6. To undertake gardening, fencing, exterior lighting, and other incidental outdoor works in and around the Project site;
7. To provide the following incidental facilities to the Project;
 - (1) Electricity distributing line to the site
 - (2) City water distribution main to the site
 - (3) Drainage main to the site
 - (4) Telephone trunk line to the site
 - (5) General furniture such as carpet, curtain and others,
 - (6) Other incidental facilities necessary for the Project realization;
8. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission;
9. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in Kenya and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid;
10. To exempt Japanese juridical and physical nationals involved in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Kenya with respect to the supply of the products and services under the verified contracts. The customs duties, internal taxes and other fiscal levies mentioned in this clause include but not limited to the following;

- (1) Import Duties (on goods imported solely for the project use)
- (2) V.A.T.
- (3) Training Levy
- (4) Corporation Tax
- (5) Income Tax

11. 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 Kenya and stay therein for the performance of their work;
12. To provide necessary permissions, licenses and other authorizations for the Project, if necessary;
13. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project; and
14. To bear all the expenses other than those to be borne by the Japan's Grant Aid within the scope of the Project.



(2) EXPLANATION OF DRAFT FINAL REPORT

MINUTES OF DISCUSSIONS
ON
BASIC DESIGN STUDY ON THE PROJECT FOR THE ESTABLISHMENT
OF
THE KENYA INSTITUTE OF SURVEYING AND MAPPING
IN
THE REPUBLIC OF KENYA

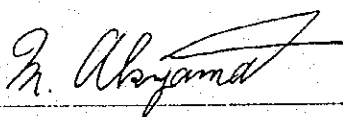
(CONSULTATION ON DRAFT REPORT)

In October 1994, Japan International Cooperation Agency (JICA) dispatched the Basic Design Study Team on "The Project for the Establishment of the Kenya Institute of Surveying and Mapping in the Republic of Kenya" (hereinafter referred to as "the Project") to Kenya, and through discussions, field survey, and technical examination of the results in Japan, JICA has prepared the Draft Report of the study.

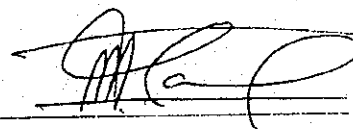
In order to explain about and to consult the Kenyan side on the components of the Draft Report, JICA dispatched to Kenya a study team (hereinafter referred to as "the Team"), headed by Mr. Minoru AKIYAMA, Director for Environmental Geographic Information, Planning Department, Geographical Survey Institute, Ministry of Construction, and is scheduled to stay in the country from February 21 to 27, 1995.

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

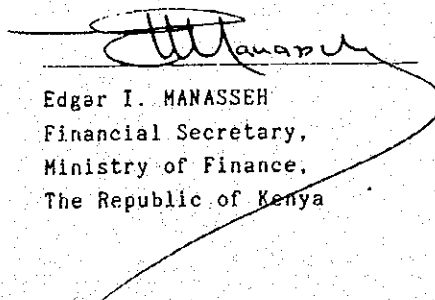
Nairobi, February 27, 1995



Minoru AKIYAMA
Leader
Study Team for Explanation
of Draft Report, JICA



J.K.SANG
Permanent Secretary
Ministry of Lands and Settlement,
The Republic of Kenya



Edgar I. MANASSEH
Financial Secretary,
Ministry of Finance,
The Republic of Kenya

ATTACHMENT

1. Components of Draft Report

The Government of Kenya has agreed and accepted in principle the components of the Draft Report explained by the Team as follows:

(1) Construction of Facilities

- Training Block : classroom building, laboratory building, lecture hall, library
- Administration Block : administration building, garage, outdoor facilities
- Hostel Block : male trainees' hostel, female trainees' hostel, canteen building
- Others : calibration site

(2) Procurement of Equipment and Vehicles

General Use equipment, Land Survey equipment, Cartographic equipment, Photogrammetric and Remote Sensing equipment, Map Reproduction equipment, Vehicles for field training
(Equipment and Vehicles List is shown in ANNEX-2.)

2. Project Site

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

3. Characteristics of the Japan's Grant Aid Programme

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

4. Necessary Measures to be taken by the Kenyan Side

The Study Team explained the necessary measures to be taken by the Government of Kenya described in ANNEX-4 for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

As for the tax exemptions shown in clause 10 of ANNEX-4, the Kenyan side strongly requested to frame the contents as described below so as to comply with Kenyan Law governing tax exemptions, and the Team agreed to convey the request to the Government of Japan.

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Contents of Clause 10 (Tax Exemption) proposed by Kenyan Side

10. (a) To exempt products imported or purchased solely for project use under the Grant Aid, from customs duties, value added tax and any other fiscal charges provided the products are imported or purchased prior to clearance through customs;
- (b) To exempt the non-resident contractors and subcontractors and their non-resident personnel solely in Kenya for the purpose of the project, from income tax and value added tax in respect of their earnings and services respectively, rendered under the project;
- (c) To exempt the non-resident Japanese nationals solely in Kenya for the purpose of working under the project, from income tax and value added tax in respect of their earnings and services respectively, rendered under the project;
- (d) To exempt personal and household effects of the non-resident Japanese nationals solely in Kenya for the purpose of working under the project, from customs duties and value added tax, provided the said effects are imported or purchased within the first three months of first arrival in the country;

5. Further Schedule of the Study

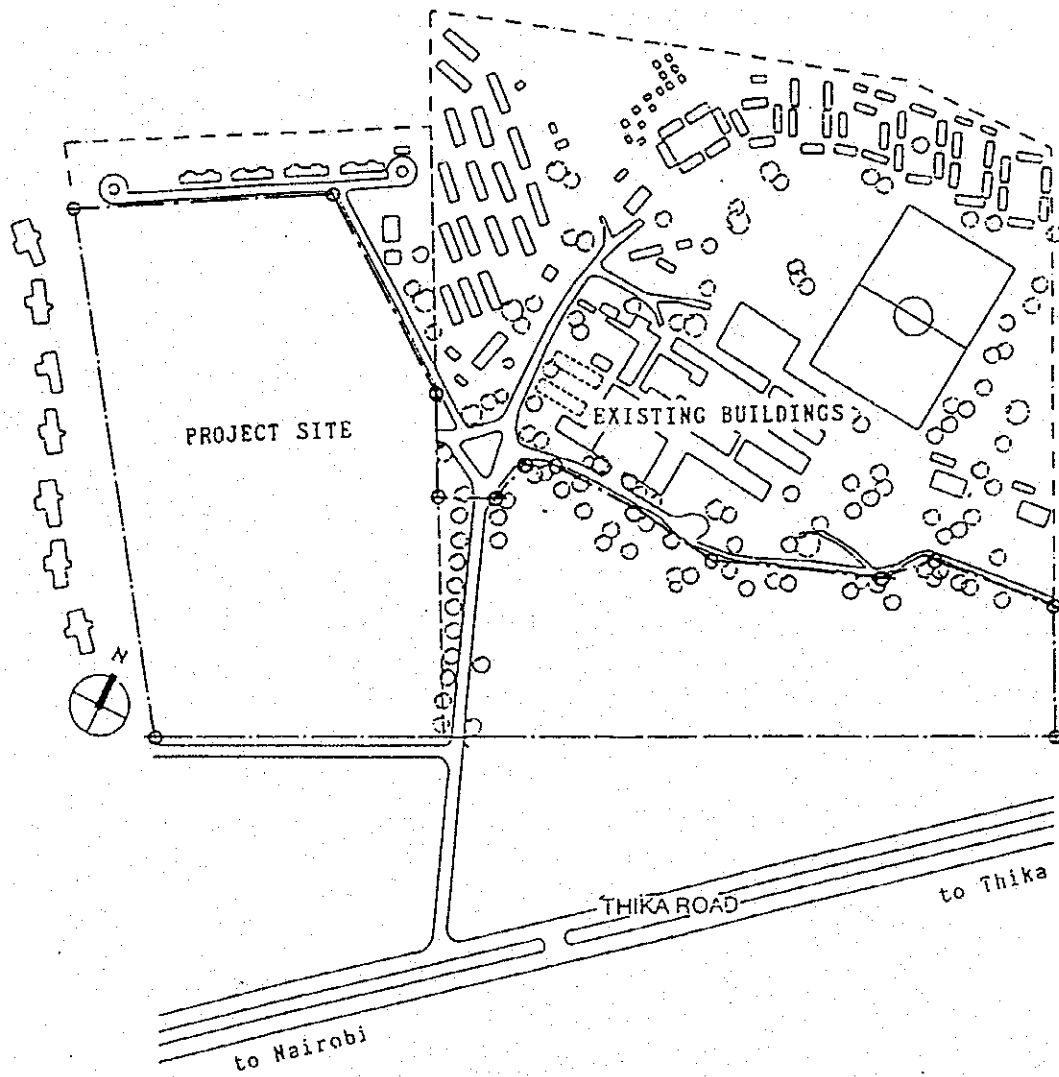
The Team will compile the final report in accordance with the confirmed items and send it to the Government of Kenya through JICA Kenya Office by the end of May 1995.

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ANNEX-1 Location of the Project Site

The Project Site is located in the premises of Survey of Kenya Field Headquarters, Ruaraka, Nairobi.



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ANNEX-2. List of Equipment and Vehicles

No.	Equipment	Quantity
1. General use equipment		
A-1	Conference table	2 units
A-2	Lecture table (A)	133 units
A-3	Lecture table (B)	215 units
A-4	Conference chair	160 units
A-5	Lecture chair (A)	180 units
A-6	Lecture chair (B)	245 units
A-7	Dining table (W900xD900xH700mm)	38 units
A-8	Dining chair	150 units
A-9	Bunk bed (W2,000xD900xH1,500mm, for 2 persons)	150 units
A-10	Dormitory desks (W900xD700xH750mm)	300 units
A-11	Dormitory chair (without arm rest)	300 units
A-12	Locker (W150xD450xH1,800mm)	300 units
2. Land Survey equipment		
B-1	GPS equipment	1 set
	. Receiver (for two waves)	(2)
	. Personal computer (laptop type)	(3)
	. Software	(1)
B-2	Theodolite (T2 equivalent, compatible to EDM)	4 units
B-3	EDM equipment	1 set
	. Middle range	(6)
	. Long range	(1)
B-4	Level	1 set
	. Automatic level	(12)
	. Precise tilting level	(2)
	. Precise automatic level	(2)
B-5	Calibration system (optical)	1 set
B-6	Equipment for physics laboratory (optical, electrical, electronic)	1 set
B-7	Software for survey calculation	1 set
B-8	Maintenance parts for existing equipment	1 set
3. Cartographic equipment		
C-1	Planimeter	1 set
	. Digital planimeter	(10)
	. Mechanical planimeter	(5)
C-2	CAD equipment (for training purpose, with software, UPS, etc.)	1 set
C-3	Stereo zoom transferscope	2 units
C-4	Light table	15 units
	Light table with scales	10 units
4. Photogrammetric and Remote Sensing equipment		
D-1	Analytical plotter (for training purpose)	2 units
D-2	Digital image scanner	1 unit
D-3	Aerial camera simulator	1 set
D-4	Point pricking machine	1 unit
D-5	Mirror stereoscope	4 units
D-6	Software for image analysis	1 set
D-7	Software for aerial triangulation	1 set
D-8	Maintenance parts for existing equipment	1 set

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No.	Equipment	Quantity
5. Map Reproduction equipment		
E-1	Guillotine and trimmers (programmable, maintenance parts)	1 set
E-2	Proofing press	1 unit
E-3	Proofing equipment (cromaline)	1 set
E-4	Contact printing frame (for cromaline and presensitized plate)	2 sets
E-5	Rectifier (maintenance parts)	1 set
E-6	Printing ink testing machine	1 set
E-7	Printing press (for A2 size)	1 unit
E-8	Colour scanner	1 unit
E-9	Folding machine (maintenance parts)	1 set
E-10	Desktop publishing system (with accessories)	1 set
E-11	Process camera (small size, with controller)	1 unit
E-12	Contact printing machine (for photography)	1 unit
E-13	Film processor (A2 size)	1 unit
E-14	Plate processor (for presensitized plate)	1 unit
E-15	Rapid access and diffusion transfer system	1 unit
E-16	Equipment for applying light sensitive coating	1 unit
E-17	Light table (large size)	8 units
E-18	Process camera (large size, maintenance parts)	1 set
6. Library equipment		
F-1	Magazine storage rack (24 sections)	10 units
F-2	Reading table (for 6 persons)	14 units
F-3	Reading chair	84 units
F-4	Map filing cabinet	2 units
F-5	Monograph card catalogue duplicating machine	1 unit
F-6	Unit shelves	60 units
F-7	Book binding equipment (binding machine, guillotine, table, etc.)	1 set
7. Computer laboratory equipment		
G-1	Personal computer (desktop type with printer, software, UPS, table, etc.)	25 sets
8. Vehicle for field training		
H-1	Minibus (for 30 passengers)	2 units
H-2	Minibus (for 20 passengers)	1 unit
H-3	4WD wagon (for 9 passengers, tropical standard)	5 units
H-4	Pickup truck (capacity: 1 ton)	1 unit
H-5	Pickup truck (capacity: 3 ton)	1 unit

(Note) The number in () shows breakdown quantity of each item.

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ANNEX-3 Japan's Grant Aid Programme

1. Japan's Grant Aid Procedures:

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

- 1). - Application (A request made by the recipient country)
 - Study (Basic Design Study conducted by JICA)
 - Appraisal & Approval
(Appraisal by the Government of Japan and Approval by the Cabinet of Japan)
 - Determination of Implementation
(Exchange of Notes between both Governments)
 - Implementation (Implementation of the Project)
- 2) At the first step (Application), a request made by the recipient country is examined by the Government of Japan (Ministry of Foreign Affairs), whether or not it is suitable for Grant Aid. If the request is confirmed that it has a high priority as the project for Grant Aid, the Government of Japan instructs JICA to conduct the Study.

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

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

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

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

2. Contents of the Study

1) Contents of the Study

The purpose of the study (the Basic Design Study conducted by JICA) is to provide basic documents necessary for the appraisal by the Government of Japan whether or not the project is viable for Japan's Grant Aid Programme. The contents of the Study are as follows:

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

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

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

2) Selection of Consultants

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

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

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3. Japan's Grant Aid Programme

1) What is Grant Aid?

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

2) Exchange of Notes (E/N)

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

3) Period

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

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

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

4) Purchase of the Products and or Services

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

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

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However, in terms of the principle of the Grant Aid, the prime contractors, that is the consultant, contractor and procurement firm, necessary for the implementation of the Grant Aid are limited to "Japanese nationals".

5) Verification

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

6) Undertakings required to the Government of Recipient Country
(As described in ANNEX-4)

7) Proper Use

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

8) Re-export

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

9) Banking Arrangement (B/A)

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

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

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ANNEX-4 Necessary Measures to be taken by the Kenyan Side

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

1. To provide data and information necessary for the Project;
2. To secure land for the Project;
3. To clear, level and reclaim the site for the Project prior to the Project implementation;
4. To provide proper access road to the Project area;
5. To construct a temporary training building not later than December, 1995;
6. To undertake gardening, fencing, exterior lighting, and other incidental outdoor works in and around the Project site;
7. To provide the following incidental facilities to the Project;
 - (1) Electricity distributing line to the site,
 - (2) City water distribution main to the site,
 - (3) Sewerage main to the site,
 - (4) Telephone trunk line to the site,
 - (5) General furniture such as carpet, curtain and others, and
 - (6) other incidental facilities necessary for the Project realization;
8. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission;
9. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in Kenya and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid;
10. To exempt Japanese juridical and physical nationals involved in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Kenya with respect to the supply of the products and services under the verified contracts. The customs duties, internal taxes and other fiscal levies mentioned in this clause include but not limited to the following;

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- (1) Import Duties (on goods imported solely for the Project use)
- (2) Value Added Tax
- (3) Training Levy
- (4) Corporation Tax
- (5) Income Tax

11. 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 Kenya and stay therein for the performance of their work;
12. To provide necessary permission, licenses and other authorizations for implementing the Project, if necessary;
13. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project; and
14. To bear all expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.

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ATTENDANTS LIST OF THE MEETING

KENYAN SIDE

MINISTRY OF LANDS AND SETTLEMENT

1. Mr. J.J.R. ONCHIRI Chairman
Deputy Secretary (Development)
2. Mr. W.J. ABSALOMS Director of Surveys
3. Mr. A.K. NJUKI Deputy Director of Surveys
4. Mr. G. KAMUTO Senior Assistant Secretary(Finance)
5. Mr. O.M. WAINAINA Assistant Director of Surveys(Administration)
6. Mr. J.D. OBEL Assistant Director of Surveys(Mapping)
7. Mr. E.M. GIKINYA Assistant Director of Surveys(Cadastral)
8. Mr. J.R.R. AGANYO Assistant Director of Surveys(Adjudication)
9. Mr. H. NYAPOLA Acting Principal
Kenya Institute of Surveying and Mapping
10. Mr. J.O. SOGOH Assistant Director of Surveys(Technical)
11. Ms. J.W. KILILO Assistant Secretary(Finance)

MINISTRY OF FINANCE

12. Mr. J.M. NYANUMBA Assistant Secretary
Department of External Resources

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JAPANESE SIDE

Study Team

1. Mr. M. AKIYAMA Leader,
Study Team for Explanation of Draft Report
Geographical Survey Institute,
Ministry of Construction
2. Mr. S. TOTSUKA JICA
Grant Aid Study and Design Department
3. Mr. T. TANAKA Yamashita Sekkei Inc.
4. Mr. T. OTSUKI Yamashita Sekkei Inc. (Pasco International Ltd.)

JICA Expert

5. Mr. T. HOSONO JICA Expert (Chief Advisor)
6. Mr. T. SAITO JICA Expert (Cartography)
7. Mr. S. HARA JICA Expert (Map Reproduction)
8. Mr. K. MIYAZAKI JICA Expert (Geodesy)
9. Mr. H. MURAYAMA JICA Expert (Training Planner)
10. Mr. K. ISOMOTO JICA Expert (Coordinator)

JICA Kenya Office

11. Ms. E. SUGITA Assistant Resident Representative,
JICA Kenya Office

M. A.



5. TRAINING PLAN

ANNEX II. FRAMEWORK OF THE TRAINING COURSES

Land Surveying

Training Courses	Number of Experts	Number of C/Ps	Annual Intake of Trainees	Contents of Training	Duration of Training
I. <u>Land Surveying Department</u>	Long Term Expert : 2	Head of Department : 1			
1. <u>Pre-service Diploma Course</u>		Lecturers : 10	: 24 x 2	7 terms of Tuition 2 terms of Industrial Attachment	<u>3.0 yrs.</u> 2,970 hrs.
(1) <u>Common Supportive Zone</u>		Senior Lecturer : 2		a. Social Studies b. Entrepreneurship Education c. Communication d. Computers e. Mathematics f. Physics g. Geography	924 hrs. 88 hrs. 154 hrs. 88 hrs. 88 hrs. 198 hrs. 154 hrs. 154 hrs.
(2) <u>Trade Support Zone</u>	Geodesy : 1	Lecturer : 5		h. Computer Assisted Mapping i. Management j. Photogrammetry and Remote Sensing k. Cartography	418 hrs. 66 hrs. 88 hrs. 132 hrs. 132 hrs.
(3) <u>Trade / Core Zone</u>	Cadastral Surveying : 1	Assistant Lecturer : 3		l. Land Law m. Surveying Instruments n. Topographical Surveying o. Cadastral Surveying p. Engineering Surveying q. Survey Control r. Project	968 hrs. 88 hrs. 110 hrs. 132 hrs. 110 hrs. 154 hrs. 308 hrs. 66 hrs.
(4) <u>Industrial Attachment</u>					660 hrs.
2. <u>In-service Higher Diploma Course</u>		Lecturers : 7	: 10	6 terms of Tuition 2 terms of Industrial Attachment	<u>2.5 yrs.</u>
		Senior Lecturer : 1 Lecturer : 2 Assistant Lecturer : 4		a. Mathematics b. Physics c. Cartography d. Computer Programming e. Plane Surveying f. Photogrammetry g. Field Astronomy h. Land Law i. Related Studies	

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Cartography

Training Courses	Number of Experts	Number of C/Ps	Annual Intake of Trainees	Contents of Training	Duration of Training
II. <u>Cartography Department</u>	Long Term Expert : 1	Head of Department : 1			
1. <u>Pre-service Diploma Course</u>		Lecturers : 7	: 25	7 terms of Tuition 2 terms of Industrial Attachment	3.0 yrs. 2,970 hrs.
(1) <u>Common Supportive Zone</u>		Senior Lecturer : 1		a. Social Studies b. Entrepreneurship Education c. Communication d. Computers e. Mathematics f. Physics g. Geography	924 hrs. 88 hrs. 154 hrs. 88 hrs. 88 hrs. 198 hrs. 154 hrs. 134 hrs.
(2) <u>Trade Support Zone</u>	Cartography : 1	Lecturer : 2		h. Computer Assisted Mapping i. Land Surveying j. Photogrammetry and Remote Sensing k. Management	418 hrs. 66 hrs. 132 hrs. 132 hrs. 88 hrs.
(3) <u>Trade / Core Zone</u>		Assistant Lecturer : 4		l. Applied Cartography m. Cartographic Reproduction n. Topographic and Cadastral Cartography o. Project	968 hrs. 308 hrs. 132 hrs. 462 hrs. 66 hrs.
(4) <u>Industrial Attachment</u>					660 hrs.
2. <u>In-service Higher Diploma Course</u>		Lecturers : 7	: 15	6 terms of Tuition 2 terms of Industrial Attachment	2.5 yrs.
		Senior Lecturer : 1 Lecturer : 2 Assistant Lecturer : 4		Not Available	

Photogrammetry & Remote Sensing

Training Courses	Number of Experts	Number of C / Ps	Annual Intake of Trainees	Contents of Training	Duration of Training
III. <u>Photogrammetry & Remote Sensing Department</u>	Long Term Expert : 1	Head of Department : 1			
I. <u>Pre-service Diploma Course</u>		Lecturers : 7	: 15	7 terms of Tuition 2 terms of Industrial Attachment	3.0 yrs. 2,970 hrs.
(1) <u>Common Supportive Zone</u>		Senior Lecturer : 1		a. Social Studies b. Entrepreneurship Education c. Communication d. Computers e. Mathematics f. Physics g. Geography	924 hrs. 88 hrs. 154 hrs. 88 hrs. 88 hrs. 198 hrs. 154 hrs. 154 hrs.
(2) <u>Trade Support Zone</u>	Photo-grammetry & Remote Sensing : 1	Lecturer : 2		h. Computer Assisted Mapping i. Land Surveying j. Cartography k. Management	418 hrs. 66 hrs. 132 hrs. 132 hrs. 88 hrs.
(3) <u>Trade / Core Zone</u>		Assistant Lecturer : 4		l. Remote Sensing m. Photogrammetry	968 hrs. 330 hrs. 638 hrs.
(4) <u>Industrial Attachment</u>					660 hrs.
2. <u>In-service Higher Diploma Course</u>		Lecturers : 7	: 5	6 terms of Tuition 2 terms of Industrial Attachment	2.5 yrs.
		Senior Lecturer : 1 Lecturer : 2 Assistant Lecturer : 4		Not Available	

Map Reproduction

Training Courses	Number of Experts	Number of C / Ps	Annual Intake of Trainees	Contents of Training	Duration of Training
IV. <u>Map Reproduction Department</u>	Long Term Expert : 1	Head of Department : 1			
I. <u>Pre-service Diploma Course</u>		Lecturers : 7	: 15	7 terms of Tuition 2 terms of Industrial Attachment	<u>3.0 yrs.</u> 2,970 hrs.
(1) <u>Common Supportive Zone</u>		Senior Lecturer : 1		a. Social Studies b. Entrepreneurship Education c. Communication d. Computers e. Mathematics f. Physics g. Geography	924 hrs. 88 hrs. 154 hrs. 88 hrs. 88 hrs. 198 hrs. 154 hrs. 154 hrs.
(2) <u>Trade Support Zone</u>	Map Reproduction : 1	Lecturer : 2		h. Computer Assisted Mapping i. Not Available j. Not Available k. Management	418 hrs. 66 hrs. 132 hrs. 132 hrs. 88 hrs.
(3) <u>Trade / Core Zone</u>		Assistant Lecturer : 4		l. Not Available m. Not Available n. Not Available o. Not Available	968 hrs. hrs. hrs. hrs.
(4) <u>Industrial Attachment</u>					660 hrs.

2

6. SOIL INVESTIGATION

DATE		NUMBER OF SAMPLE		TYPE OF SOIL		DEPTH		THICKNESS (CM)		DESCRIPTION OF MATERIALS		BLOWS ON 15 MM PENETRATION		STANDARD PENETRATION RESISTANCE		INDEX											
												Blows per 30cm		Blows per Metre of Penetration		DISTURBED UN DISTURBED REMARKS											
CLIENT: YAMASHITA SEKKEI INC.										GROUND LEVEL: N/A																	
PROJECT: SH/9457										GROUND WATER LEVEL: See schedule section TIME.																	
LOCATION RUARAKA										BORE HOLE NO 2																	
DATE: 11/11/94																											
<p>11-11-94</p> <p>SEE BOREHOLE LOGS FOR ROCK DATA</p>										0.50	1.00	Red silty clay soil	-X-X-	6	9	12	21										
										1.00	1.00	Red to dark brown silty clay	-X-X- E-T-A-	10	12	17	29										
										2.00	1.00	Red to dark brown silty clay with murray gravels	O-O D-O	18	20	25	45										
										3.00	1.00	Dark Brown Silty Clay with Murray Gravels	-X-X- O-T-O O-A-O-X	25	43	50	93										
										4.00	1.00	Dark brown silty clay	-X-X- X-X-X-														
										5.00	1.00	Dark brown silty clay to weathered grey tuff	△-△-△														
										6.00	1.86	Greyish weathered tuff with clay lumps.	△-△-△														
										8.00	2.60	Greyish weathered tuff	△-△-△														
										10.00		Blackish to Greyish Weathered Tuff	△-△-△														
										13.00	5.91		△-△-△														
16.00		Grey Tuff with Occasional Yellow Weathered Zones	△-△-△																								
17.00	2.00		△-△-△																								
18.00		Grey tuff with fine sand	△-△-△																								
19.00	1.42		△-△-△																								
20.00																											

LOCATION		ATTERBERG PARAMETERS							GRADING				COMPACTION		C.B.R.			ORGANIC WATER CONTENT %	SPECIFIC GRAVITY	REMARKS
Sample No.	Sample Depth (m)	PLASTIC LIMIT %	LIQUID LIMIT %	PLASTICITY INDEX %	LINEAR SHRINKAGE %	PASSING 420 µm %	PLASTICITY MODULUS %	PASSING 10mm %	PASSING 5mm %	PASSING 2mm %	PASSING 75µm %	OPTIMUM MOISTURE CONTENT %	MAXIMUM DRY DENSITY Mg/m ³	DRY %	4 DAYS SOAK %	SWELL %				
B/H.1	0.00-	24	49	25	12	85	2125	100	96	90	78	-	-	-	-	-	2.68			
S/No.1	0.50	19.7	24	25	12	85	2125	100	96	90	78	-	-	-	-	-	2.68			
B/H.1	0.50-	22	42	20	10	58	1160	100	100	80	47	21	1.819	-	-	-	2.60			
S/No.2	1.50	15.5	22	20	10	58	1160	100	100	80	47	21	1.819	-	-	-	2.60			
B/H.1	1.50-	20	45	25	13	67	1675	100	100	90	55	19	1.748	-	-	-	2.43			
S/No.3	2.50	30.1	20	25	13	67	1675	100	100	90	55	19	1.748	-	-	-	2.43			
B/H.2	0.00-	32	61	29	15	98	2842	100	100	100	93	-	-	-	-	-	2.64			
S/No.1	0.50	27.7	32	29	15	98	2842	100	100	100	93	-	-	-	-	-	2.64			
B/H.2	0.50-	34	63	29	15	99	2871	100	100	100	97	-	-	-	-	-	2.59			
S/No.2	1.50	27.0	34	29	15	99	2871	100	100	100	97	-	-	-	-	-	2.59			
B/H.2	1.50-	36	68	32	16	98	3136	100	100	99	95	27	1.337	-	-	-	2.72			
S/No.3	2.50	27.7	36	32	16	98	3136	100	100	99	95	27	1.337	-	-	-	2.72			
B/H.2	2.50-	31	68	37	18	94	3478	100	100	97	91	-	-	-	-	-	2.51			
S/No.4	3.50	28.6	31	37	18	94	3478	100	100	97	91	-	-	-	-	-	2.51			
B/H.2	3.50-	26	59	33	16	82	2706	100	100	96	69	-	-	-	-	-	2.42			
S/No.5	4.50	19.4	26	33	16	82	2706	100	100	96	69	-	-	-	-	-	2.42			
B/H.2	4.50-	24	43	19	10	88	1672	100	100	98	73	19	1.608	-	-	-	2.52			
S/No.6	5.50	20.3	24	19	10	88	1672	100	100	98	73	19	1.608	-	-	-	2.52			
B/H.3	0.00-	28	60	32	16	74	2368	100	100	88	68	-	-	-	-	-	2.72			
S/No.1	0.50	17.0	28	32	16	74	2368	100	100	88	68	-	-	-	-	-	2.72			
B/H.3	0.50-	22	56	34	16	67	2278	100	100	91	50	22	1.668	-	-	-	2.40			
S/No.2	1.50	13.1	22	34	16	67	2278	100	100	91	50	22	1.668	-	-	-	2.40			
B/H.3	1.50-	28	75	47	23	90	4230	100	100	97	83	25	1.499	-	-	-	2.36			
S/No.3	2.50	35.8	28	47	23	90	4230	100	100	97	83	25	1.499	-	-	-	2.36			



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Telex 22962 Nairobi

PROJECT NO. SH/9457

OPERATOR SHIKOLI

LOCATION RUARAKA

CHECKED J.S.S.

SURVEY OF PROJECT: KENYA

DATE 30/11/94

SUMMARY OF SOIL TEST RESULTS

APPENDIX SHEET

9094


TRIAxIAL SUMMARY

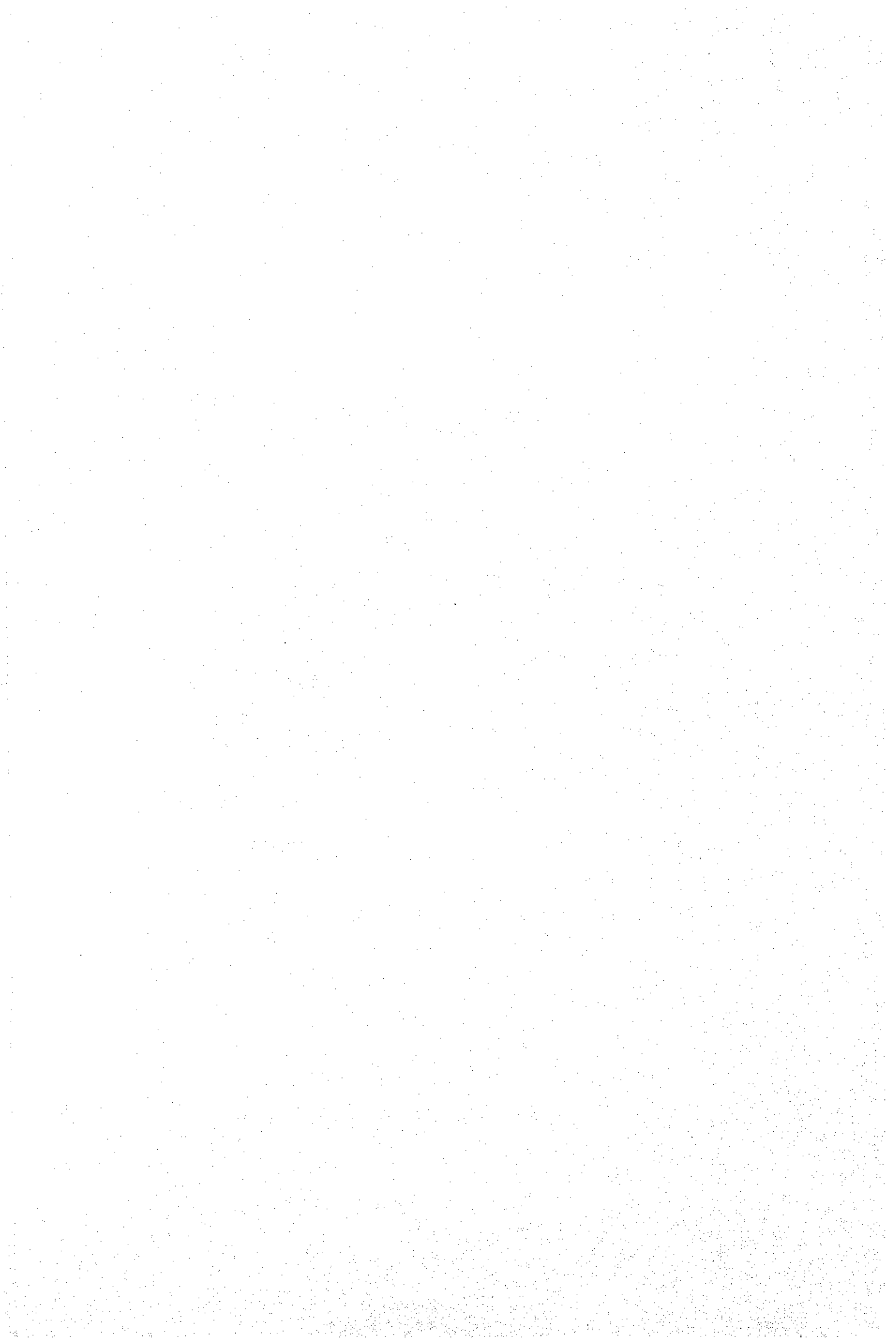
PROJECT: SH/9457 SURVEY OF KENYA

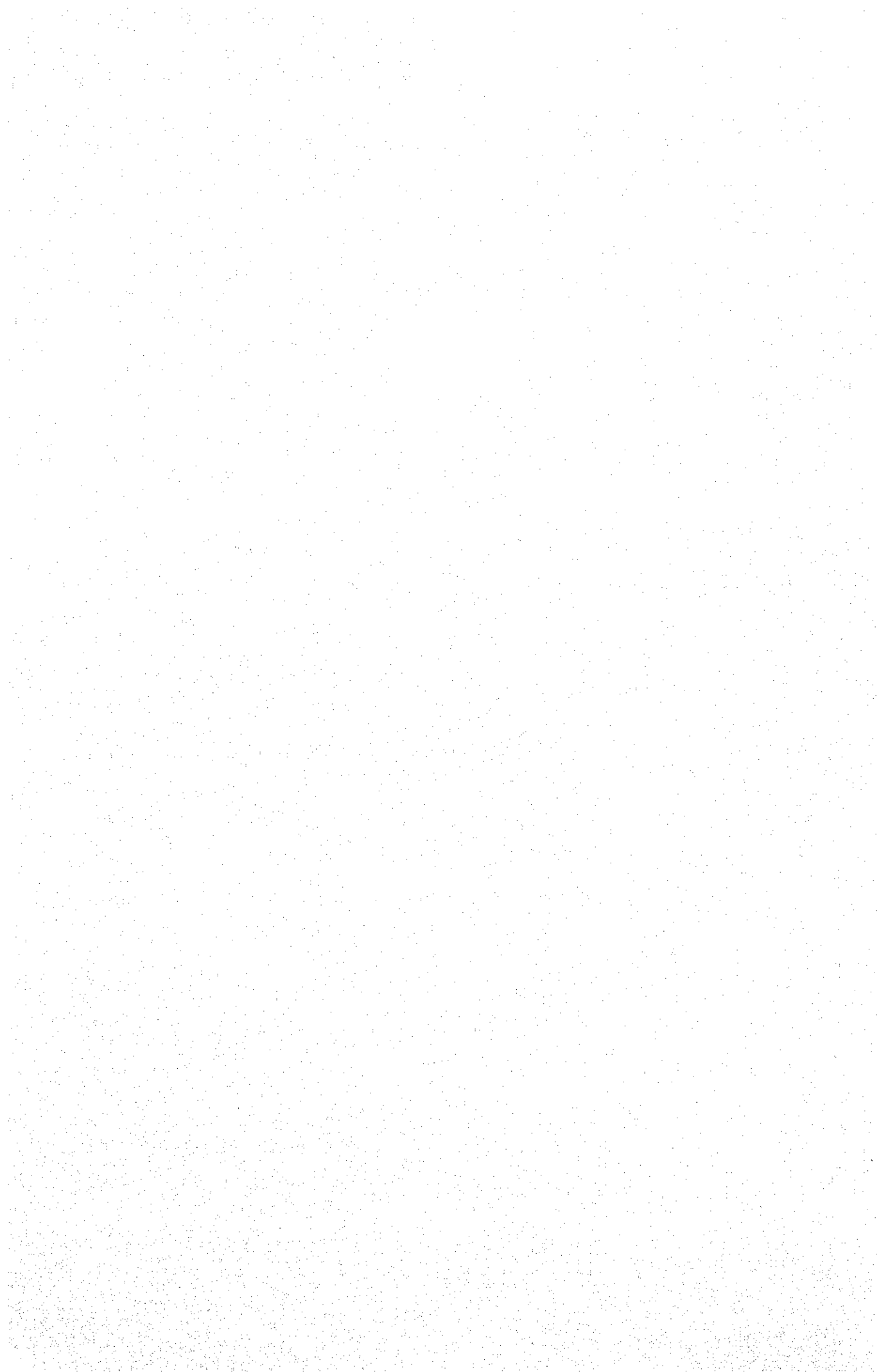
DATE: 30/11/94

LOCATION: RUARAKA

BY: J.S.S.

BORE HOLE	SAMPLE No.	DEPTH m	BULK DENSITY	DRY DENSITY	BACK PRESSURE	MOISTURE CONTENT %	$\phi =$	c=KN/m ²	REMARKS
1	1	0.50 - 1.0 m	2.145	1.854	10,30,60	15.7	12' 10"	11	
1	2	1.50 - 2.0m	1.875	1.576	" "	19.0	13' 7"	10	
1	3	2.50 - 2.60m	1.990	1.704	" "	16.8	8' 2"	12	
2	2	1.50 - 2.0m	2.010	1.350	" "	48.9	10' 6"	11	
2	4	3.50 - 3.64 m	2.085	1.712	" "	21.8	28' 10"	12	
2	5	4.50 - 4.60m	1.950	1.364	" "	43.0	37' 20"	11	
3	1	0.50 - 1.0m	2.293	2.060	" "	11.3	6' 1"	12	
3	2	1.50 - 2.0m	1.834	1.517	" "	20.9	48' 13"	10	
									
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									9086





JICA