OCTOBER 1991

SOLOMON ISLANDS

The Study on the Development Project of Henderson International Airport in Solomon Islands

FINAL REPORT
VOLUME Ⅲ : APPENDICES

OCTOBER 1991

JAPAN INTERNATIONAL COOPERATION AGENCY

LIST OF APPENDICES

APPENDIX TO CHAPTER 1

APPENDIX-1.3.1 AGREED SCOPE

SCOPE OF WORK

FOR

THE

STUDY

ON

THE DEVELOPMENT PROJECT

OF

HENDERSON INTERNATIONAL AIRPORT

IN

SOLOMON ISLANDS

AGREED UPON BETWEEN

MINISTRY OF TOURISM AND AVIATION

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

HONIARA, SOLOMON ISLANDS, MARCH 27, 1990

Mr. DANIEL HO'OTA
PERMANENT SECRETARY,
MINISTRY OF TOURISM
AND AVIATION,
GOVERNMENT OF
SOLOMON ISLANDS

宮永正二郎

Mr. SHOJIRO MIYANAGA
LEADER, JAPANESE
PRELIMINARY STUDY TEAM,
JAPAN INTERNATIONAL
COOPERATION AGENCY

In response to the request of the Government of Solomon Islands, the Government of Japan decided to conduct the Study on the Development Project of Henderson International Airport in Solomon Islands (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the Government of Solomon Islands.

The present document sets forth the Scope of Work with regard to the Study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are as follows;

(1) To prepare a master plan of the Henderson International Airport.

(2) To determine technical,economic and financial feasibility of short-term development plan to be formulated within their framework of master plan.

III. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover the following items;

1. Evaluation of existing situation

(1) Review of available data, information and projects relevant to the Study;
(2) Field surveys of the Henderson International Airport; and
(3) Evaluation of existing facilities and utilization of the Henderson International Airport.

2. Formulation of master plan

An appropriate master plan shall be prepared with the target year of 2010.

(1) Forecast of future air transport demand;
(2) Analysis of facilities requirements;
(3) Airport facilities and layout planning; and,
(4) Preparation of airport master plan.

3. Feasibility Study

Feasibility Study shall be conducted for short term development plan to be formulated within the frame work of master plan.

(1) Formulation of short term development plan;
(2) Preliminary design;
(3) Cost estimation;
(4) Airport management and operation planning;
(5) Implementation programme;
(6) Economic analysis;
(7) Financial analysis; and,
(8) Conclusion and recommendation of the Study.

IV. STUDY SCHEDULE

The Study shall be carried out in accordance with the attached tentative schedule as shown in Appendix. This schedule, however, is subject to change according to circumstances.

V. REPORTS

JICA shall prepare the following reports in English and submit them to the Government of Solomon Islands.

1. Inception Report (30 copies)
   This report is to describe the overall approach and implementation programme of the Study and to be submitted within one (1) month after commencement of the Study.

2. Progress Report (30 copies)
   This report is to describe provisional outcome of the first field survey and to be submitted at within three (3) months after commencement of the Study.
   The Government of Solomon Islands shall provide the Study Team with its comments during their stay in Solomon Islands.

3. Interim Report (30 copies)
   This report is to describe Master Plan and the outline of short-term development plan and to be submitted within six (6) months after commencement of the Study.
   The Government of Solomon Islands shall provide the Study Team with its comments during their stay in Solomon Islands.

4. Draft Final Report (30 copies)
   This report is to describe all the essential results of the Study and to be submitted within eight (8) months after commencement of the Study. The Government of Solomon Islands shall provide its comments within one (1) month after the receipt of the Draft Final Report.

5. Final Report (60 copies)
   This report is to be finalized taking into consideration of the comments of the Government of Solomon Islands on the Draft Final Report and to be submitted to the Government of Solomon Islands within two (2) months after receiving the above mentioned comments.

VI. UNDERTAKINGS OF THE GOVERNMENT OF SOLOMON ISLANDS

The Government of Solomon Islands will accord privileges, exemptions and other benefits to the Japanese Study Team (hereinafter referred to as "the Study Team").

1. To facilitate smoothe conduct of the Study, the Government of Solomon Islands shall take the following necessary measures;

(1) To secure the safety of the Study Team.

(2) To permit the members of the Study Team to enter, leave and sojourn in Solomon Islands for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees;

(3) To exempt the members of the Study Team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Solomon Islands for the conduct of the Study;

(4) To exempt the members of the Study Team from income tax and other charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study;

(5) To provide necessary facilities to the Study Team for remittances as well as utilization of the funds introduced into Solomon Islands from Japan in connection with the implementation of the Study;

(6) To secure permission for entry into private properties or restricted areas for the conduct of the Study;

(7) To secure permission for the Study Team to take all data and documents (including maps, photographs) related to the Study out of Solomon Islands to Japan;

(8) To provide medical services as needed. Its expenses will be chargeable on members of the Study Team.

2. The Government of Solomon Islands shall bear claims, if any arises against the members of the Study Team resulting from, occurring in the course of, of otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Study Team.

3. Ministry of Tourism and Aviation of Solomon Islands (hereinafter referred to as "MTA" shall act as the counterpart agency to the Study Team and also as coordinating body in relation with other governmental and non-governmental organization concerned for the smooth implementation of the Study.

4. MTA shall, at its own expense, provide the Study Team with the followings, in cooperation with other related organizations concerned;
   (1) Available data and information related to the Study.
   (2) Counterpart personnel.
   (3) Suitable office space with necessary equipments in Honiara, and
   (4) Credentials or identification card.

VII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures;

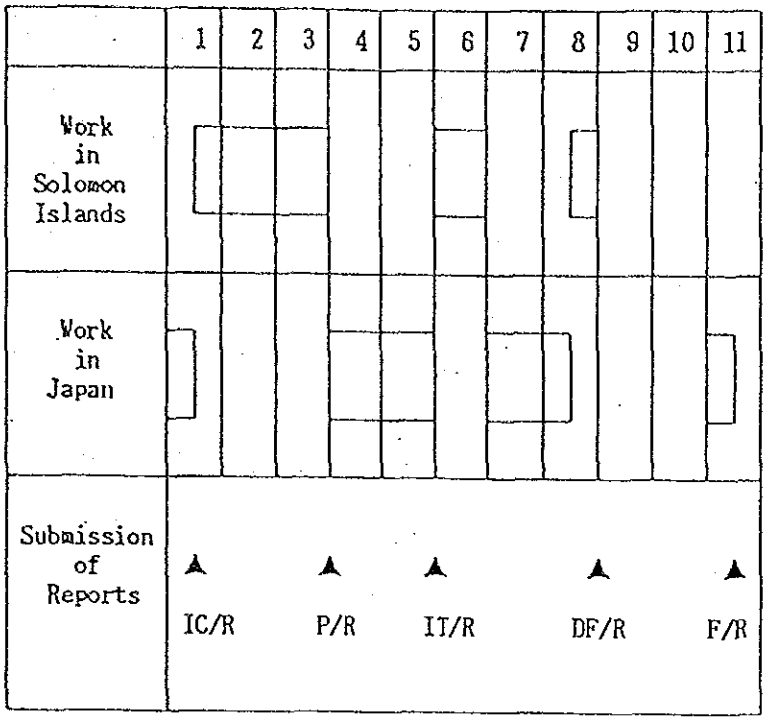
(1) To dispatch, at its own expense, the Study Team to Solomon Islands.
(2) To pursue technology transfer to the Solomon Islands counterpart personnel in the course of the Study.

VIII. OTHERS

JICA and MTA shall consult with each other in respect of any matter that may arise from or in connection with the Study.

Appendix I

TENTATIVE SCHEDULE OF THE STUDY



IC/R : Inception Report
P/R : Progress Report
IT/R : Interim Report
DF/R : Draft Final Report
F/R : Final Report

APPENDIX-1.5.1 MINUTES OF MEETING ON THE INCEPTION REPORT

MINUTES OF MEETING

ON

THE INCEPTION REPORT ON THE STUDY ON THE DEVELOPMENT PROJECT

OF

HENDERSON INTERNATIONAL AIRPORT

IN

SOLOMON ISLANDS

A team organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") arrived in Honiara, Solomon Islands on October 7, 1990. JICA team consists of JICA Advisory Committee headed by Mr. Masamichi Watanabe and JICA Study Team headed by Mr. Shota Morita.

On October 8, 1990, the JICA team made courtesy calls on Ministry of Foreign Affairs, Ministry of Provincial Government, and Ministry of Tourism and Aviation. And it submitted thirty (30) copies of the Inception Report on the Study on the Development Project of Henderson International Airport (hereinafter referred to as "the Study"). Following the above, the JICA team carried out a brief site investigation at airport, NDB and VOR sites on October 9, 1990.

On October 10, 1990, the JICA team held a meeting on the Inception Report with the Government of Solomon Islands consisting of Ministry of Tourism and Aviation and other relevant government organizations at a meeting room of Mendana hotel. The Government of Solomon Islands (hereinafter referred to as "Solomon Islands side") was headed by Mr. James Saliga, Permanent Secretary of Ministry of Tourism and Aviation. A list of attendants is indicated in Attachment - 1.

The Inception Report was in principle accepted and agreed upon by the Solomon Islands side with major discussions as indicated in Attachment - 2.

Upon the acceptance of the Inception Report, the Solomon Islands side assured the JICA team to assign counterpart personnel for the Study.

Honiara, October 12, 1990

JAMES SALIGA
Permanent Secretary,
Ministry of Tourism and Aviation,
on behalf of
The Government of Solomon Islands

SHOTA MORITA
Leader,
JICA Study Team

渡辺正道

MASAMICHI WATANABE
Chairman,
JICA Advisory Committee

Attachment - 1

LIST OF ATTENDANTS

Solomon Islands Side

1.	Mr. James Saliga	Permanent Secretary, Ministry of Tourism and Aviation
2.	Mr. Wilson Liligeto	Under Secretary, Ministry of Tourism and Aviation
3.	Mr. Garnet Babaua	Principal Civil Aviation, Ministry of Tourism and Aviation
4.	Mr. Sam Tagana	Chief of Asian Desks, Ministry of Foreign Affairs
5.	Mr. Japhet Waipora	Under Secretary, Ministry of Provincial Government
6.	Mr. Steve Likaveke	Chief Physical Planning Officer, Ministry of Agriculture and Lands
7.	Mr. Harry Sosimo	Senior Lands Officer. Ministry of Agriculture and Lands
8.	Mr. Hayes Perkins	Consultant, Ministry of Agriculture and Lands
9.	Mr. Hubert Rutland	Explosive Ordinance Disposal, Ministry of Police and Justice

Japanese Side

JICA Advisory Committee

1.	Mr. Masamichi Watanabe	Chairman of JICA Advisory Committee
2.	Mr. Kouji Kitamura	Member of JICA Advisory Committee
3.	Ms. Rika Inada	Project Officer, JICA

JICA Study Team

1.	Mr. Shota Morita	Leader of JICA Study Team
2.	Mr. Hideki Murata	Member of JICA Study Team
3.	Mr. Hiroyuki Ueda	Member of JICA Study Team
4.	Mr. Tadamitsu Ito	Member of JICA Study Team
5.	Mr. Isao Fukuwatari	Member of JICA Study Team
6.	Mr. Ryujirou Yamagishi	Member of JICA Study Team

Embassy of Japan

1.	Mr. Isamu Yamamoto	Charge' d'Affaires a.i.

MAJOR ITEMS DISCUSSED

Major items discussed during the inquiry/reply session were as follows:

1) An inquiry was made by the Solomon Islands side regarding the relations between the project implementation and the Study.

   The JICA team replied that the Study was not the presupposition for a grant aid from the Government of Japan and that the implementation of the project be separately considered if the Government of Solomon Islands makes an official request for a Japanese aid to the Project based on results of the Study.

2) The Solomon Islands side requested to shorten the 13-month Study period in light of urgency of the project.

   The JICA team explained that airport master planning was necessary prior to the construction of the short-term development and that shortening of the Study period was difficult due to the anticipated work volume as well as three-month recess to be caused by budgetary system of the Government of Japan. The JICA team also mentioned that provisional outcome of the Study concerning the airport master plan and work items of the short-term development would be outlined in the Interim Report in February 1991. It continued that the Study would substantially be completed by the Draft Final Report to be submitted in August 1991 because this report would cover all the essential study items scheduled in the Inception Report.

3) A possibility to utilize the financial assistance other than the Government of Japan was mentioned by the Solomon Islands side in order to solve the present congestion problem of the passenger terminal building.

   The JICA team understood the said urgent need. However, it recommended to wait for the Study results to make efficient and effective expenditure for an orderly development of the airport.

4) A need of a new runway was questioned by the Solomon Islands side.

   Although the need should be investigated in-depth during the course of the Study, the JICA team replied that it did not foresee the need at the moment of the meeting.

5) The Solomon Islands side advised the JICA team that whenever visiting the surrounding area of the airport, it should contact the Bomb Detection Squad first in order to avoid bomb blasting hazard.

   The JICA team appreciated the advice and promised to inform the squad of its schedule for the topographic survey and soil investigation.

APPENDIX-1.5.2 COUNTERPART TEAM AND AIRPORT DEVELOPMENT COMMITTEE OF SOLOMON ISLANDS

Counterpart Team

1.	Mr. Garnett Babaua	-	Principal Civil Aviation Officer (Operations)
2.	Miss Veronica Ruala	-	Physical Planner
3.	Mr. Peter Forau	-	Senior Tourism Officer (Planning)
4.	Mr. Joe Rausi	-	Deputy Director/Bilateral Aid Management
5.	Mr. Jhon Sogabule	-	Principal Engineer/Navigational Aids
6.	Mr. Michael Anita	-	Airport Manager
7.	Mr. James Mac clean	-	Planning Officer/Guadalcanal Province

Airport Development Committee

1.	Mr. Billy Maelagi	-	Deputy Director, Civil Aviation
2.	Mr. Ben Kere	-	Chief Engineer
3.	Mr. Steve Likaveke	-	Chief Physical Planner
4.	Mr. Philip Kapini	-	General Manager, Guadalcanal Development Authority
5.	Mr. Wilson Liligeto	-	Under Secretary/MTA
6.	Mr. Sam Maezama	-	Chief Civil Engineer/MTWU
7.	Mr. Penrose Palmer	-	Deputy Commissioner of Lands
8.	Capt. Howard Bailes	-	Superintendent of Flight Standards
9.	Mr. Japhet Waipora	-	Under Secretary/MPG
10.	Mr. Anthony Makabo	-	Principal Industrial Officer

APPENDIX-1.5.3 LIST OF DATA AND INFORMATION COLLECTED

1. National and Sectorial Development Plans

(1) Programme of Action 1989 - 1993, July 1989, Solomon Island People's Alliance Party Government.

(2) Solomon Islands Government, Volumes I and II, October 1989, Ministry of Tourism and Aviation.

(3) National Tourism Policy of Solomon Islands, July 1989, Ministry of Tourism and Aviation.

(4) Solomon Islands 1990 Development Estimates, January 1990, Ministry of Finance and Economic Planning.

2. Air Transport

(1) Solomon Islands Aeronautical Information Publication (AIP), Ministry of Tourism Aviation.

(2) Civil Aviation Act 1986, National Parliament of Solomon Islands.

(3) The Civil Aviation Security Regulations 1987, August 1987, Ministry of Port and Communications.

(4) Air Navigation (Fees) Regulations 1987, August 1987, Ministry of Port and Communications.

3. Previous Study on Airport Development

(1) Honiara Airport Development Study, Volume I: Final Report, Volume II: Working Papers, Volume III: Drawings, September 1981, ACCA.

(2) Henderson Airport Development, Volume 1: Report, Volume 2: Annexes and Drawings, March 1984, Kocks Consult GMBH.

(3) Henderson Redevelopment Runway Bearing Capacity, September 1986, Kocks Consult GMBH.

(4) Report on Survey of Development Assistance Needs in Civil Aviation of the South Pacific Sub-region, December 1986, ICAO/UNDP.

4. Air Traffic Data

(1) Calls by Aircraft on International Routes, 1970-86 Statistical Office.

(2) Monthly Statistics of Aircraft Movements, Passengers and Cargo in 1989 - International (for Solomon Airlines seats only), Solomon Airlines.

(3) Domestic Air Traffic Statistics, 1980-86, Solomon Airlines.

(4) Monthly Statistics of Aircraft Movements, Passengers and Cargo in 1989 - Domestic, Solomon Airlines.

(5) Domestic Air Traffic Statistics, 1985-89, Western Pacific Air Services.

(6) Time Tables of Airlines Services, Solomon Airlines, Qantas, Air Niugini, Air Nauru and Western Pacific Air Services.

5. Facilities of Henderson Airport

(1) Henderson Airport Development Tender Documents, Ministry of Transport, Communications and Government Utilities.

- Civil Works
- Navcom/Navaids
- Aeronautical Ground Lights

(2) Layout Plans of Existing Airport Buildings, Ministry of Transport Works and Utilities.

- Passenger Terminal Building
- Airport Operation Office
- Meteorological Service Office
- VIP Lounge
- Control Tower

- Administration Office Building
- Fire Station

(3) List of Existing Air Navigation Equipment with their equipment type, commissioned year, performance and name of manufacturer.

1) NDB, VOR, DME
2) FIS, AFTN, ATS direct speech
3) Approach lights, PAPI, runway threshold/end lights runway edge lights, taxiway edge lights, apron flood lights, aerodrome beacon, wind direction illumination lights, obstruction lights.
4) Meteorological Facilities
5) Emergency Power Supply

(4) Facility Outline of Airport Utilities

1) Power Supply System (capacity, voltage)
2) Water Supply System (capacity, water quantity)
3) Sewage Disposal System (method of treatment)
4) Solid Waste Disposal System (method of disposal)
5) Telephone System (capacity)

(5) List of Rescue and Fire Fighting Equipment with their equipment type, commissioned year, performance and name of manufacturer.

1) Medium Tender Vehicle
2) Rapid Intervention Vehicle

(6) Facility Outline of Aviation Fuel Supply System

1) Fuel tank capacity by fuel grade
2) Supply method to aircraft

(7) Outline of Aircraft Maintenance

1) Solomon Airlines
2) Western Pacific Air Service

(8) Number of staff houses and families living there.

6. Airport Operation, Maintenance and Finance

(1) Organization Chart and Number of Staff by names of functions.

(2) Annual Airport Income by income items 1986-1990.

(3) Annual Expenditure by items including airport operation and maintenance 1986-1990.

7. Meteorology at Henderson Airport

(1) Henderson Airport Climeteorological Data 1975-1986 (Wind, Cloud Base and Visibility), 1987, Solomon Islands Meteorological Service.

(2) Henderson Airport Climeteorological Data 1974-1989 (Temperature and Rainfall), 1990, Solomon Islands Meteorological Service.

(3) Plan of Action May 1989-1990, Solomon Islands Meteorological Service.

(4) A Plan to Establish National Forecasting Service, Solomon Islands Meteorological Service, July 1990.

8. Land Use and Land Tenure

(1) Existing Land Use Map, Scale 1:10,000.

(2) Outline of Industrial Estate Project.

(3) Land Tenure around Henderson Airport.

(4) Land and Titles Act, Ministry of Law.

9. Development Plan and Project related to Airport Development

(1) Honiara Town Council Development Plan 1988-1992, Honiara Town Council office, April 1988.

(2) Guadalcanal Province Development Plan 1988-1992, Provincial Planning Office, August 1988.

(3) Basic Design Study on the Project for Reconstructing the Lungga Bridge in Solomon Islands, Draft Final Report, JICA, September 1989.

(4) Solomon Islands Rural Transport Project, Final Report, TechEcon, May 1989.

(5) Design Report Eight Bridges in Guadalcanal, Cameron McNamara and Partners.

(6) Solomon Islands Tourism Development Plan 1991-2000, Draft Final Report, Tourism Council of the South Pacific, August 1990.

(7) Solomon Islands Visitor Survey, 1988, Tourism Council of the South Pacific.

(8) The Economic Impact of International Tourism on the National Economy of the Solomon Islands, UNDP/WTO 1987.

10. Statistics

(1) Statistical Yearbook, 1984, 1985, 1986 Statistics Office.

(2) Provincial Statistics, July 1987, Statistics Office.

(3) National Accounts of Solomon Islands, 1988, 1989 Statistics Office. Quarterly Review, Central Bank of Solomon Islands, June 1990.

(4) Labor Force Statistics, September 1989, Statistics Office.

(5) Trade Report, October 1988, Statistics Office.

(6) Tourism Statistics Bulletin, up to 2nd quarter 1990, Statistics Office.

11. Census

(1) Report on Census of Population 1986, Basic Information, 1988, Statistics Office.

(2) 1986 Population Census, Data Analysis, 1989, Statistics Office.

(3) Survey of Business Activities 1986, September 1988, Statistics Office.

12. Maps

(1) 1:3,000,000 Geographic Map of Solomon Islands, Survey and Mapping Division, Solomon Islands Government.

(2) 1:150,000 Geographic Map of Guadalcanal Island, Survey Division, Ministry of Agriculture and Lands.

(3) 1:50,000 Geographic Maps of Guadalcanal Island, Survey Division, Ministry of Agriculture and Lands.

(4) 1;10,000 Geographic Maps (Guadalcanal Sheets, 8 sheets) Survey Division, Ministry of Agriculture and Lands.

(5) 1:2,500 Geographic Maps (Honiara Sheet, 16 sheets) Survey Division, Ministry of Agriculture and Lands.

13. Local Construction

(1) National Building Code, - 1990, Australian International Development Assistance Bureau, September 1990.

(2) List of Engineering and Architecture Firms in Solomon Islands.

(3) List of General Contractor and Quantity Surveyor in Solomon Islands.

(4) List of Construction Materials Suppliers in Solomon Islands.

(5) List of Construction Equipment available in Solomon Islands,

(6) Price List of Construction Materials, Equipment and Works

- Ready Mix and Concrete Blocks (SIIL)
- Local Timber (Pacific Timber)
- Building Materials (Bowmans)
- Plant Hire Rates (Shorncriff)
- Plant Hire Rates (Earthmovers)

(7) Building Code of Australia 1990, Australian Uniform Building Regulations co-ordinating Council

(8) Building Materials Price Index Queensland July - December 1990, Gordell-Leaders in Construction Industry Information.

14. Environment

(1) Solomon Islands Public Health Bill 1990.

(2) The Ordinances of the Solomon Islands Protectorate, British Solomon Islands Protectorate, December 1970.

15. Others

(1) Foreign Investment Guide, Foreign Investment Division, Prime Ministers Office.

Bulletin One, August 1984
Bulletin Two, June 1984
Bulletin Three, August 1984

APPENDIX-1.5.4 MINUTES OF MEETING ON THE INTERIM REPORT

MINUTES OF MEETING

ON

THE INTERIUM REPORT ON THE STUDY ON THE DEVELOPMENT PROJECT

OF

HENDERSON INTERNATIONAL AIRPORT

IN

SOLOMON ISLANDS

MARCH 1, 1991

A team organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") arrived in Honiara, Solomon Islands on February 24, 1991. JICA team consists of JICA Advisory Committee headed by Mr. Koji Kitamura and JICA Study Team headed by Mr. Shota Morita.

On February 25, 1991, the JICA team made courtesy calls on Ministry of Foreign Affairs, and Ministry of Tourism and Aviation (MTA). And it submitted thirty (30) copies of the Interim Report on the Study on the Development Project of Henderson International Airport (hereinafter referred to as "Study").

Two meetings were held on the Inception Report of the Study at Mendana Hotel on February 26 and 28, 1991. The meetings chaired by Mr. James Saliga, Permanent Secretary of MTA were attended by key officials of various relevant organizations of the Government of Solomon Islands (hereinafter referred to as "Solomon Islands side), Mr. Isamu Yamamoto, Charge' d' Affaires a.i, Embassy of Japan in Solomon Islands and JICA Team. Attendants of each meeting are listed separately in Attachments - 1 and 2.

The first meeting was mainly devoted for the presentation of the Inception Report by the Study Team and a brief inquiry/reply session regarding the selection of an optimum passenger terminal location. The second meeting held after in-house meeting of the Solomon Islands side was devoted to discuss major design policies that needed confirmation for the preparation of the Draft Final Report.

As a result of the two meetings, the Interim Report was in principle accepted and agreed upon by the Solomon Islands side including various major design policies confirmed. Those confirmed major design policies are indicated in Attachment -3.

Honiara, March 1, 1991

JAMES SALIGA
Permanent Secretary,
Ministry of Tourism and Aviation
on behalf of
The Government of Solomon Islands

SHOTA MORITA
Leader,
JICA Study Team

KOJI KITAMURA
Acting Chairman,
JICA Advisory Committee

Attachment - 1

LIST OF ATTENDANTS

(February 26, 1991)

Solomon Islands Side

Name	Title
Mr. ABUITO'O, Walton	Principal Policy Analyst, Prime Minister's Office
Mr. ANITA, Michael	Airport Manager, Civil Aviation Division,
Mr. BAILES, Howard	PCAO FS, Civil Aviation Division
Mr. BAURA, John	General Manager, Solomon Airlines
Mr. BONGINA, David	Senior Finance Officer (DB), Ministry of Finance & Economic Planning
Mr. CARR, John N.	Director of Civil Aviation
Mr. FANEGA, Shadrach	Under Secretary (Planning), Ministry of Finance & Economic Planning
Mr. HAROLD, Joseph	Under Secretary, Ministry of Commerce & Primary Industry
Mr. KERE, Benjamin	Chief Engineer,
Mr. KRAUS, Gus	Manager Commercial Services, Solomon Airlines
Mr. LAURENSON, Noel	Manager Airline Operations, Solomon Airlines
Mr. LIKAVEKE, Steve	Chief Physical Planner, Ministry of Agriculture and Lands
Mr. LILIGETO, Wilson	Under Secretary, Ministry of Tourism & Aviation

Mr. MAKINI, Donald R.	Engineer Ministry of Transport Works & Utilities
Mr. OTI, Patteson	Permanent Secretary, Ministry of Provincial Government
Ms. RUALA, Veronica	Physical Planning Assistance, Ministry of Agriculture and Lands
Mr. SALIGA, James T.	Permanent Secretary, Ministry of Tourism & Aviation
Mr. TAGANA, Sam	Chief of Asian Desks, Ministry of Foreign Affairs
Mr. THAO, Samuel Samanea	Manager Investment, Guadalcanal Development Authority

Japanese Side

JICA Advisory Committee

1.	Mr. Koji Kitamura	Acting Chairman of JICA Advisory Committee
2.	Mr. Tatsuya Yanai	Member of JICA Advisory Committee
3.	Mr. Fumio Ishikawa	Project Officer, JICA

JICA Study Team

1.	Mr. Shota Morita	Leader of JICA Study Team
2.	Mr. Hideki Murata	Member of JICA Study Team
3.	Mr. Tadamitsu Ito	Member of JICA Study Team
4.	Mr. Isao Fukuwatari	Member of JICA Study Team
5.	Mr. Ryujirou Yamagishi	Member of JICA Study Team

Embassy of Japan

1.	Mr. Isamu Yamamoto	Charge' d'Affaires a.i.

Attachment -2

LIST OF ATTENDANTS

(February 28, 1991)

Solomon Islands Side

Name	Title
Mr. ABUITO'O, Walton	Principal Policy Analyst, Prime Minister's Office
Mr. ANITA, Michael	Airport Manager, Civil Aviation Division,
Mr. BAILES, Howard	PCAO FS, Civil Aviation Division
Mr. BAURA, John	General Manager, Solomon Airlines
Mr. CARR, John N.	Director of Civil Aviation
Mr. HAROLD, Joseph	Under Secretary, Ministry of Commerce & Primary Industry
Mr. KERE, Benjamin	Chief Engineer,
Mr. LAURENSON, Noel	Manager Airline Operations, Solomon Airlines
Mr. LIKAVEKE, Steve	Chief Physical Planner, Ministry of Agriculture and Lands
Mr. LILIGETO, Wilson	Under Secretary, Ministry of Tourism & Aviation
Mr. MAKINI, Donald R.	Engineer Ministry of Transport Works & Utilities
Mr. SALIGA, James T.	Permanent Secretary, Ministry of Tourism & Aviation

Mr. TAGANA, Sam	Chief of Asian Desks, Ministry of Foreign Affairs
Mr. THAO, Samuel Samanea	Manager Investment, Guadalcanal Development Authority

Japanese Side

JICA Advisory Committee

1. Mr. Koji Kitamura	Acting Chairman of JICA Advisory Committee
2. Mr. Tatsuya Yanai	Member of JICA Advisory Committee
3. Mr. Fumio Ishikawa	Project Officer, JICA

JICA Study Team

1. Mr. Shota Morita	Leader of JICA Study Team
2. Mr. Hideki Murata	Member of JICA Study Team
3. Mr. Tadamitsu Ito	Member of JICA Study Team
4. Mr. Isao Fukuwatari	Member of JICA Study Team
5. Mr. Ryujirou Yamagishi	Member of JICA Study Team

Embassy of Japan

1. Mr. Isamu Yamamoto	Charge' d'Affaires a.i.

MAJOR DESIGN POLICIES CONFIRMED

Major design policies confirmed during the meetings for the preparation of the Draft Final Report of the Study are as follows:

1. AIR TRAFFIC DEMAND FORECAST

1) Air traffic demand forecasts except design volumes of international peak hour passengers are agreed by the Solomon Island side.

2) Considering the fact that B737-200 (100 seater) of the Solomon Airlines will be replaced by B737-400 (130 seater) in May 1992 and similar trends in the region, design peak hour passengers of international traffic should be modified from 310 (two movements of B767, i.e 220 x 2 x 0.7 = 310) to 360 (simultanious operation of two B737s, i.e. 130 x 4 x 0.7 = 360).

2. OPTIMUM LOCATION OF NEW PASSENGER TERMINAL AREA AND RELEVANT REQUIREMENTS

1) Out of the four alternatives for siting a new passenger terminal area, Alt-T2, which locates the new terminal area on the west side of the existing passenger terminal and the AVIS was selected as the optimum terminal location because of the reasons and conditions as follows:

- It was decided earlier to co-locate international and domestic passenger facilities to avoid operational inconvieniences to be caused by seperately located terminals;

- By avoiding disruption on AVIS facility, it can be free from relocation problems such as compensation expenses or construction delay due to negotiation at least during a short-term development phase;

- It offers a possibility to utilize the structure of the AVIS maintenance shop to house flight kitchen facility if so desired by Solomon Airlines; and

- It provides the passenger terminal with sufficient expansibility and flexibility to cope with the future demand change;

2) Some other items regarding the airport layout plan in relation to the selection of Alt-T2 are as follows:

   - Proposed apron size is 105 x 130m to accommodate two B767s;

   - A cargo handling facilities to be required for the short-term development will be housed in the existing terminal. The proposed cargo terminal site in Alt-T2 should remian as it is for construction of a new cargo terminal in long-term development;

   - VIP room facilities should be located in the new terminal building;

   - Location of the new fire station remains at the proposed site in Alt-T2 with provision of the existing perimeter road connecting to the existing apron; and

   - Instead of a proposed stub-taxiway to connect the runway and the proposed maintenance apron in Alt-T2, a provision of a connecting taxiway parallel to the runway and between the new passenger apron should be indicated in the layout plan.

3. EXISTING PASSENGER TERMINAL

The existing passenger terminal will be renovated to accommodate the following facilities:

1) Airport operation office;

2) Airport administration office except a part of the same to be accommodated in the new passenger terminal building;

3) Air cargo handling facilities;

4) Charter flight companies office;

4. NEW PASSENGER TERMINAL

The new passenger terminal building will have a total floor area of approximately 4,000 sq.m which is calculated as follow:

International passenger terminal: 360 Pax x 9.3 sq.m/Pax	=	3,350 sq.m
Domestic passenger terminal: 80 Pax x 5.0 sq.m/Pax	=	400 sq.m
VIP Room	=	120 sq.m
Administration & allowance	=	130 sq.m
Total	=	4,000 sq.m

The building will accommodate the following facilites:

1) Arrivals hall with green/red processing channels;

2) Departure hall including CIP lounge;

3) Customs and immigration services and offices for departure and arrival;

4) Quarantine services and office for arrival;

5) First aid room;

6) Airport security service and office;

7) Airline offices;

8) A part of CAD offices (Airport Manager room);

9) Baggage carousels for inbound and outbound baggage of international passengers;

10) Duty-free concession for arriving and departing passengers;

11) Catering facilities including bar facilities;

12) Bank;

13) Post office;

14) Public telephones;

15) Car rental office;

16) Hotel and tourism information;

17) News agency/card gift shop;

18) Domestic passenger terminal facilities;

19) VIP room;

20) Observation deck:

21) Police office; and

22) A part of MET office (operation).

5. **OTHER ISSUES**

1) Adequate provisions will be made for internal services, i.e. water, power, telephone, etc.;

2) Adeguate refuelling hydrants on the apron area may be provided by Shell company;

3) Necessary fire protection will be provided throughout both terminals;

4) The runway will be overlayed to cater for the safe operation of B767 class aircraft. (The runway length will remain as 2,200 meters in the short term development period);

5) Natural ventilation with a necessary mechanical support will be adopted to the terminal building except for airline offices, government offices, VIP and CIP lounges which will be airconditioned; and

- END -

APPENDIX-1.5.5 MINUTES OF MEETING ON ILS INSTALLATION

MINUTES OF MEETING

ON

ILS INSTALLATION

FOR

HENDERSON INTERNATIONAL AIRPORT

IN

SOLOMON ISLANDS

MARCH 18, 1991

Two meetings were held to discuss which runway threshold would be more desirable as for the precision approach direction. Attendants of the meetings were as follows:

1) **1st Meeting, March 8, 1991**

- Captain Trevor Ancell, Chief Pilot, Solomon Airlines
- Captain Tony Parrish, Fleet Captain, Solomon Airlines
- Mr. John Carr, Director of Civil Aviation, MTA
- Mr. Tadamitsu Itoh, Member of JICA Study Team
- Mr. Hideki Murata, Deputy Team Leader of JICA Study Team

2) **2nd Meeting, March 15, 1991**

- Captain Tony Parrish, Fleet Captain, Solomon Airlines
- Mr. Howard Bailes, PCAO FS, Civil Aviation Division
- Mr. Tadamitsu Itoh, Member of JICA Study Team
- Mr. Hideki Murata, Deputy Team Leader of JICA Study Team

Some points worth noting that were identified by Messrs. Ancell and Parrish from their flying experience at Henderson Airport are as follows:

1) Although east to south-east winds are common in dry season, west to north-west winds occur during January to March with low ceiling height in the vicinities of mountains in RWY06 approach area;

2) Pilots flying small aircraft have experienced fairly strong wake turbulences in the vicinities of mountains in RWY06 approach area when poor weather conditions with low ceiling height prevail in the area;

3) Due to the fact that there is neither terminal control area nor an aerodrome control zone within Honiara FIR, all jet aircraft approaching to Henderson Airport from any directions need to fly over the existing VOR/DME before commencing desent. As a result, straight-in approach can not be established at either end of the runway regardless of the IIS installation.

In addition to the abovementioned points, it was revealed through contacting the Ministry of Agriculture and Lands that use of a narrow land strip within Levers plantation ~~can~~ will be ~~granted~~ negotiated for installation of a precision approach lighting system (ALS) for RWY24. Due to the coast line and the existing Henderson Road at the extended runway centreline of RWY24, the ALS for RWY24 would be some 750m in total length. Nevertheless, this costly extension of the ALS over Alligator Creek would greatly contribute for earlier recognition of the RWY24 ALS by pilots. It was also confirmed that probable head-on aircraft operation (e.g. landing at RWY24 and taking-off at RWY06) would not create serious problem if proper air traffic control system is employed.

Taking into considerations the abovementioned points as well as all the points mentioned in the Interim Report, it was concluded to propose ILS installation for RWY24 approach.

JAMES SALIGA
Permanent Secretary
Ministry of Tourism and Aviation
The Government of Solomon Islands

HIDEKI MURATA
Deputy Team Leader
JICA Study Team

APPENDIX-1.5.6 MINUTES OF MEETING ON THE PASSENGER TERMINAL BUILDING

MINUTES OF MEETING

ON

THE LAYOUT PLANS OF PASSENGER TERMINAL BUILDING

OF

HENDERSON INTERNATIONAL AIRPORT

IN

SOLOMON ISLANDS

March 18, 1991

On March 13, 1991, a meeting was held to finalize layout plans for a new passenger terminal building and the existing passenger terminal building to be renovated.

The meeting chaired by Mr. James Saliga, Permanent Secretary of Ministry of Tourism and Aviation were attended by key officials of various relevant governmental organizations of the Solomon Islands (hereinafter referred to as "Solomon Islands side") and members of the JICA Study Team. Attendants of the meeting are listed in Attachment -1.

After the introductory speech by Mr. J. Saliga, the Study Team made presentation of the layout plans of the abovementioned two buildings. The layout plans presented are shown in Attachments 2, 3 and 4.

As a result of the discussions made after the presentation, it was agreed to make several modifications to the original layout plans as follows:

1. <u>New Passenger Terminal Building</u>

1.1 International Terminal

A. Rearrange C.I.Q. office areas as follows:

a) combine a Health Office (accommodate two officers) and a First Aid Room into one;

b) proposed Health Office should be converted into common room;

c) provide a Body Search Room within a Baggage Bond Room;

d) locate a holding room adjacent to a Police Office;

e) provide a cell in a Police Office;

f) provide an additional door at a Quarantine Investigation Office toward Customs area; and

g) extend one customs inspection counter by one metre to allow random inspection by a quarantine officer.

B. Considering the small amount of mail to be handled at the airport and manpower required, "shop and post office" should be re-named as "shop with postal service".

C. Provide a Tourist Information Office (25 x 6m) next to the proposed shop with postal service.

D. An Airport Information Desk should be included within the Tourist Information Office.

E. Enlarge areas of a snack bar in the Public Lobby by relocating its kitchn area to the front of the proposed public rest rooms.

1.2 Domestic Terminal

A. Relocate proposed shop next to an office in a Public Lobby.

2. <u>Existing Passenger Terminal Building to be renovated</u>

A. Enlarge proposed pilot briefing room by relocating proposed kitchen to storage area.

The layout plans for the two terminals which are modified in accordance with the above and agreed upon by the Solomon Islands side are shown in Attachments -5, 6 and 7.

JAMES SALIGA
Permanent Secretary,
Ministry of Tourism and Aviation

HIDEKI MURATA
Team Leader/Acting,
JICA Study Team

Attachment -1

LIST OF ATTENDANTS

(March 13, 1991)

Solomon Islands Side

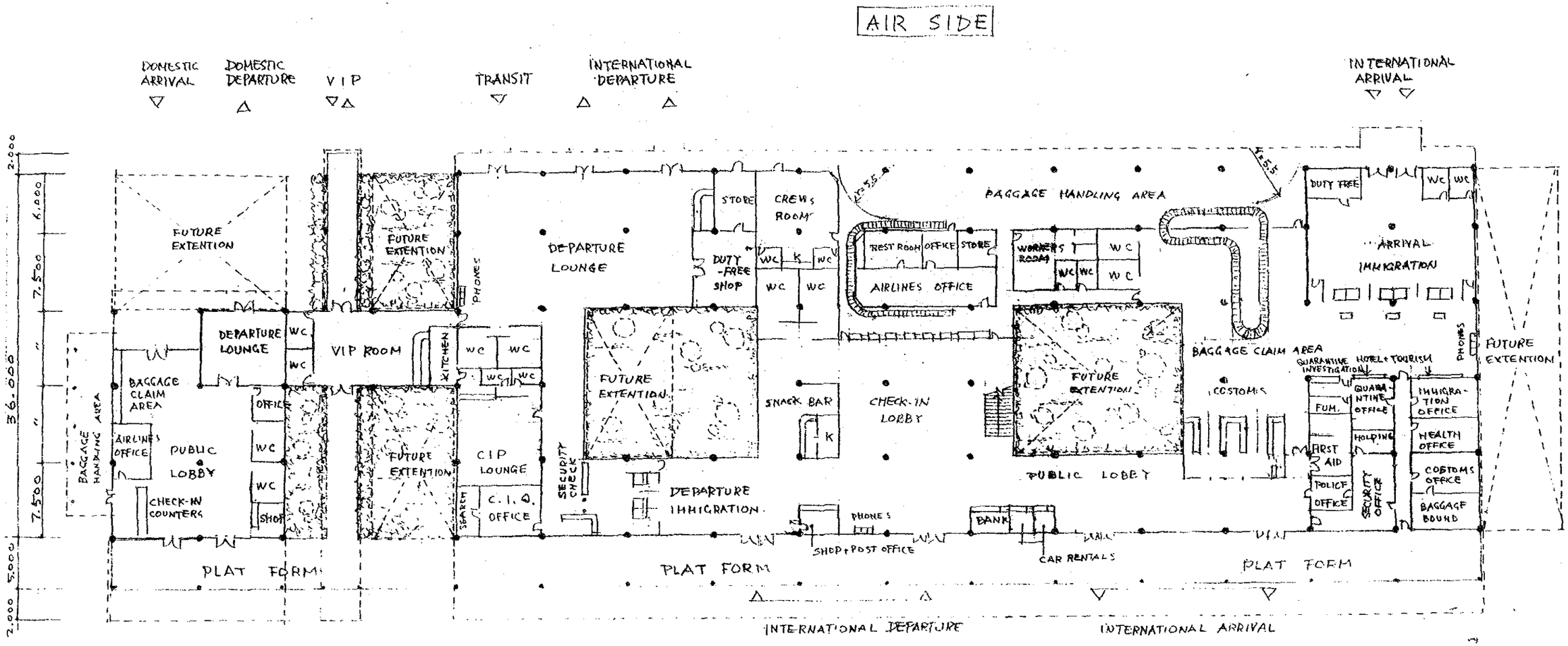
Name	Title
Mr. ALITONI, M.	Chief Admin. Officer, Ministry of Posts and Telecommunication
Mr. BABAUA, G.	Principal C.A.O, Civil Aviation Division, (MTA)
Mr. CARR, John N.	Director of Civil Aviation Civil Aviation Division (MTA)
Mr. CLIFFORD, G.	General Manager, Western Pacific Air Services
Mr. ETA, C.	Principal Quarantine Officer, SI. AQS
Mr. FIFII, S.	Chief of Protocol, Ministry of Foreign Affairs & Trade Relations
Mr. KRAUS, G.	Manager: Commercial Services, Solomon Airlines
Mr. LILIGETO, Wilson	Under Secretary, Ministry of Tourism & Aviation
Mr. LOLEMAE, T.	Chief Health Inspector, Ministry of Health and Medical Services
Mr. MAELAUA, W.	General Manager, S.I. Tourist Authority
Mr. MATITA, J.	Deputy Commissioner of Police, Ministry of Police and Justice

Mr. ROFETA, D.	Acting Comptroller, Customs & Excise
Mr. TEVA, S.	Immigration Officer (Control) Immigration Division
Mr. SALIGA, James T.	Permanent Secretary, Ministry of Tourism & Aviation
Mr. SIVE, S.	Director of Post, Ministry of Posts and Telecommunication
Mr. ZOLEVEKE, G. JR.	Manager, Company Affairs, Solomon Airlines

Japanese Side

JICA Study Team

Mr. MURATA, H.	Member of JICA Study Team
Mr. FUKUWATARI, I.	Member of JICA Study Team

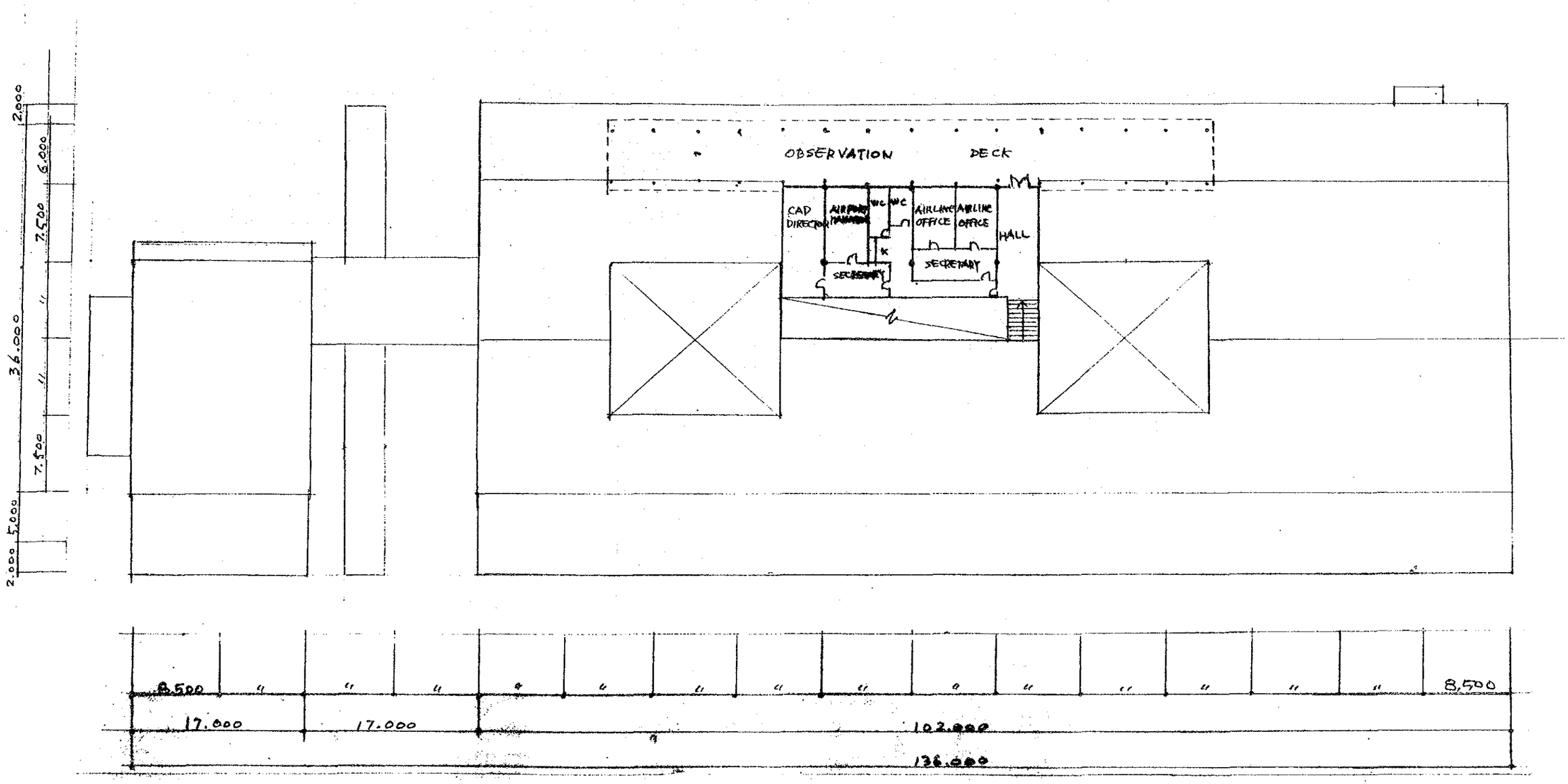


NEW PASSENGER TERMINAL BUILDING (PHASE-I) SCALE: 1/400

GROUND FLOOR PLAN

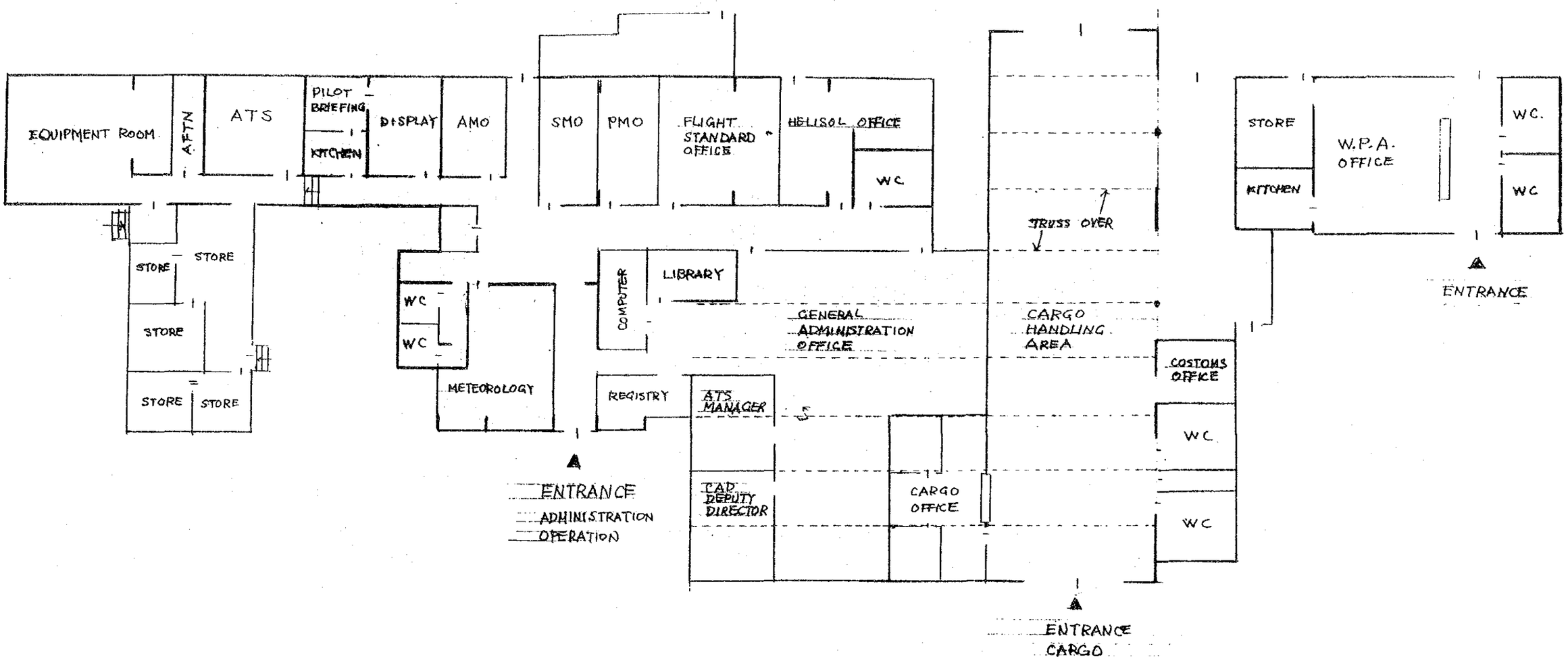
FLOOR AREA (INCL. 2ND FLOOR) (sq.m)

INTERNATIONAL	3.344.5
DOMESTIC	408.6
VIP	129.5
ADMINISTRATION	120.0
TOTAL	4.001.5



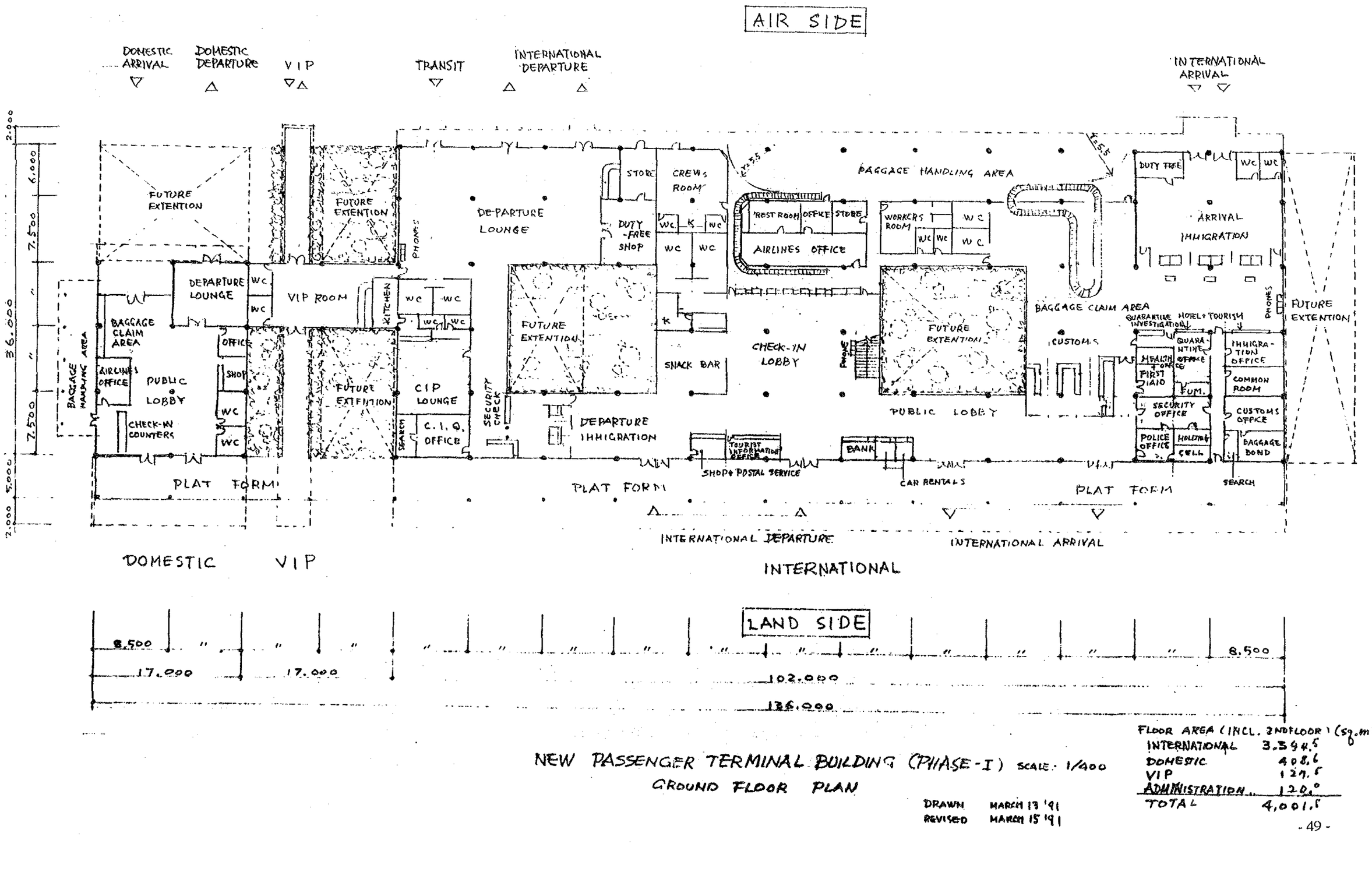
NEW PASSENGER TERMINAL BUILDING (PHASE-I)

1ST FLOOR PLAN SCALE : 1/400



EXISTING TERMINAL BUILDING IMPROVEMENT PLAN SCALE : 1/200

* Modification may occur after more detailed investigation of existing structure.



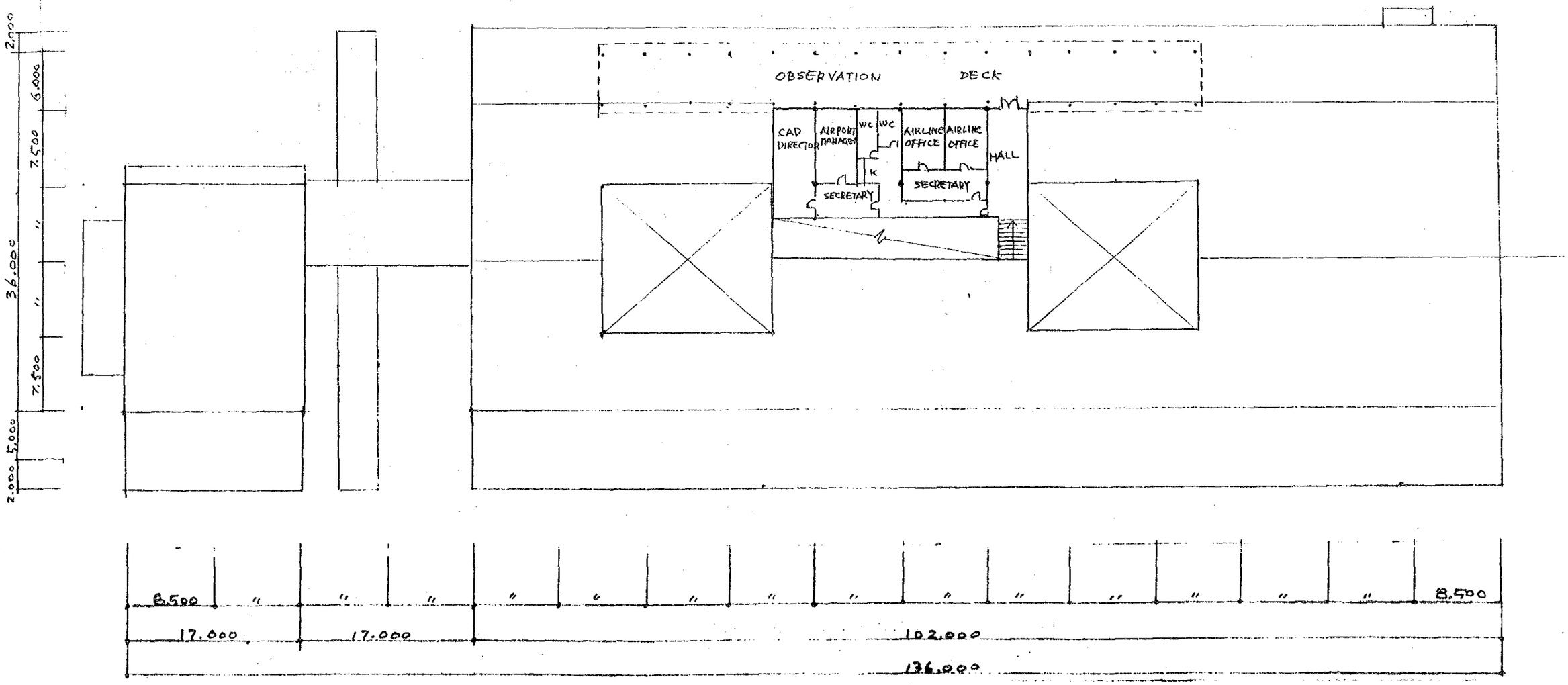
NEW PASSENGER TERMINAL BUILDING (PHASE-I) SCALE: 1/400

GROUND FLOOR PLAN

DRAWN MARCH 13 '91
REVISED MARCH 15 '91

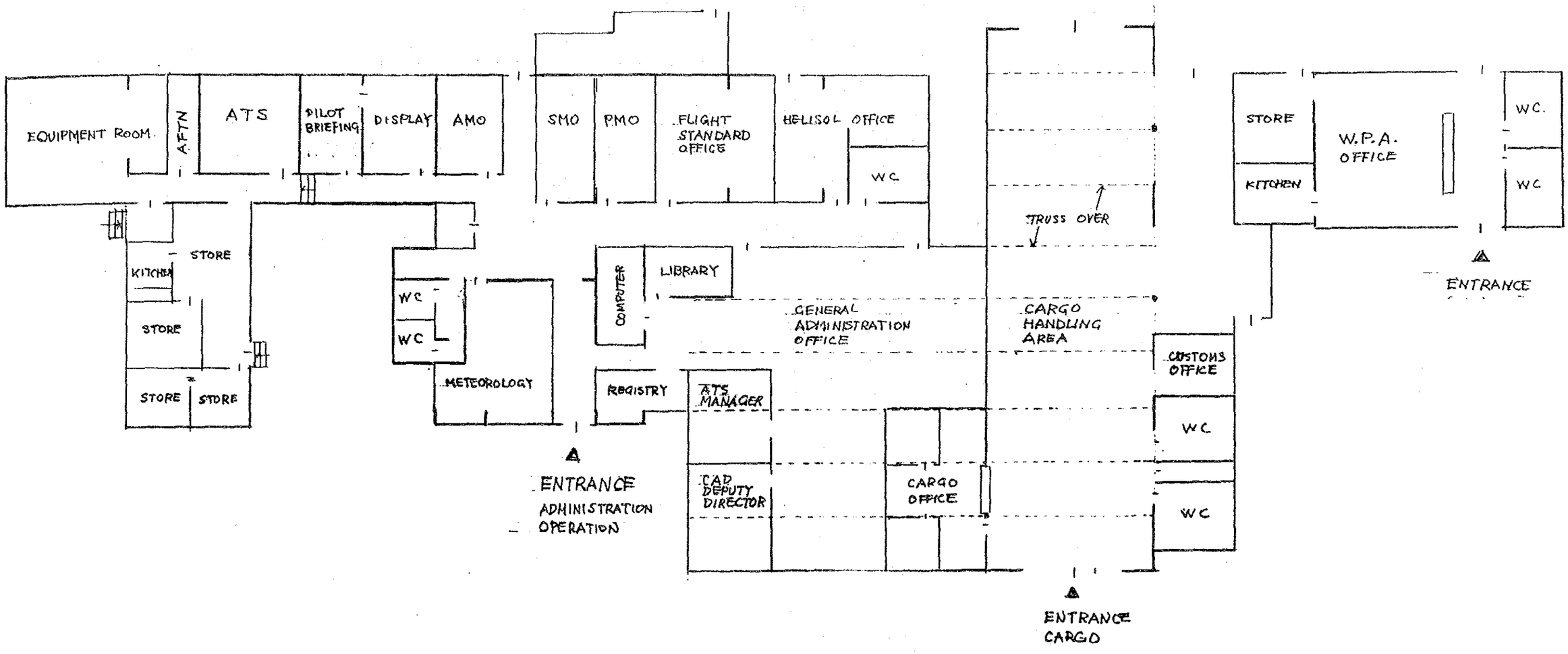
FLOOR AREA (INCL. 2ND FLOOR) (sq.m)

INTERNATIONAL	3,394.5
DOMESTIC	408.6
VIP	129.5
ADMINISTRATION	120.0
TOTAL	4,001.5



NEW PASSENGER TERMINAL BUILDING (PHASE-I)

1ST FLOOR PLAN SCALE : 1/400 DRAWN MARCH 15 '91



EXISTING TERMINAL BUILDING IMPROVEMENT PLAN SCALE : 1/200

DRAWN MARCH 13 '91
REVISED MARCH 15 '91

* Modification may occur after more detailed investigation of existing structure.

APPENDIX-1.5.7 MINUTES OF MEETING ON THE DRAFT FINAL REPORT

MINUTES OF MEETINGS

ON

THE DRAFT FINAL REPORT ON THE STUDY ON THE DEVELOPMENT PROJECT

OF

HENDERSON INTERNATIONAL AIRPORT

IN

SOLOMON ISLANDS

AUGUST 27, 1991

A team organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") arrived in Honiara, Solomon Islands on August 21, 1991. Upon its arrival, it submitted thirty (30) copies of the Draft Final Report on the Study on the Development Project of Henderson International Airport (hereinafter referred to as "the Study"). JICA team consisted of JICA Advisory Committee headed by Mr. Yoshiharu Iwami and JICA Study Team headed by Mr. Shota Morita.

Four meetings were held on the Draft Final Report of the Study at Mendana Hotel on August 22, 23, 26 and 27, 1991. The meetings chaired by Mr. James Saliga, Permanent Secretary of Ministry of Tourism and Aviation (MTA) were attended by key officials of various relevant organizations of the Government of Solomon Islands (hereinafter referred to as "Solomon Islands side"). Attendants of each meeting are listed in Attachments-1, 2, 3 and 4.

The first meeting was mainly devoted for the presentation of the Draft Final Report by the Study Team. The second and the third meetings were devoted for the detailed explanation of the report as well as inquiry/reply sessions regarding several issues that needed confirmation for the preparation of the Final Report. The fourth meeting was devoted for the finalization of minutes of meetings.

As a result of the four meetings, the Draft Final Report was in principle accepted and agreed upon by the Solomon Islands side with major discussion points described in Attachment-5.

Honiara, August 27, 1991

JAMES SALIGA
Permanent Secretary,
Ministry of Tourism and Aviation
on behalf of
The Government of Solomon Islands

SHOTA MORITA
Leader,
JICA Study Team

YOSHIHARU IWAMI
Chairman,
JICA Advisory Committee

Attachment-1

LIST OF ATTENDANTS

(August 22, 1991)

Solomon Islands Side

Name	Title
Mr. BAILES, Howard	PCAO FS, Civil Aviation Division
Mr. BAURA, John	General Manager, Solomon Airlines
Mr. CARR, John N.	Director of Civil Aviation
Ms. GROUSE, Connie M.	Managing Director, Heli Solomons LTD.
Mr. HAROLD, Joseph	Under Secretary, Ministry of Commerce & Primary Industry
Mr. KELM, Leroy	General Manager, Western Pacific Air Services
Mr. KERE, Benjamin	Chief Engineer, Ministry of Tourism & Aviation
Mr. KRAUS, Gus	Manager Commercial Services, Solomon Airlines
Mr. LIKAVEKE, Steve	Chief Physical Planner, Ministry of Agriculture & Lands
Mr. LILIGETO, Wilson	Under Secretary, Ministry of Tourism & Aviation
Mr. MAELAGI, Billy	Deputy Director, Civil Aviation, Ministry of Tourism & Aviation

Mr. MAEZAMA, Samuel	Under Secretary, Ministry of Transport Works & Utilities
Ms. RUALA, Veronica	Physical Planning Assistance, Ministry of Agriculture & Lands
Mr. RUTLAND, Hubert	EOD, Ministry of Police & Justice
Mr. SALIGA, James	Permanent Secretary, Ministry of Tourism & Aviation
Mr. WAIPORA, Japhet	Under Secretary, Ministry of Provincial Government

Japanese Side

JICA Advisory Committee

1. Mr. Yoshiharu Iwami	Chairman of JICA Advisory Committee
2. Mr. Tatsuya Yanai	Member of JICA Advisory Committee
3. Mr. Fumio Ishikawa	Project Officer, JICA

JICA Study Team

1. Mr. Shota Morita	Leader of JICA Study Team
2. Mr. Hideki Murata	Member of JICA Study Team
3. Mr. Ryujirou Yamagishi	Member of JICA Study Team

Attachment-2

LIST OF ATTENDANTS

(August 23, 1991)

Solomon Islands Side

Name	Title
Mr. ANITA, Michael	Airport Manager, Civil Aviation Division
Mr. BAILES, Howard	PCAO FS, Civil Aviation Division
Mr. BAURA, John	General Manager, Solomon Airlines
Mr. BECK, George	Deputy Director, Bi-lateral Aid Management Division, Ministry of Provincial Government
Mr. CARR, John N.	Director of Civil Aviation
Ms. GROUSE, Connie M.	Managing Director, Heli Solomons LTD.
Mr. HAROLD, Joseph	Under Secretary, Ministry of Commerce & Primary Industry
Mr. KELM, Leroy	General Manager, Western Pacific Air Services
Mr. KERE, Benjamin	Chief Engineer, Ministry of Tourism & Aviation
Mr. LAURENSON, Noel	Manager Airline Operations, Solomon Airlines
Mr. LIKAVEKE, Steve	Chief Physical Planner, Ministry of Agriculture & Lands

Mr. MAELAGI, Billy	Deputy Director, Civil Aviation, Ministry of Tourism & Aviation
Mr. MAEZAMA, Samuel	Under Secretary, Ministry of Transport Works & Utilities
Ms. RUALA, Veronica	Physical Planning Assistance, Ministry of Agriculture & Lands
Mr. RUTLAND, Hubert	EOD, Ministry of Police & Justice
Mr. SALIGA, James	Permanent Secretary, Ministry of Tourism & Aviation
Mr. WAIPORA, Japhet	Under Secretary, Ministry of Provincial Government

Japanese Side

JICA Advisory Committee

1. Mr. Yoshiharu Iwami	Chairman of JICA Advisory Committee
2. Mr. Tatsuya Yanai	Member of JICA Advisory Committee
3. Mr. Fumio Ishikawa	Project Officer, JICA

JICA Study Team

1. Mr. Shota Morita	Leader of JICA Study Team
2. Mr. Hideki Murata	Member of JICA Study Team
3. Mr. Ryujirou Yamagishi	Member of JICA Study Team

Attachment-3

LIST OF ATTENDANTS

(August 26, 1991)

Solomon Islands Side

Name	Title
Mr. ANITA, Michael	Airport Manager, Civil Aviation Division
Mr. BAILES, Howard	PCAO FS, Civil Aviation Division
Mr. BECK, George	Deputy Director, Bi-lateral Aid Management Division, Ministry of Provincial Government
Mr. CARR, John N.	Director of Civil Aviation
Ms. GROUSE, Connie M.	Managing Director, Heli Solomons LTD.
Mr. KELM, Leroy	General Manager, Western Pacific Air Services
Mr. KERE, Benjamin	Chief Engineer, Ministry of Tourism & Aviation
Mr. LAURENSON, Noel	Manager Airline Operations, Solomon Airlines
Mr. LILIGETO, Wilson	Under Secretary, Ministry of Tourism & Aviation
Mr. OTI, Patteson	Permanent Secretary, Ministry of Provincial Government
Ms. RUALA, Veronica	Physical Planning Assistance, Ministry of Agriculture & Lands

Japanese Side

JICA Advisory Committee

1.	Mr. Yoshiharu Iwami	Chairman of JICA Advisory Committee
2.	Mr. Tatsuya Yanai	Member of JICA Advisory Committee
3.	Mr. Fumio Ishikawa	Project Officer, JICA
4.	Mr. Kyoji Mizutani	Project Officer, JICA

JICA Study Team

1.	Mr. Shota Morita	Leader of JICA Study Team
2.	Mr. Hideki Murata	Member of JICA Study Team
3.	Mr. Ryujirou Yamagishi	Member of JICA Study Team

Attachment-4

LIST OF ATTENDANTS

(August 27, 1991)

Solomon Islands Side

Name	Title
Mr. BAILES, Howard	PCAO FS, Civil Aviation Division
Mr. BECK, George	Deputy Director, Bi-lateral Aid Management Division, Ministry of Provincial Government
Mr. CARR, John N.	Director of Civil Aviation
Ms. GROUSE, Connie M.	Managing Director, Heli Solomons LTD.
Mr. KELM, Leroy	General Manager, Western Pacific Air Services
Mr. LAURENSON, Noel	Manager Airline Operations, Solomon Airlines
Mr. MAEZAMA, Samuel	Under Secretary, Ministry of Transport Works & Utilities
Ms. RUALA, Veronica	Physical Planning Assistance, Ministry of Agriculture & Lands
Mr. RUTLAND, Hubert	EOD, Ministry of Police & Justice
Mr. SALIGA, James	Permanent Secretary, Ministry of Tourism & Aviation

Japanese Side

JICA Advisory Committee

1.	Mr. Yoshiharu Iwami	Chairman of JICA Advisory Committee
2.	Mr. Tatsuya Yanai	Member of JICA Advisory Committee
3.	Mr. Fumio Ishikawa	Project Officer, JICA
4.	Mr. Kyoji Mizutani	Project Officer, JICA

JICA Study Team

1.	Mr. Shota Morita	Leader of JICA Study Team
2.	Mr. Hideki Murata	Member of JICA Study Team
3.	Mr. Ryujirou Yamagishi	Member of JICA Study Team

MAJOR DISCUSSION POINTS

The following points are to be incorporated in the Final Report.

1. PRELIMINARY DESIGN (Chapter 9)

(1) Storm Water Drainage Plan

- The trapezoidal channels on the east side of the terminal apron will be realigned and storm water on the apron will be discharged toward the east side in addition to the west side.

(2) Architectural Works

- In designing facade of the passenger terminal building, local architecture characteristics should be taken into consideration.

- The rooms for CAD Director and Airport Manager should be provided in the first floor and airlines administrative office should be located at the ground floor.

- The wall of the first floor facing landside should have see through windows with blinds so that check-in lobby area can be looked down upon from the first floor whenever it is necessary.

- A door should be provided between the VIP room and the departure lounge such that full security can still be provided on the departing VIP and access is available to VIP room after such security clearance.

- A door should be provided between the CIP lounge and the corridor to the VIP room for the purpose of fire escape.

- Two additional doors should be provided in the security office, one on the east side to the public lobby, and the other on the west side to the corridor to enable direct access to those areas from the security office.

- The kitchen between VIP and CIP rooms should be split into two independent kitchens with a wall in between them. A door to the VIP room should be located in line with the said wall. A door to each kitchen should be provided on the east side wall of each kitchen. Each kitchen should be provided with a sink on the western corner on the wall that divides two kitchens. A counter door will be provided for the CIP room.

- Master key system should be introduced for the passenger terminal building so that one single master key can lock/unlock every door of the passenger terminal building.

- Considering the relatively small number of daily flights, flight information system to be installed should be manual type. However, necessary provision should be made for the future installation of TV type flight information system.

- Two doors to the airside from the airline offices should be equipped with security combination type door locks. Blinders should be provided for outbound and inbound baggage conveyors.

- Consideration should be given for disabled persons for their usage of airport terminal facilities.

- Adequate fire protection system in accordance with fire protection code of Solomon Islands should be provided in the passenger terminal.

- A list of the floor area for each functional room of the terminal building will be prepared based on the Figures 9.3.2 and 9.3.3.

- The outside stair at east end of the building should be widened to 2.0m so as to have the same width as the corridor toward the observation deck.

- Extractor fans should be provided to ventilate air through the terminal building.

- It is obvious that several measures are required to improve the existing passenger terminal to cover the transitional period until the completion of the new terminal. These tentative improvement works to the existing terminal should be identified in the Final Report.

- International departure lounge should be air-conditioned if the final design concept allows to do so efficiently.

- A water tank with a capacity of 10,000 litres as a back-up reserve for fire fighting and a hose tower should be provided at the fire station.

(3) Air Navigation Systems

- When new NDB equipment is installed, the existing NDB antenna mast should also be replaced as it has already exceeded its life span.

- LLZ antenna will be located at the extended runway centerline and approximately 500m from the existing runway 06 threshold to avoid relocation of the LLZ antenna when the planned 300m runway extension is realized.

2. AIRSPACE USE(Chapter 10)

- Standard terminal arrival (STAR) and standard instrument departure (SID) procedures should be up-dated based on the newest AIP published in July 1991 which were given to the Study Team during the meeting.

3. OTHER ISSUES

- A security gate and a guard booth equipped with a telephone should be provided at the airside/landside fence located on the east side of the passenger terminal building. A gravel road paved with bitumen also should be provided to connect the security gate and the new apron.

- An additional entrance to the car parking should be provided for a direct access from the building frontage road. Both entrances to the car parking should be angled approaches into the parking area and a booth should be provided at the exit gate.

- The perimeter road between the existing apron and the new fire station should be paved by gravel for better trafficability of fire vehicles.

- Provision of a hangar space should be indicated for HELISOL to accommodate their helicopters (one Bell 206 and one Hughes 500) and one fixed wing aircraft (Grumman 448).

- It was mentioned that the tree (no.32) indicated in Figure 3.7.2 was felled. Therefore, all obstacles have been removed for the obstacle limitation surfaces based on 150m wide runway strip.

APPENDIX TO CHAPTER 2

APPENDIX-2.7.1 PRICES OF CONCRETE PRODUCTS, AGGREGATES AND SANDS

(1) Concrete (Delivered)

357 kg/sq.cm (28 days cube strength	$365/cu.m
306 kg/sq.cm (28 days cube strength	$338/cu.m
256 kg/sq.cm (28 days cube strength	$275/cu.m
204 kg/sq.cm (28 days cube strength	$240/cu.m
173 kg/sq.cm (28 days cube strength	$234/cu.m
153 kg/sq.cm (28 days cube strength	$228/cu.m

(2) Concrete Blocks (Ex. Yard)

390 mm x 190 mm x 190 mm	$3.2/each
390 mm x 140 mm x 190 mm	$2.1/each
390 mm x 90 mm x 190 mm	$1.8/each

(3) Steel Bars (Ex. Yard)

Grade 270-275 (NZ Standard) (Plain/Deformed, 6m lengths)	$1,950/ton

(4) Concrete Pipes (Ex. Yard. Non-reinforced)

Diam 36" x 24" long	$64/each
Diam 24" x 39" long	$50/each
Diam 18" x 39" long	$45/each
Diam 12" x 39" long	$30/each
Diam 6" x 29" long	$10/each

(5) Concrete Posts (Ex. Yard)

2.4 m long	$75/each

(6) Cement (Ex. Yard) $550/ton

(7) Aggregates and Sands (Ex. Yard)

20 mm crushed	$28.5/cu.m
10 mm crushed	$26.5/cu.m
6 mm crushed	$24.5/cu.m

Coarse sand	$22.5/cu.m
Fine sand	$40.0/cu.m

Note 1: Prices in Solomon Islands Dollars
Note 2: As of November 1990, duty paid.

APPENDIX-2.7.2 CONSTRUCTION EQUIPMENT OF MTWU

Equipment	No. of Units
Dump Truck	13
Bulldozer	4
Concrete Mixer	4
Compressor	5
Breaker	1
Submerged Pump	1
Vibrator	2
Backhoe	1
Loader	6
Trailer	1
Concrete Pump	1
Crane	1
Grader	1
Generator	1
Truck	1

APPENDIX-2.7.3 HIRE RATES OF CONSTRUCTION EQUIPMENT

The plants available in the private section in Honiara and their hire rates are as follows:

(1) Bulldozers

D7G Blade/Ripper	$150/hr
D7F Blade/Ripper	$150/hr
D6C Blade/Ripper	$125/hr
D6C Blade/Ripper	$125/hr
CAT D6	$125/hr
D3 Blade/Ripper	$ 70/hr

(2) Loaders

Cat 910	1 cu.m bucket	$65-68/hr
Hough H30	1 cu.m bucket	$ 60/hr
Cat 950	2 cu.m bucket	$ 90/hr
Fiat Allis	2.5 cu.m bucket	$ 110/hr

(3) Graders

Cat 12E	$ 80/hr

(4) Rollers

Hyster FC610B Vibrating	$ 64/hr
Tampo Roller	$ 75/hr
SP 54	$ 75/hr
Pacific	$ 75/hr
Dynapac CC10	$ 70/hr

(5) Screpers

Terex TS14 10/15 cu.m	$150/hr

(6) Forklifts

2 tonne	$ 40/hr
3 tonne	$ 50/hr

(7) Trucks

Toyota 6000 tipper	$ 56/hr
Hino tipper	$ 56/hr
Isuzu 4 x 4 tipper 4 sq.m	$ 50/hr
Isuzu TWD 6 x 6 tipper 6 sq,m	$ 55/hr

Hino KB 4 x 2 tipper 5.5 sq.m	$55/hr
Kenworth 10 sq.m tippers	$100/hr
Kenworth Low Loader (100 ton capacity)	$220/hr

(8) Backhoes

Caterpiller 428 Rubber Type	$80/hr
Caterpiller D3B Brade with Backhoe	$70/hr

(9) Air Compressors

Mitsui Seiki 370 CFM	$150/day

(10) Welders

Miller 400 Amp Portable (with operator)	$150/day

(11) Others

Tracktor/Broom	$60/hr
Water Cart 400L	$80/hr

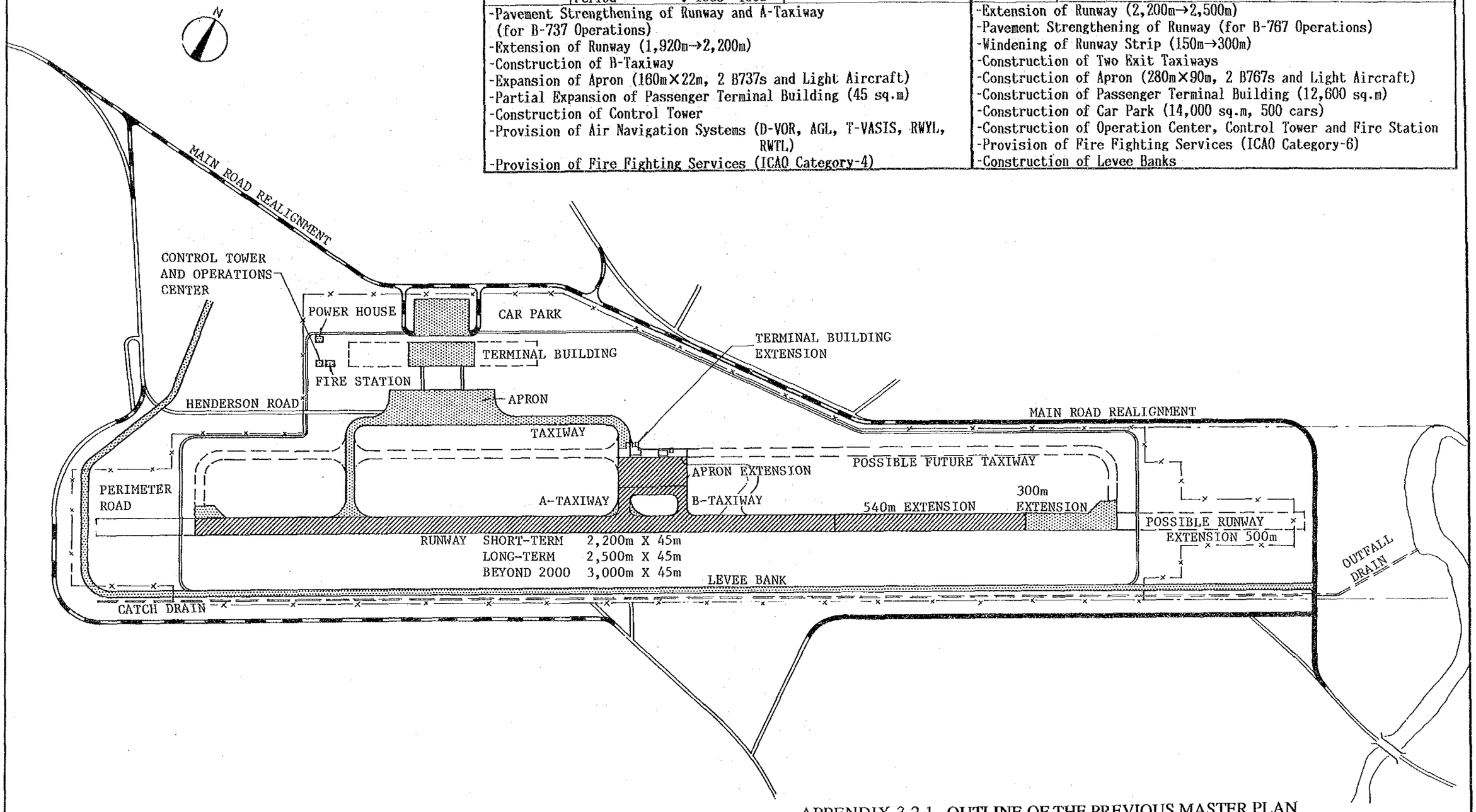
Note 1: Prices in Solomon Islands dollars
Note 2: As of November 1990

APPENDIX TO CHAPTER 3

APPENDIX-3.2.1 OUTLINE OF THE PREVIOUS MASTER PLAN

Short Term Development	Design Aircraft: B-737 Design Target Year : Around 1993 Construction Period : 1983~1985
-Pavement Strengthening of Runway and A-Taxiway (for B-737 Operations) -Extension of Runway (1,920m→2,200m) -Construction of B-Taxiway -Expansion of Apron (160m×22m, 2 B737s and Light Aircraft) -Partial Expansion of Passenger Terminal Building (45 sq.m) -Construction of Control Tower -Provision of Air Navigation Systems (D-VOR, AGL, T-VASIS, RWYL, RWTL) -Provision of Fire Fighting Services (ICAO Category-4)	

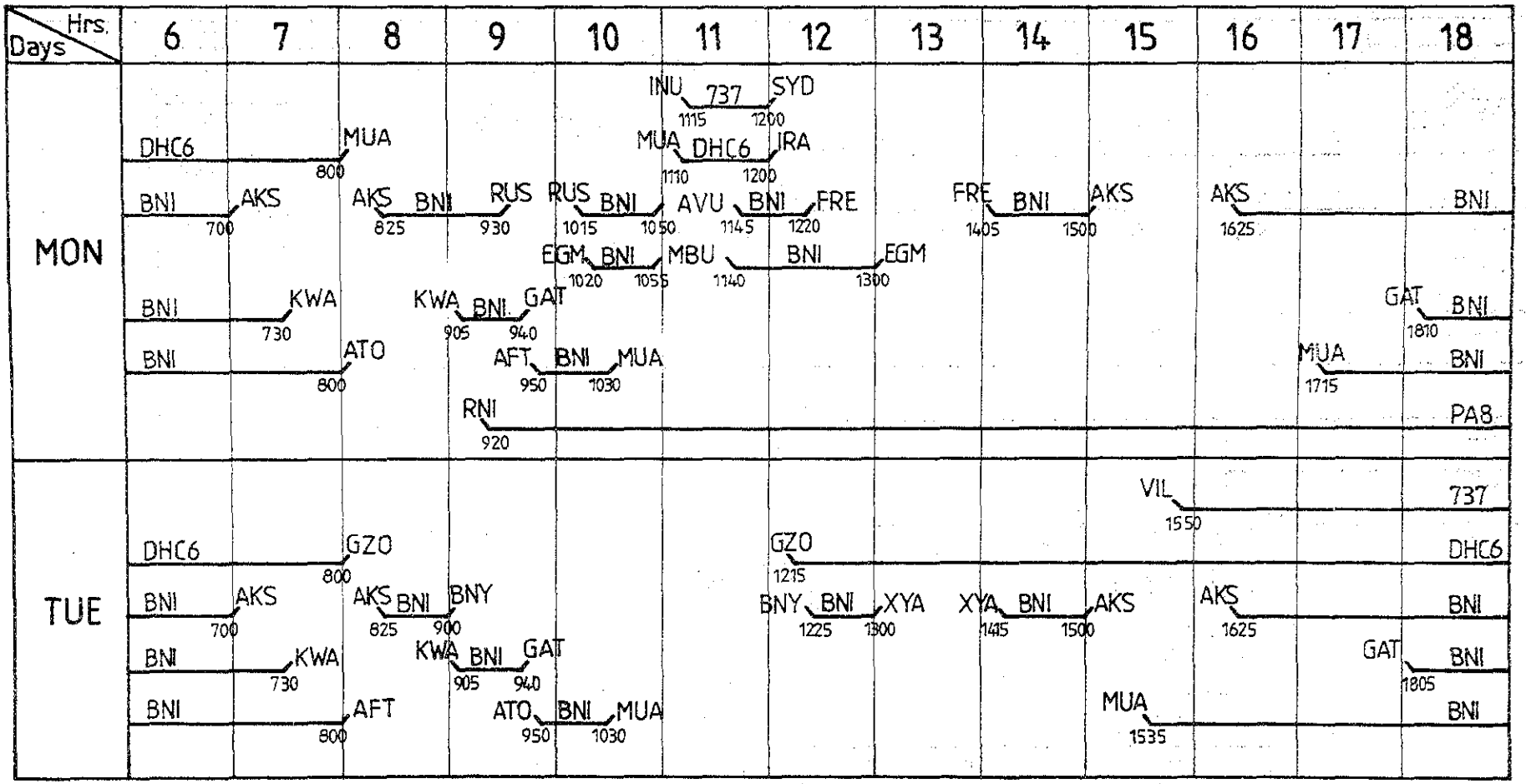
Long Term Development	Design Aircraft: B-767 Design Target Year : 2000 Construction Period : 1991~1993
-Extension of Runway (2,200m→2,500m) -Pavement Strengthening of Runway (for B-767 Operations) -Widening of Runway Strip (150m→300m) -Construction of Two Exit Taxiways -Construction of Apron (280m×90m, 2 B767s and Light Aircraft) -Construction of Passenger Terminal Building (12,600 sq.m) -Construction of Car Park (14,000 sq.m, 500 cars) -Construction of Operation Center, Control Tower and Fire Station -Provision of Fire Fighting Services (ICAO Category-6) -Construction of Levee Banks	



APPENDIX-3.2.1 OUTLINE OF THE PREVIOUS MASTER PLAN (ACCA REPROT)

SOURCE: HONIARA AIRPORT DEVELOPMENT STUDY, SEPTEMBER 1981, AIRPORT CONSULTING & CONSTRUCTION AUSTRALIA PTY. LTD.

APPENDIX-3.4.1 PRESENT FLIGHT SCHEDULE AT HENDERSON INTERNATIONAL AIRPORT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MUA BNI
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BNY BNI XYA
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AKS BNI
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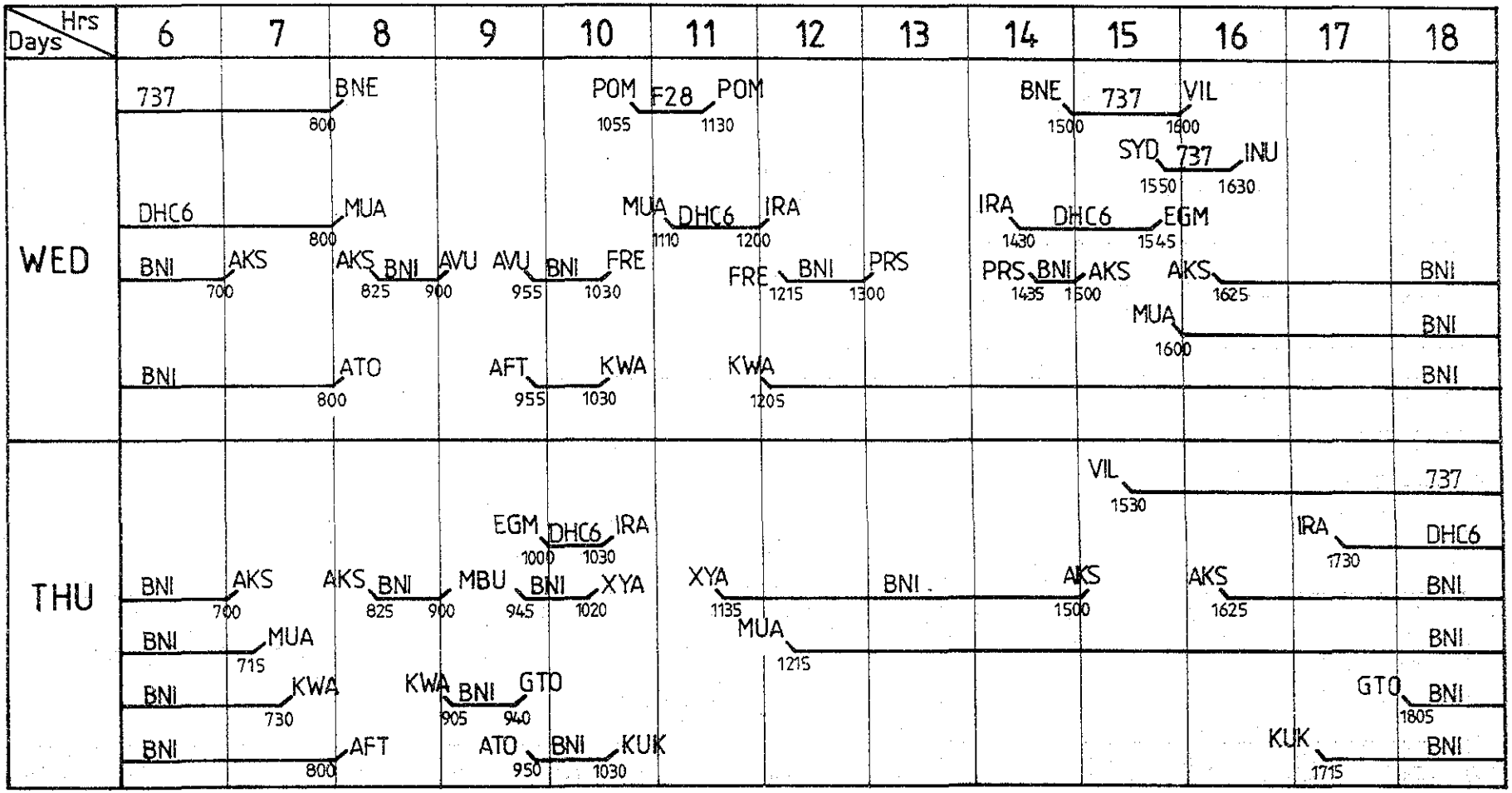
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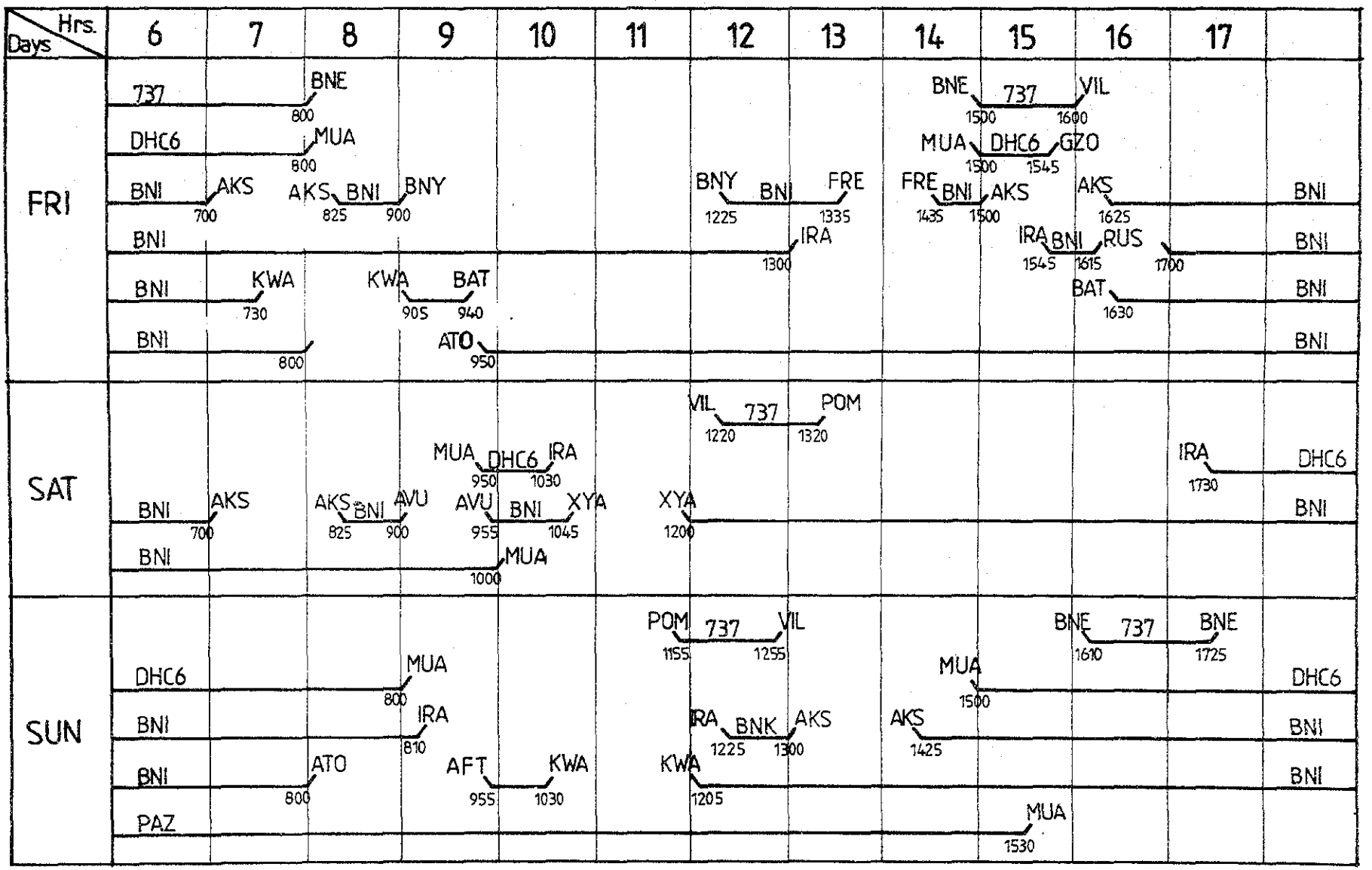
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APPENDIX-3.4.2 INTERVIEW SURVEY FOR AIR PASSENGERS

An interview survey was carried four flights shown below:

Date	Flt. No.	Destination	No. of Pax Interviewed
21/10/90	IE 708	VIL/NAN	22
21/10/90	QF 472	BNE	32
26/10/90	IE 704	POM	19
27/10/90	IE 706	VIL/NAN/AKL	22

Total number of passengers interviewed was 95.

Although this number is not sufficient to precisely grasp characteristics of passengers, information will be valuable for the planning and design of the airport. The result of the survey is presented as follows:

Q1. Nationality

		Responses	Percentage
1.	Solomon Islands	19	20%
2.	Australia	25	26%
3.	New Zealand	12	13%
4.	USA	1	1%
5.	Fiji	2	2%
6.	Vanuatu	1	1%
7.	PNG	11	12%
8.	Nauru	0	0%
9.	Other Pacific	2	2%
10.	Japan	4	4%
11.	Europe	12	13%
12.	Other Country	6	6%
	Total	95	100%

Q2. Usual Place of Residence

		Responses	Percentage
1.	Solomon Islands	26	29%
2.	Australia	23	24%
3.	New Zealand	10	11%
4.	USA	2	2%
5.	Fiji	4	4%
6.	Vanuatu	1	1%
7.	PNG	13	14%

8.	Nauru	0	0%
9.	Other Pacific	4	4%
10.	Japan	4	4%
11.	Europe	0	0%
12.	Other Country	7	7%
	No Response	1	-
	Total	95	100%

Q3. Sex

		Responses	Percentage
1.	Male	67	71%
2.	Female	28	29%
	Total	95	100%

Q4. Age

		Responses	Percentage
1.	Under 19 years	1	1%
2.	10 - 29 years	19	21%
3.	30 - 39 years	27	31%
4.	40 - 49 years	25	27%
5.	50 - 59 years	14	15%
6.	Over 60	5	5%
	No Response		
	Total	95	100%

Q5. Occupation

		Responses	Percentage
1.	Professional	22	23%
2.	Manufacturing	3	3%
3.	Service/Sales	19	20%
4.	Government	10	11%
5.	Agriculture/Forestry/ Fishery	9	10%
6.	Education	7	7%
7.	Retired/Students/ Housewives etc.	8	9%
8.	Other	16	17%
	No Response	1	-
	Total	95	100%

Q6. Purpose of Travel

		Responses	Percentage
1.	Holiday/Vacation	27	28%
2.	Business	41	44%
3.	Meeting/Conference	20	21%
4.	Meeting Friends/ Relatives	2	2%
5.	Other Purposes	5	5%
	Total	95	100%

(Solomon Islands Residents)

		Responses	Percentage
1.	Holiday/Vocation	6	23%
2.	Business	5	19%
3.	Meeting/Conference	11	42%
4.	Meeting Friends/ Relatives	1	4%
5.	Other Purposes	3	12%
	Total	26	100%

(Visitors)

		Responses	Percentage
1.	Holiday/Vocation	21	31%
2.	Business	35	52%
3.	Meeting/Conference	9	13%
4.	Meeting Friends/ Relatives	1	1%
5.	Other Purposes	2	3%
	Total	68	100%

Q7. Length of Stay in Solomon Islands (Visitors only)

		Responses	Percentage
1.	1 day	3	5%
2.	2 days	6	9%
3.	3 days	5	8%
4.	4 days	5	8%
5.	5 days	2	3%
6.	6 days	1	2%
7.	7 days	21	33%

8.	8 - 14 days	15	23%
9.	15 - 21 days	2	3%
10.	More than 22 days	4	6%
	No Response	4	-
	Total	69	100%

Average length of stay = 12.7 days

Q8. From what location did you leave for the airport?

		Responses	Percentage
1.	Honiara	78	88%
2.	Other Guadalcanal	4	4%
3.	Florida Islands	2	2%
4.	Other Central Province (Bellona/Rennel)	1	1%
5.	Malaita Province (Auki, etc.)	1	1%
6.	Western province (Gizo/New Georgia etc.)	3	3%
7.	Isabel Province (Buala etc.)	0	0%
8.	Makira Province (Kira Kira etc.)	1	1%
9.	Temotu Province (St. Cruz etc.)	0	0%
	No Response	5	-
	Total	95	100%

Q9. What was the origin location?

		Responses	Percentage
1.	Hotel/Guest House	44	47%
2.	Place of Business	6	7%
3.	Private Residence	32	35%
4.	Other	10	11%
	No Response	3	-
	Total	95	100%

Q10. What is your today's destination city?

		Responses	Percentage
1.	Brisbane	21	22%
2.	Sydney	10	11%
3.	Auckland	6	6%
4.	Nadi/Suva	17	18%
5.	Port Vila	14	15%
6.	Port Moresby	21	22%
7.	Nauru	0	0%
8.	Other City	6	6%
	Total	95	100%

Q11. How did you come to the airport?

		Responses	Percentage
1.	Private car	47	50%
2.	Rental car	7	7%
3.	Company car	12	13%
4.	Taxi	7	7%
5.	Bus	18	19%
6.	Hotel car	0	0%
7.	Other	4	4%
	Total	95	100%

Q12. What time did you arrive at the airport?

(Time prior to departure time)		Responses	Percentage
1.	180 - Minutes	1	1%
2.	165 - 179 Minutes	6	6%
3.	150 - 164 Minutes	4	4%
4.	135 - 149 Minutes	7	7%
5.	120 - 134 Minutes	10	11%
6.	105 - 119 Minutes	14	15%
7.	90 - 104 Minutes	16	17%
8.	75 - 89 Minutes	11	12%
9.	60 - 74 Minutes	19	20%
10.	45 - 59 Minutes	5	5%
11.	30 - 44 Minutes	1	1%
12.	15 - 29 Minutes	1	1%
13.	0 - 14 Minutes	0	0%
	Total	95	100%

Q13. Are you travelling on a package tour or individual arrangement?

		Responses	Percentage
1.	Package Tour	10	11%
2.	Individual Arrangement	78	89%
	No Response	1	0%
	Total	95	100%

Q14. How many accompanied you on the trip?

		Responses	Percentage
1.	None	34	36%
2.	1 person	70	32%
3.	2 persons	12	12%
4.	3 persons	7	7%
5.	4 persons	4	4%
6.	5 persons	3	3%
7.	6 - 10 persons	4	4%
8.	Over 10 persons	2	2%
	Total	95	100%

Average number of the accompanied per passenger = 2.0.

Q15. How many well-wishers saw you off at the airport?

		Responses	Percentage
1.	None	28	30%
2.	1 person	20	21%
3.	2 persons	13	14%
4.	3 persons	6	6%
5.	4 persons	7	7%
6.	5 persons	2	2%
7.	6 - 10 persons	14	15%
8.	Over 10 persons	5	5%
	Total	95	100%

Average number of well-wishers per passenger = 1.1
(Solomon Islands Residents) = 1.4
(Visitors) = 0.9

Q16. How many pieces of baggage did you check in?

		Responses	Percentage
1.	None	1	1%
2.	1 piece	46	49%
3.	2 pieces	25	25%
4.	3 pieces	12	12%
5.	4 pieces	7	7%
6.	5 pieces	1	1%
7.	6 - 10 pieces	4	4%
8.	Over 10 pieces	1	1%
	Total	95	100%

Average number of check-in baggage = 2.1

Q17. How much did you spend at Terminal shop?

		Responses	Percentage
1.	None	76	80%
2.	1 - 5 dollars	15	16%
3.	6 - 10 dollars	3	3%
4.	Over 10 dollars	1	1%
	Total	95	100%

Average spending at terminal shop per passenger = SI$1.0

Q18. How much did you spend in Solomon Islands? (Visitors only and excluding package tour passengers)

		Responses	Percentage
1.	0 - 500 dollars	19	35%
2.	501 - 1000 dollars	11	21%
3.	1001 - 2000 dollars	12	23%
4.	2001 - 3000 dollars	7	13%
5.	3001 - 4000 dollars	0	0%
6.	4001 - 5000 dollars	0	0%
7.	5001 - 7000 dollars	2	4%
8.	7001 - 10000 dollars	1	2%
9.	10001 - dollars	1	2%
	No Responses	6	-
	Total	69	100%

Average spending in Solomon Islands per passenger
= SI$1,666 (1,607)

Average daily spending in Solomon Islands per passenger
= SI$131 (127)

( ) indicates value including package tour passengers

Q19. Suggestion for Airport Improvements

1.	Provision of Bigger Terminal/More Seats	44
2.	Provision of Air Conditioning	32
3.	Provision of Toilet Improvement	23
4.	Provision of Snack Bar	17
5.	Provision of Duty Free Shop	14

Other opinions included provision of baggage carts, improvement of sign boards, better transportation from/to town , location of foreign exchange and rent-a-car counters in the arrival lobby, etc.

APPENDIX-3.4.3 PASSENGER PROCESSING TIME SURVEY

Passenger processing time survey was conducted check-in, departure immigration, security check, arrival immigration and customs. The result of the survey was as follows:

(1) Check-in

Date	Flt. No.	Destination	No. of Pax	No. of pax Surveyed	Proc. Time per Pax
16/10/90	IE 700	BNE	71	17	1'26"
18/10/90	IE 702	BNE	74	15	2'00"

Average processing time for a passenger per counter = 1'50"

The number of operating counters varied one to three depending on the degree of congestion.

(2) Departure Immigration

Date	Flt. No.	Destination	No. of Pax	No. of pax Surveyed	Proc. Time per Pax
16/10/90	IE 700	BNE	71	11	29"
18/10/90	IE 702	BNE	74	15	30"

Average processing time for a passenger per counter = 30"

The number of counter was one.

(3) Security Check

Date	Flt. No.	Destination	No. of Pax	No. of pax Surveyed	Proc. Time per Pax
18/10/90	IE 702	BNE	74	17	59"
19/10/90	IE 704	BNE	22	22	48"

Average processing time for a passenger per counter = 55"

The number of counter was two.

(4) Arrival Immigration

Date	Flt. No.	Destination	No. of Pax	No. of pax Surveyed	Proc. Time per Pax
16/10/90	IE 709	AKL	36	20	1'32"
17/10/90	IE 701	BNE	33	15	1'56"

Average processing time for a passenger per counter = 1'50"

The number of operating counter varied two to three depending on the degree of congestion. Four counters are available for heavy peak traffic.

(5) Customs/Quaranteen

Date	Flt. No.	Destination	No. of Pax	No. of pax Surveyed	Proc. Time per Pax
16/10/90	EI 709	AKL	36	12	36"
17/10/90	IE 701	BNE	33	31	22"

Average processing time for a passenger per counter = 25"

The number of counter was two.

APPENDIX-3.4.4 UTILIZATION OF CARPARK

The utilization of the carpark was investigated in relation to the number of passengers. The result of the survey was as follows:

Date	Flt. No.	Destination	No. of Pax	No. of pax Surveyed	Proc. per Time Pax
24/10/90	OFI471/472	BNE/HIR/BNE	122	70	0.57
16/11/90	IE701/704	BNE/HIR/VIL	79	47	0.59

Note 1: *The number of passengers was the total of arriving passengers and departing passengers.*

Note 2: *Aircraft stayed at Henderson Airport for about one hour respectively.*

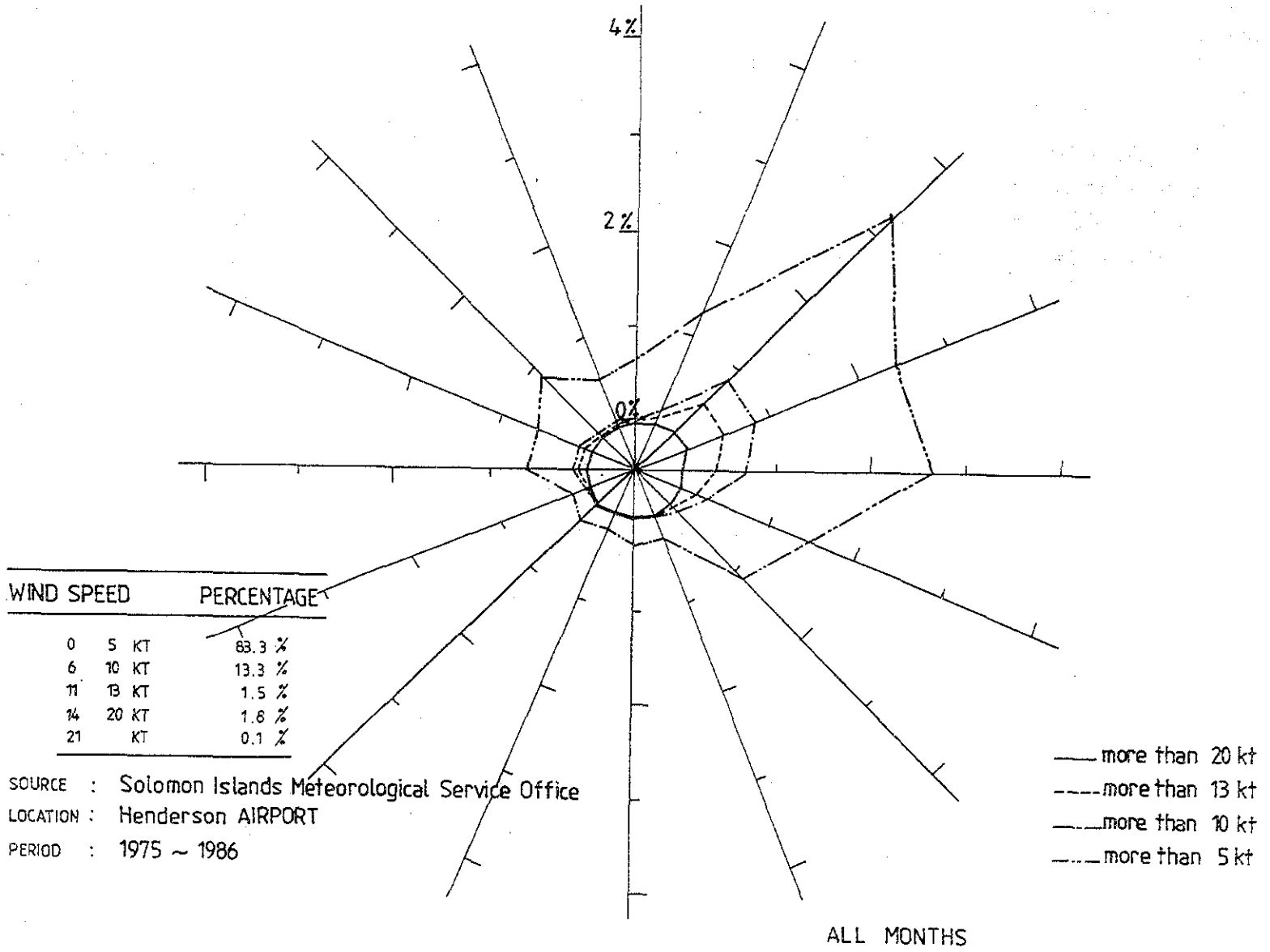
Average parking ratio (the number of parked cars/the number of peak hour passengers) was 0.58.

APPENDIX-3.6.1 TEMPERATURE, RELATIVE HUMIDITY AND RAINFALL AT HENDERSON AIRPORT

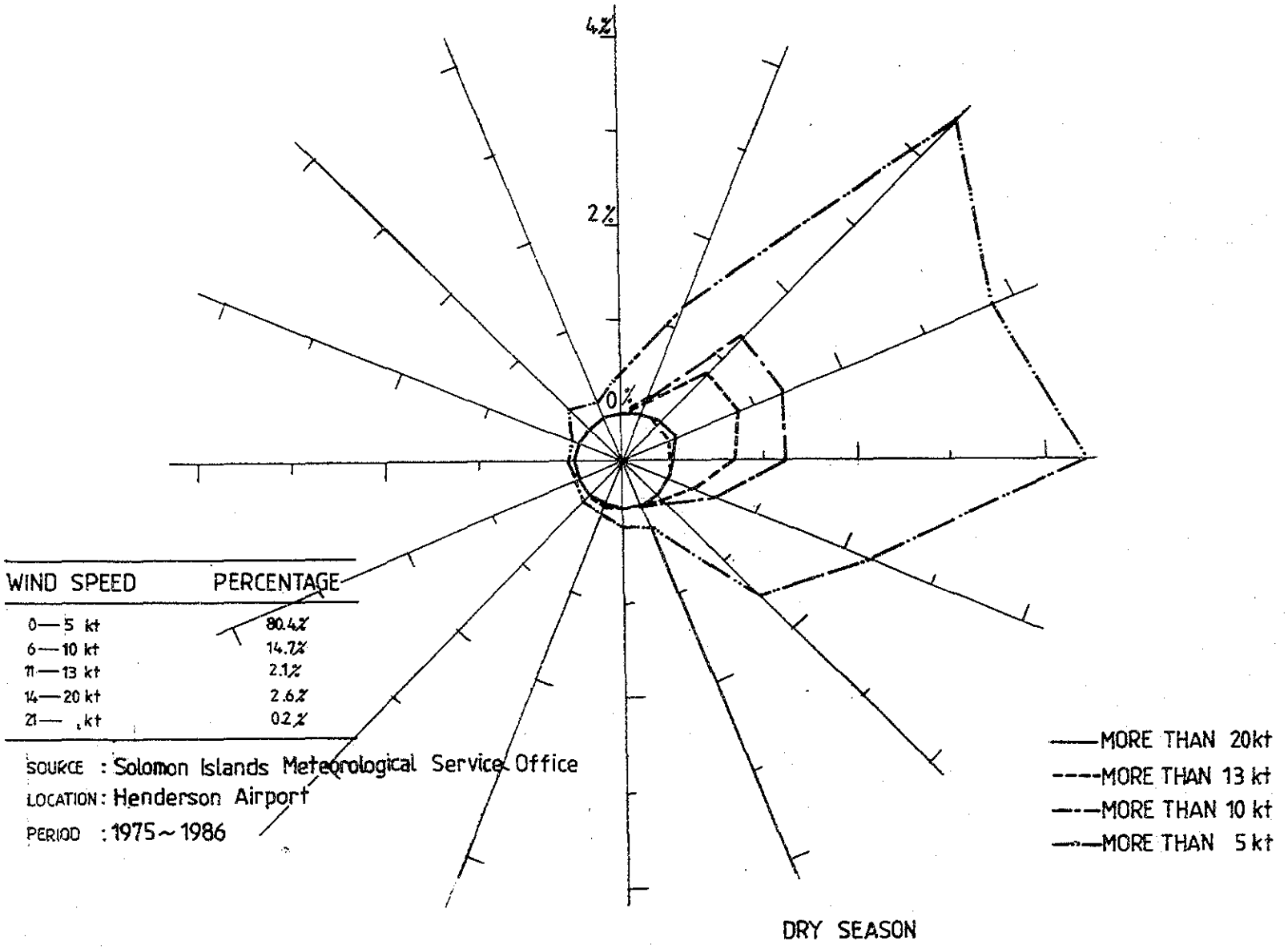
Items	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg./ Total
Temperature (°C)													
Daily Maximum	30.6	30.4	30.5	30.6	30.8	30.6	30.2	30.2	30.6	31.0	30.8	30.8	30.6
Daily Minimum	23.2	23.0	22.9	22.6	22.5	21.9	21.5	21.5	21.7	22.0	22.6	23.0	22.4
8 am	25.7	25.0	24.9	24.9	24.6	24.0	23.3	23.6	24.6	25.6	26.5	26.1	24.9
2 pm	29.5	29.2	29.5	29.6	29.5	29.6	29.1	29.3	29.3	29.6	29.7	29.7	29.5
Relative Humidity (%)													
8 am	86	90	89	89	91	91	92	90	87	84	82	84	87
2 pm	75	75	73	73	72	71	71	69	70	69	71	72	71
Rainfall (MM)	273	297	252	163	130	61	101	100	101	92	184	201	1953
Rainy Days (days)	18	19	18	14	12	10	10	15	12	12	12	14	15
Sunshine (hours)	6.0	5.8	6.3	6.5	6.9	7.0	6.0	6.8	6.3	7.3	7.2	6.0	6.5

Source: *Solomon Islands Meteorological Service Office*
Note 1: *Temperature and rainfall: October 1974 - December 1989*
Note 2: *Relative humidity: January 1975 - December 1989*
Note 3: *Sunshine hours: July 1980 - June 1990*

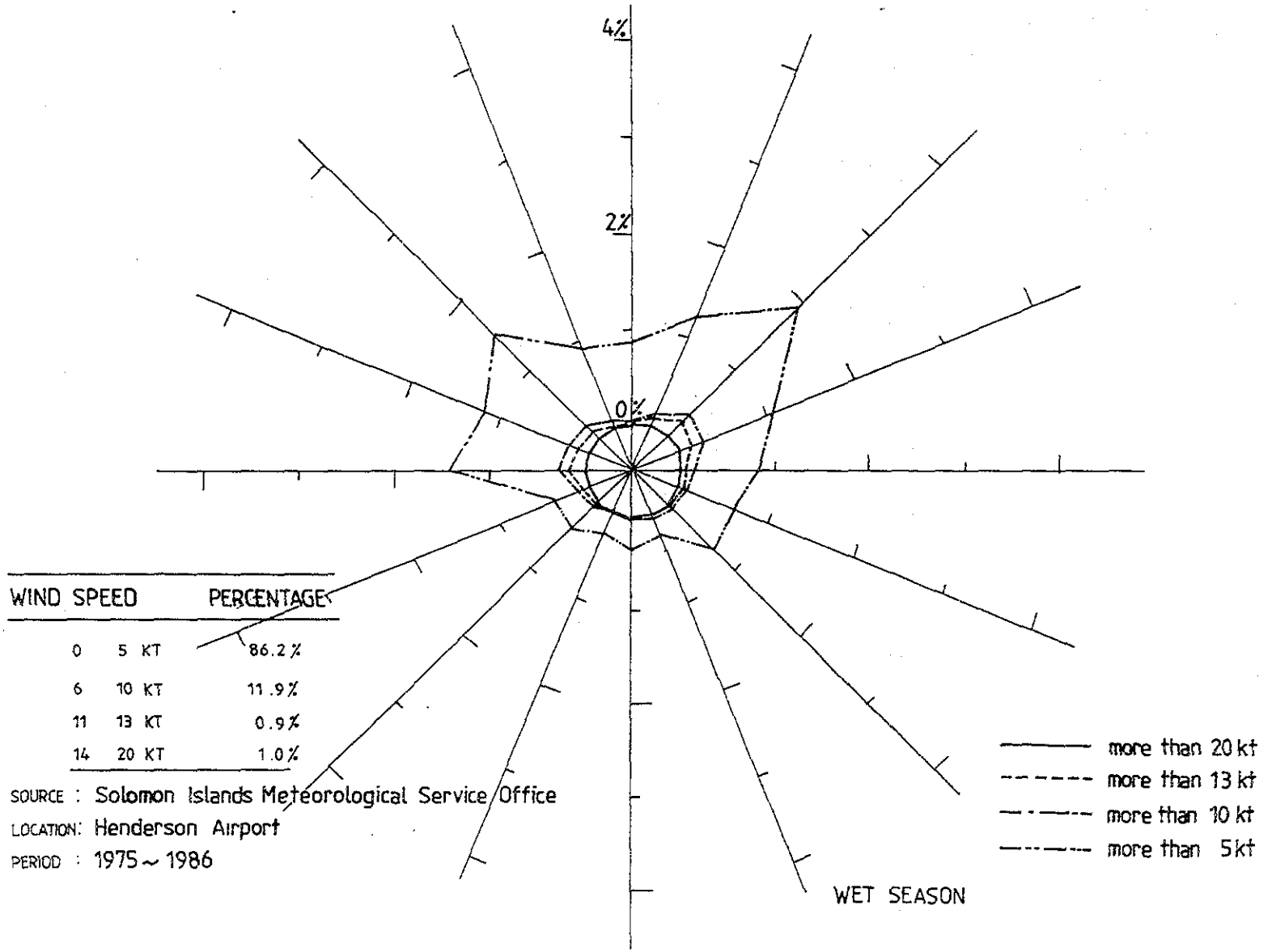
APPENDIX-3.6.2 WIND DIRECTION CHARTS



(1) WIND DIRECTION CHART (ALL MONTHS)



(2) WIND DIRECTION CHART (DRY SEASON, MAY. TO OCT.)

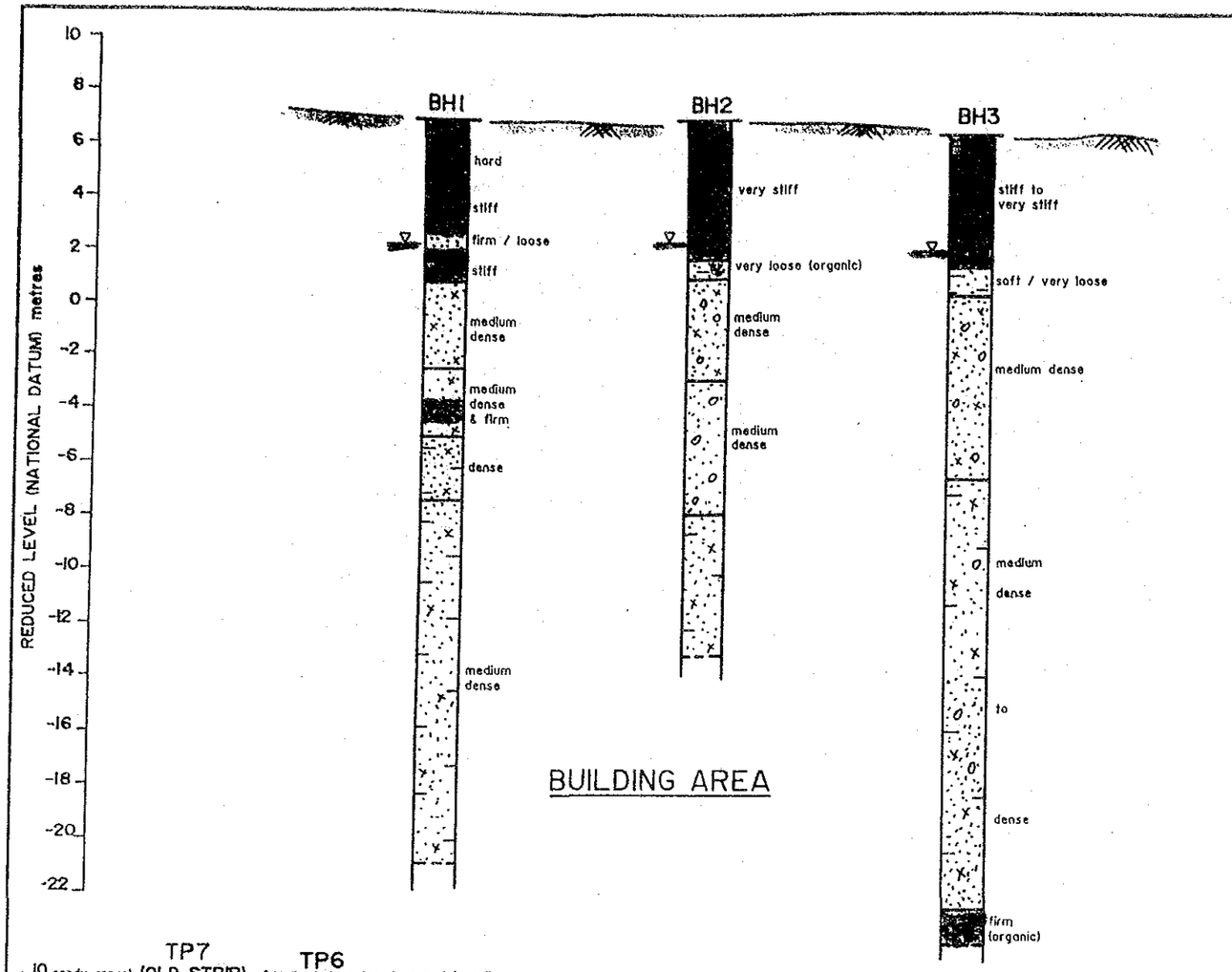


(3) WIND DIRECTION CHART (WET SEASON, NOV. TO APR.)

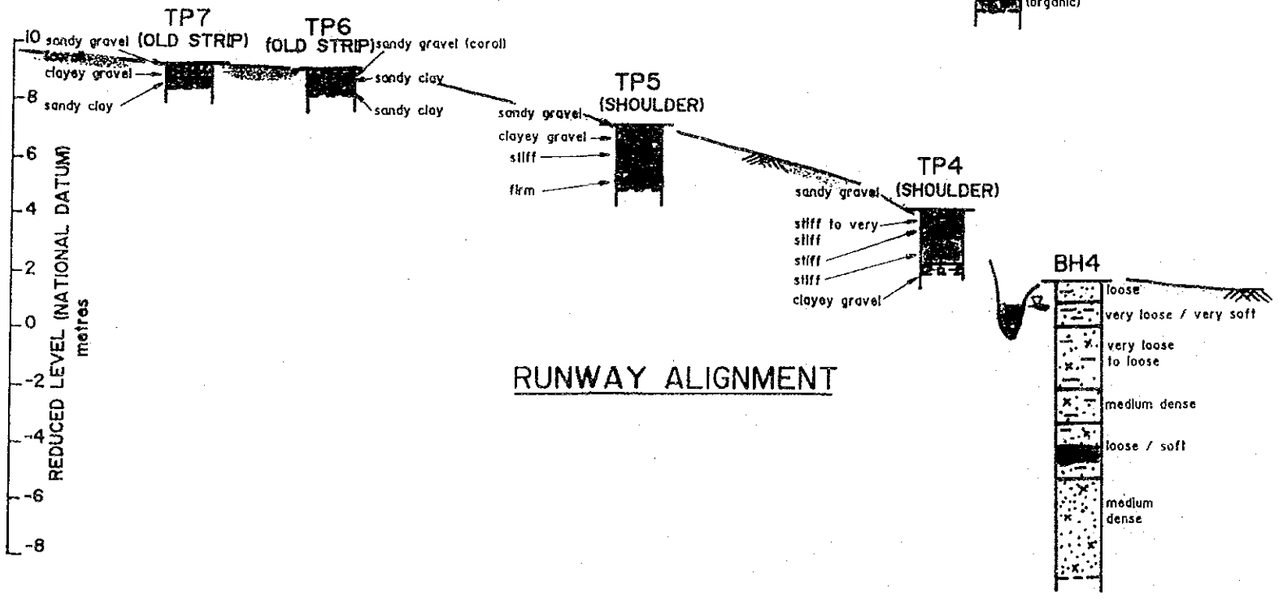
APPENDIX-3.6.3 CYCLONES WITH MORE THAN 300mm RAINFALL IN HONIARA

Name of Cyclone		Date	24 hr Rainfall
1.	Angela	November, 1966	392
2.	Glenda	March, 1967	635
3.	Isa	April, 1970	332
4.	Ursula	December, 1971	447
5.	Wendy	January, 1972	958
6.	Emily	March, 1972	359
7.	Bernnie	April, 1982	352
8.	Hira	March, 1985	557
9.	Namu	May, 1986	366
10.	Anne	January, 1988	318

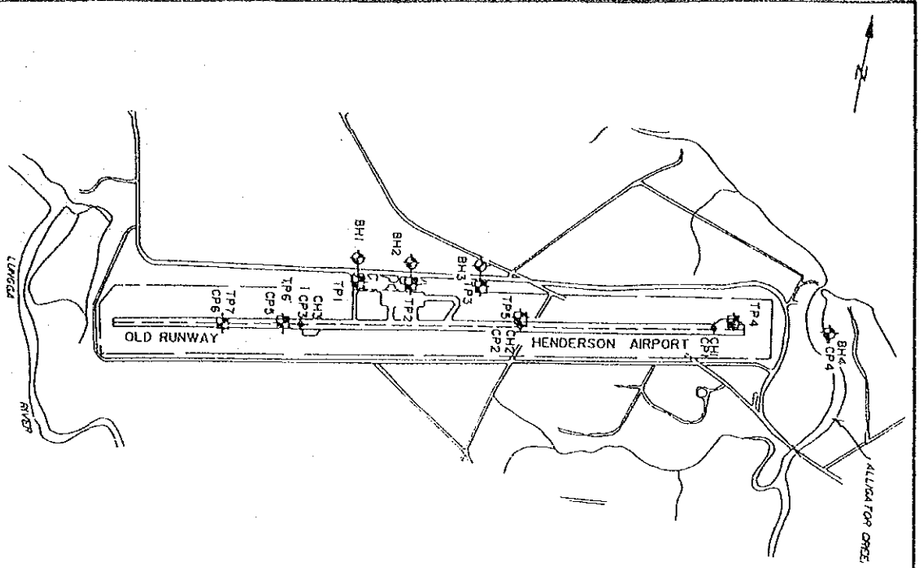
APPENDIX-3.8.1 BORE HOLE AND TEST PIT PROFILES



BUILDING AREA



RUNWAY ALIGNMENT



LEGEND

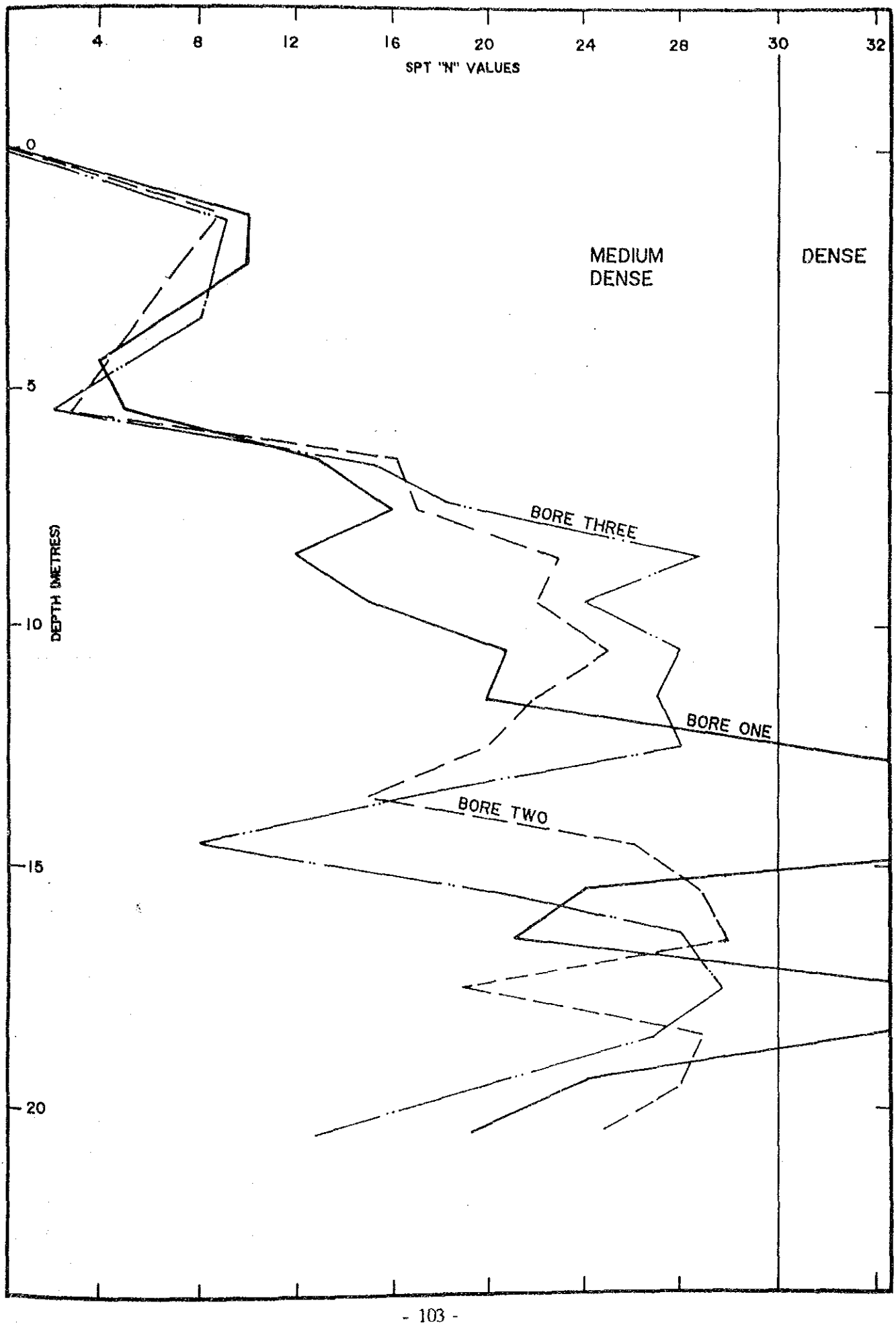
- TOPSOIL / PAVEMENT
- CLAY / SILTY CLAY
- SILTY SAND
- GRAVEL

NOTES: 1. FIGURES ARE DIAGRAMMATIC ONLY AND ARE NOT TO EXACT SCALE.

2. GROUND SURFACE SHOWN IS NOT EXACT.

BORE	DEPTH	DESCRIPTION	FIELD MOISTURE CONTENT	PLASTICITY		LINEAR SHRINKAGE	SIEVE ANALYSIS				SOIL PARTICLE DENSITY
				Liquid Limit	Plasticity Index		pass 2.36mm	pass .425mm	pass .075mm	pass .063mm	
	m		%	%	%	%	%	%	%	%	t/m³
1	2.0-2.45	SILTY CLAY (CH) brown and grey, fine sand particles	35.2	55	32	14.6	-	100	99	74	2.66
	4.00-4.45	CLAYEY SAND (SC) brown, fine to medium grained sand	40.3	44	23	10.9	100	99	84	40	2.69
	6.00-6.45	SILTY SAND (SM) and SANDY CLAY (CL) - dark grey fine to medium grained sand	34.7	37	17	8.3	100	99	62	25	2.64
	8.00-8.45	SILTY SAND (SM) brown & grey fine to coarse grained sand	34.9	43	NP	1.4	100	-	68	19	2.65
	10.00-10.45	SILTY SAND (SM) dark grey fine to coarse grained sand	33.1	NP	NP	0.9	100	99	67	30	2.56
	12.00-12.45	CLAYEY SILTY SAND (SM), dark grey fine to coarse grained sand	21.0	NP	NP	1.7	99	98	22	10	2.61
	14.00-14.45	SILTY SAND (SM) dark grey fine to coarse grained sand, slightly clayey	26.0	NP	NP	1.6	97	89	28	13	2.65
	17.00-17.45	SILTY SAND (SM) dark grey, fine to coarse grained sand, slightly clayey	27.4	28	NP	2.7	99	97	57	20	2.74
	18.00-18.45	SILTY SAND (SM) dark grey, fine to medium grained sand	31.2	29	NP	0.5	99	98	70	16	2.70
	20.00-20.45	SILTY SAND (SM) dark grey fine to medium grained sand	38.4	42	NP	0.6	100	99	82	18	2.69
2	1.00-1.45	SANDY CLAY (CH) brown, fine sand particles	46.5	54	26	16.1	-	100	97	63	-
	5.30-5.45	CLAYEY SAND (SC) dark grey fine to medium grained with organic matter	59.5	60	29	12.6	-	100	91	44	-
	7.00-7.45	SILTY SAND (SM) dark grey fine to medium grained	26.9	28	NP	0.5	-	100	89	7	-
	9.00-9.45	SILTY SAND (SM) dark grey fine to coarse grained, and GRAVEL	25.0	27	NP	1.1	83	65	13	4	-
	11.00-11.45	SILTY SAND (SM) dark grey medium to coarse grained, and fine gravel	25.7	NP	NP	0.8	98	74	8	3	-
	13.00-13.45	SILTY SAND (SM) dark grey coarse grained sand and fine GRAVEL	24.3	NP	NP	0.8	98	71	6	3	-
	15.00-15.45	SILTY SAND (SM) dark grey fine to coarse grained, some fine gravel	27.8	27	NP	0.6	97	92	22	6	-
	17.00-17.45	SILTY SAND (SM) dark grey fine to coarse grained, some fine gravel	34.1	34	NP	0.0	100	94	44	7	-
	19.00-19.45	SILTY SAND (SM) dark grey fine to coarse grained sand	32.9	33	NP	0.0	99	97	43	5	-
3	1.00-1.45	SILTY CLAY (CH), brown, slightly sandy	54.0	61	29	16.0	-	-	100	89	-
	3.00-3.45	SILTY CLAY (CH), brown, slightly sandy	43.5	56	26	14.5	-	100	98	82	-
	5.00-5.45	CLAYEY SAND (SC) dark grey fine to medium sand	50.1	38	12	3.5	-	100	88	37	-
	7.00-7.45	SILTY SAND (SM) dark grey fine to coarse grained and fine to medium GRAVEL	25.8	NP	NP	0.7	95	91	29	11	-
	9.00-9.45	SILTY SAND (SM) and GRAVEL (GW) dark grey medium to coarse grained sand and fine to medium gravel	17.6	NP	NP	3.8	70	47	12	7	-
	11.00-11.45	SILTY SAND (SM) dark grey fine to coarse grained sand and fine to medium gravel	19.3	NP	NP	2.3	73	50	10	4	-
	13.00-13.45	SILTY SAND (SM) dark grey very silty fine to coarse grained sand with some fine gravel	45.7	44	NP	4.2	100	97	75	24	-
	15.00-15.45	SILTY SAND (SM) dark grey very silty fine to coarse grained sand with some fine gravel	27.0	NP	NP	1.4	98	92	23	9	-
	17.00-17.45	SILTY SAND (SM) dark grey very silty fine to coarse grained sand with some fine gravel	28.6	NP	NP	0.0	99	97	28	9	-
	19.00-19.45	SILTY SAND (SM) dark grey silty fine to coarse grained with some fine gravel, slightly clayey	27.3	25	NP	0.6	94	87	32	9	-
	21.00-21.45	SILTY SAND (SM) dark grey fine to medium grained	37.4	36	NP	0.7	100	99	41	14	-
	23.00-23.45	SILTY SAND (SM) dark grey fine to medium grained	29.9	NP	NP	0.0	-	100	19	13	-
	25.00-25.45	SILTY SAND (SM) dark grey fine to medium grained, slightly clayey	29.8	31	NP	0.0	-	100	57	10	-
	27.00-27.45	SILTY SAND (SM) and GRAVEL (GW) dark grey fine to coarse grained	31.3	35	NP	0.1	71	68	58	10	-
	29.00-29.45	SILTY SAND (SM) dark grey, very silty fine to coarse grained, with fine to medium gravel and some dark grey SANDY SILTY CLAY	27.3	27	NP	1.8	79	76	50	31	-
	30.00-30.45	ORGANIC SANDY SILTY CLAY (CL) dark grey, fine to coarse grained sand	34.1	42	18	6.3	100	79	86	67	-
4	2.00-2.45	CLAYEY SAND (SC) dark grey, fine to coarse grained with some gravel	26.9	27	9	4.5	93	90	29	13	-
	4.00-4.45	SILTY SAND (SM) dark grey, medium to coarse grained, with some gravel	25.1	32	NP	1.0	97	91	14	7	-
	6.00-6.45	CLAYEY SAND (SC) dark grey fine to coarse grained, silty	45.0	34	15	5.7	99	97	86	42	-
	8.00-8.45	SILTY SAND (SM) dark grey fine to coarse grained	34.8	NP	NP	1.0	95	91	62	18	-
	10.00-10.45	SILTY SAND (SM) dark grey fine to medium grained with fine gravel and shell fragments	30.5	30	NP	1.1	99	98	50	10	-
TP1	2.0-2.1	SANDY CLAY (CH) brown fine sand particles	38.7	55	26	16.9	-	100	99	52	-
TP2	2.1-2.2	SANDY CLAY (CH) brown fine sand particles	52.4	55	25	13.9	-	-	100	80	-
TP3	2.1-2.2	SILTY CLAY (CH) brown, some fine sand	41.9	62	31	14.9	-	100	98	93	-
TP4	2.1-2.2	CLAYEY GRAVEL brown fine to medium gravel and medium to coarse sand particles	10.5	42	24	14.0	54	39	10	7	-
TP5	0.1-0.2	SANDY GRAVEL, grey well graded (crushed river gravel base course)	-	NP	NP	0.0	68	59	24	10	-
	0.2-0.4	CLAYEY GRAVEL dark grey (sub-base)	-	37	20	12.8	40	33	21	7	-
	2.2-2.3	SANDY CLAY (SC) grey fine to medium sand particles	50.1	44	29	15.3	-	100	76	47	-
TP6	0.1-0.3	SANDY GRAVEL yellow brown (coral base-course)	9.0	-	-	-	48	37	21	13	-
TP7	0.1-0.25	SANDY GRAVEL yellow brown (coral base-course)	10.6	28	12	5.7	56	45	30	24	-
	0.5-0.6	SANDY CLAY (CL) dark grey fine to coarse sand particles some fine to medium gravel	31.7	47	21	11.2	94	92	80	61	-

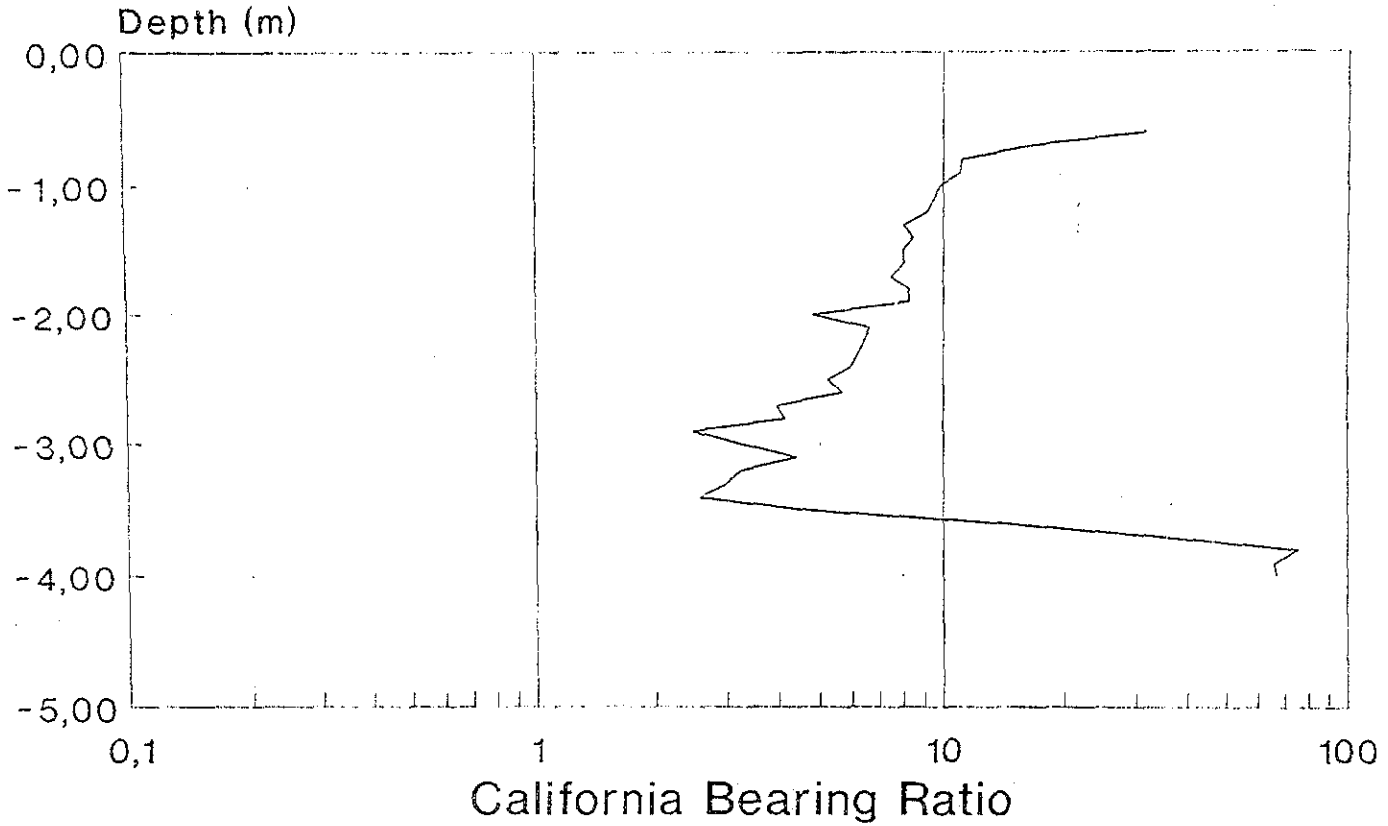
APPENDIX-3.8.2 STANDARD PENETRATION TESTS


4
8
12
16
20
24
28
30
32
SPT "N" VALUES
0
5
10
15
20
DEPTH (METRES)
MEDIUM DENSE
DENSE
BORE THREE
BORE ONE
BORE TWO

APPENDIX-3.8.3 STATIC CONE PENETROMETER TESTS

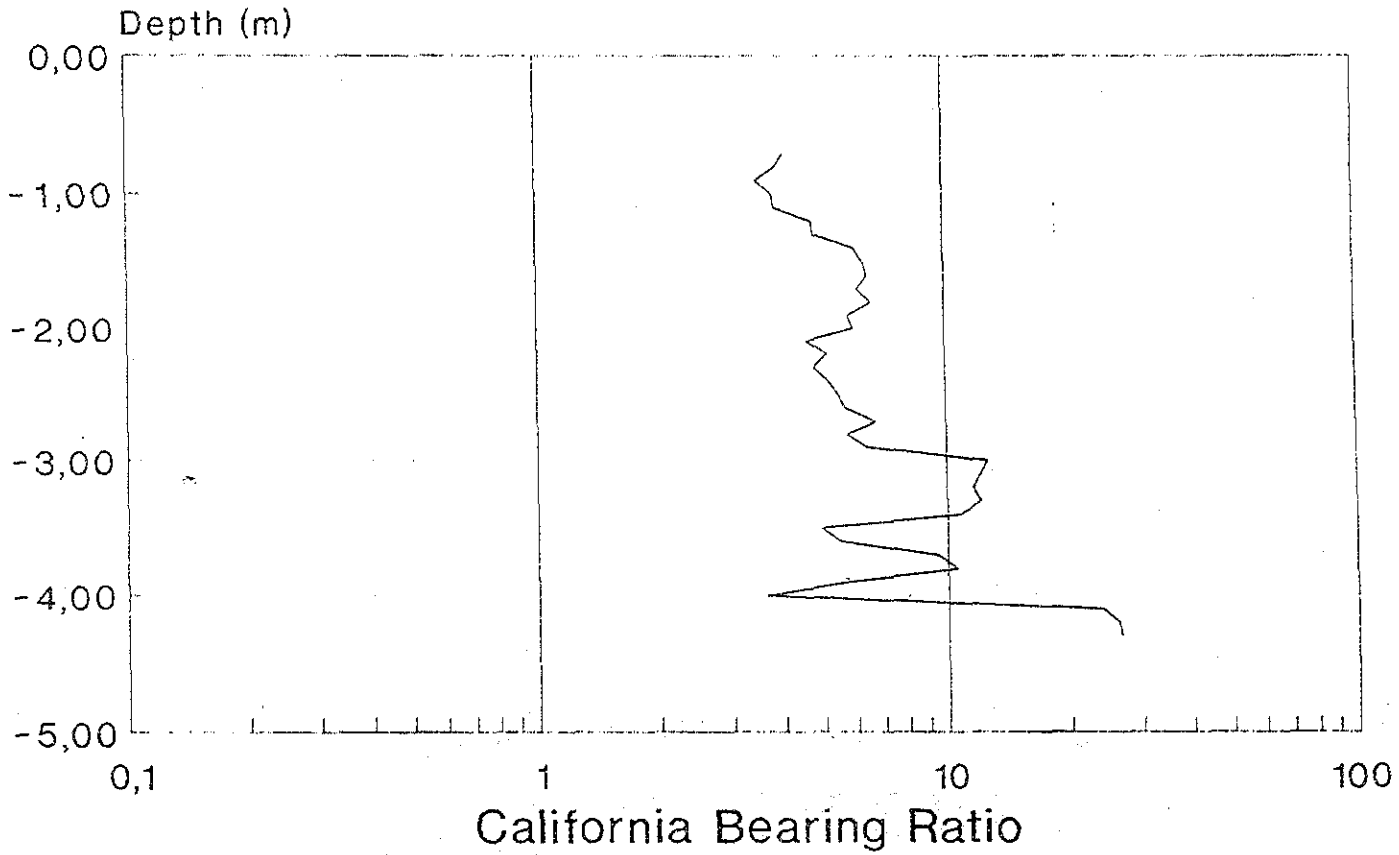
CBR vs. Depth

Henderson Airport - CP1



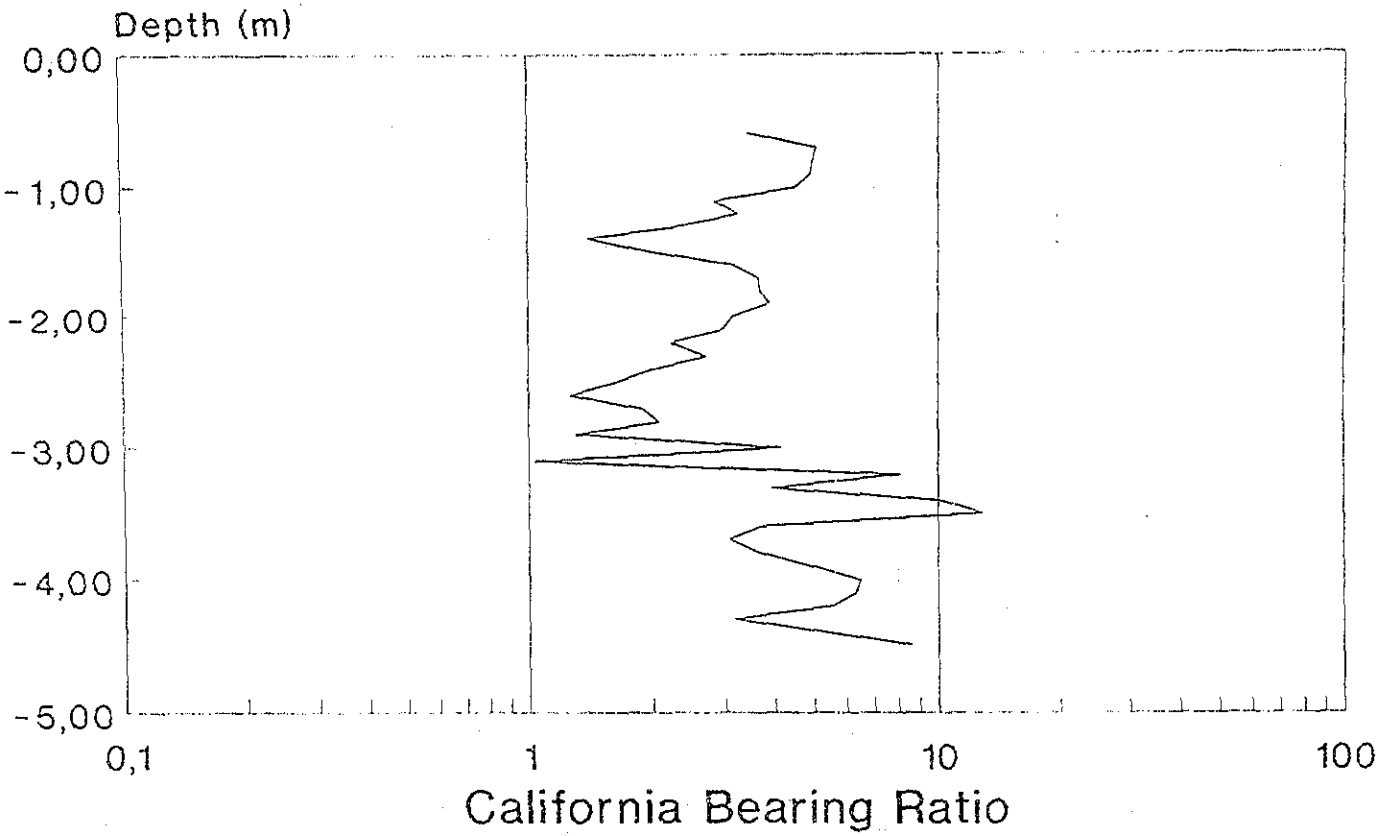
CBR vs Depth

Henderson Airport - CP2



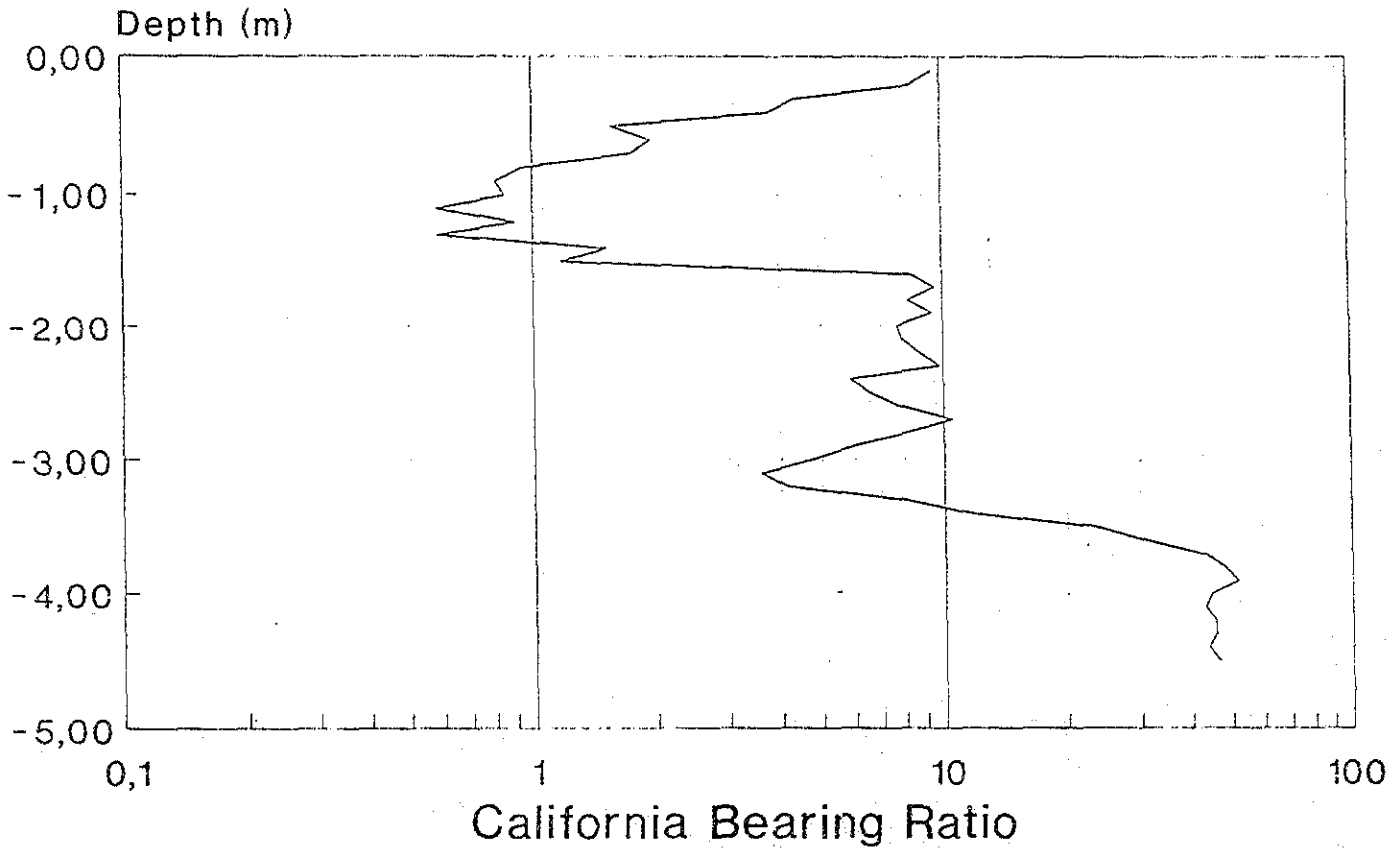
CBR vs Depth

Henderson Airport - CP3



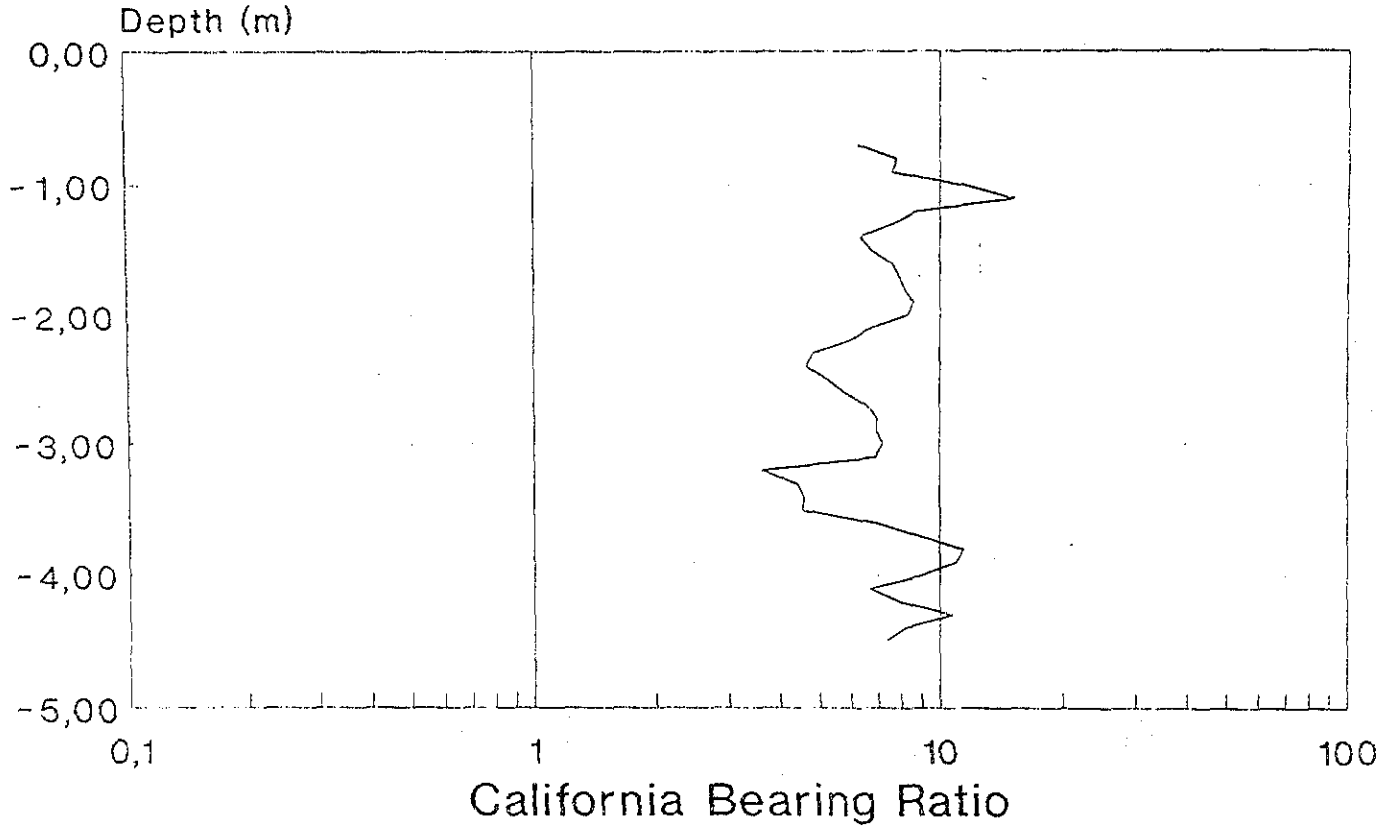
CBR vs Depth

Henderson Airport - CP4



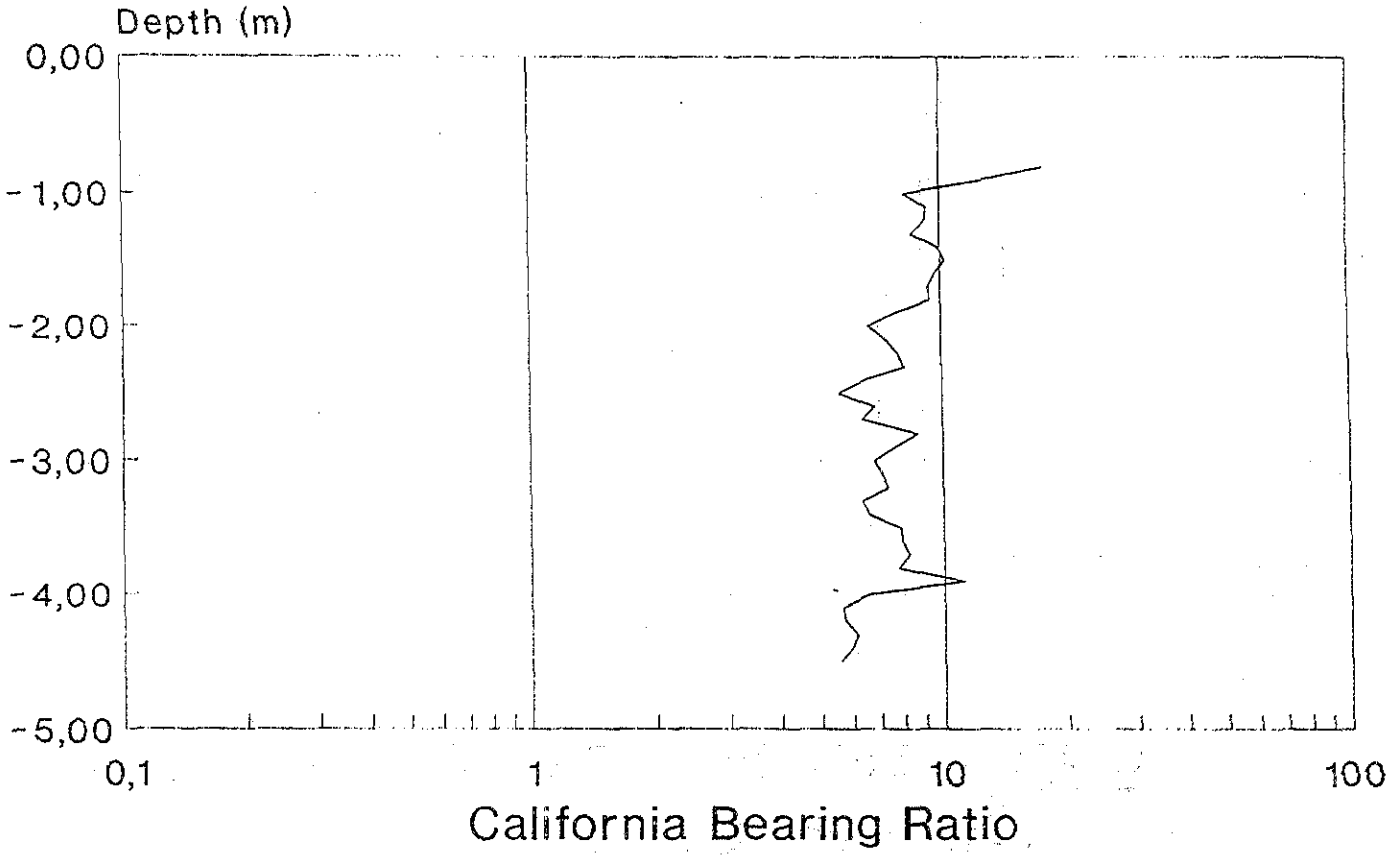
CBR vs Depth

Henderson Airport - CP5



CBR vs Depth

Henderson Airport - CP6



APPENDIX-3.8.4 UNDISTURBED CBR TESTS

LOCATION - TP No.	3	7	7
DEPTH m	2.1	0.6	0.6
MOD/MAX DRY DENSITY t/m^3	1.45	-	-
OPTIMUM MOISTURE CONTENT %	25.0	-	-
SPECIMEN DRY DENSITY t/m^3	1.18	1.43	1.45
FIELD MOISTURE %	44.0	31.7	29.6
DRY DENSITY RATIO %	81	-	-
SOAKING DATA			
SURCHARGE kg	-	-	4
PERIOD days	-	-	4
SWELL %	-	-	0.1
MOISTURE CONTENT			
TOP LAYER %	-	-	35
REMAINDER %	-	-	31
PENETRATION SURCHARGE kg	4	4	4
CBR VALUE %			
TOP 2.5 mm Penet'n	5.8	5.5	6
5.0 mm Penet'n	5.5	5.6	6
BASE 2.5 mm Penet'n	-	-	14
5.0 mm Penet'n	-	-	11

APPENDIX-3.8.5 MODIFIED CBR TESTS

LOCATION TP No.	1				2	3	5		4			6
DEPTH m	2.0				2.1	2.1	2.2		2.1			0.1
MOD/MAX DRY DENSITY t/m³	1.50				1.39	1.45	1.42		1.76			1.92
OMC %	24.0				29.0	25.0	28.0		18.0			12.0
IN-SITU DRY DENSITY t/m³	1.20				0.84	1.12	0.95		1.56			1.68
FMC %	38.7				52.4	41.9	50.1		10.5			9.0
SPECIMEN NUMBER	1	2	3	4	1	1	1	2	1	2	3	1
MOULDING CONDITIONS												
DRY DENSITY t/m³	1.23	1.35	1.43	1.42	1.01	1.11	0.95	1.28	1.74	1.69	1.70	1.72
MOISTURE CONTENT %	43.3	24.3	22.6	28.6	52.4	44.5	52.6	24.3	12.3	17.9	26.4	12.2
DRY DENSITY RATIO %	82	90	95	95	73	76	67	90	99	96	97	90
SOAKING DATA												
SURCHARGE kg	4	4	4	4	4	4	4	4	4	4	4	4
PERIOD days	4	4	4	4	4	4	4	4	4	4	4	4
POST SOAKING DATA												
DRY DENSITY t/m³	1.23	1.25	1.42	1.30	1.00	1.10	0.95	1.27	1.72	1.68	1.70	1.72
AVERAGE M.C. %	44.9	42.5	39.7	40.9	60.0	51.7	64.2	47.0	23.6	25.2	24.5	13.7
SWELL DURING SOAKING %	0.5	8.4	1.0	9.4	1.3	0.1	0	1.0	0.7	0.6	0.2	0.1
PENETRATION DATA												
SURCHARGE kg	14	14	14	14	14	14	14	14	14	14	14	14
MOISTURE CONTENT												
TOP LAYER %	46	52	51	56	59	51	61	64	35	26	25	15
REMAINDER %	40	29	26	36	55	45	44	33	20	23	20	15
CBR VALUE %												
TOP 2.5 mm Pent'n	3.0	2.3	2.4	2.5	2.9	1.8	0.7	2.4	3.8	4.3	5.2	56
5.0 mm Pent'n	3.8	3.2	2.9	3.0	2.7	1.6	0.7	2.9	4.7	3.6	6.7	51
BASE 2.5 mm Pent'n	5.4	8.2	11.7	28	3.8	2.3	1.7	8.2	13.2	10.7	15.0	35
5.0 mm Pent'n	5.3	6.9	9.0	-	3.1	2.0	1.4	6.3	10.6	9.2	14.0	33

NOTES: (1) Samples from Test Pits 1, 2, 3 & 5 are essentially similar sandy clays and have been grouped together for ease of comparison. The sample from Test Pit 4 is clayey gravel, and that from Test Pit 6 is coral gravel.

(2) The test specimens were tested both ends, after soaking. "Top" represents the end able to swell under the restraint of 4kg surcharge; whilst the base was fully confined in the mould.

APPENDIX-3.8.6 DENSITY IN PLACE TESTS

LOCATION TP	STARTING DEPTH m	DATE OF TEST	FIELD MOISTURE CONTENT %	DENSITY BULK t/m³	DENSITY DRY t/m³	MODIFIED COMPACTION OMC %	MODIFIED COMPACTION MAX/DRY DENSITY t/m³	DRY DENSITY RATIO %
1	2.0	18.10.90	38.7	1.66	1.20	24.0	1.50	80
2	2.1	18.10.90	52.4	1.27	0.84	29.0	1.39	61*
3	2.1	25.10.90	41.9	1.60	1.13	25.0	1.45	78
4	2.1	18.10.90	10.5	1.72	1.56	18.0	1.76	89
5	2.2	18.10.90	50.1	1.43	0.95	28.0	1.42	67
6	0.1	18.10.90	9.0	1.83	1.68	12.0	1.92	88
7	0.1	25.10.90	10.6	1.82	1.64	12.0	1.92	86

* In place density unusally low, and may have been slightly disturbed by the backhoe.

APPENDIX-3.8.7 COMPACTION TESTS

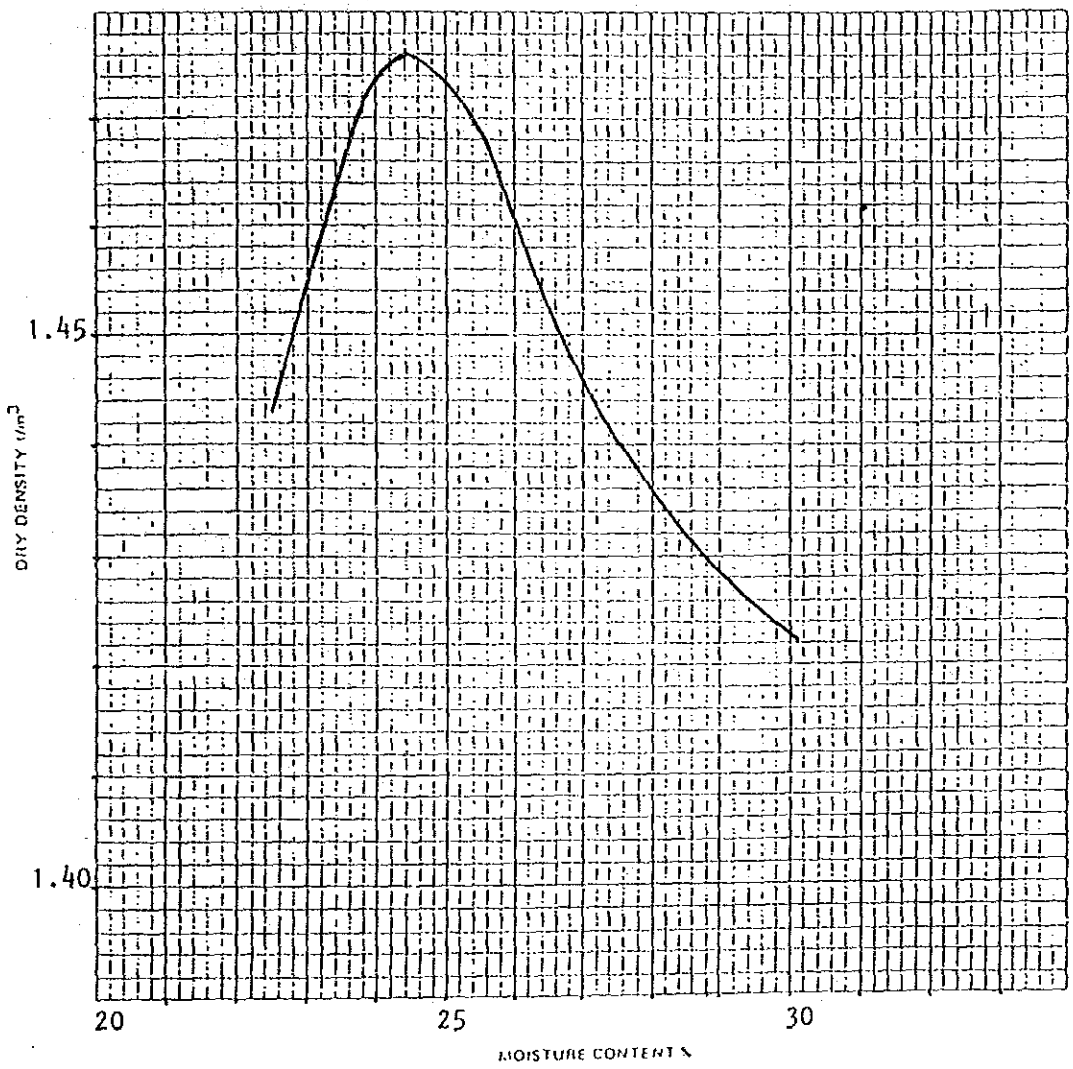
PROJECT HENDERSON INTERNATIONAL AIRPORT

LOCATION HONIARA, SOLOMON ISLANDS

PROJECT No. 90638179

TEST PIT No. 1

DEPTH 2.0 - 2.1m



SAMPLE DESCRIPTION Brown sandy clay

FIELD MOISTURE CONTENT 38.7 %

MAXIMUM DRY DENSITY 1.50 t/m³ OPTIMUM MOISTURE CONTENT 24.0 %

Test type, numbers MODIFIED COMPACTION

LABORATORY MTWU HONIARA

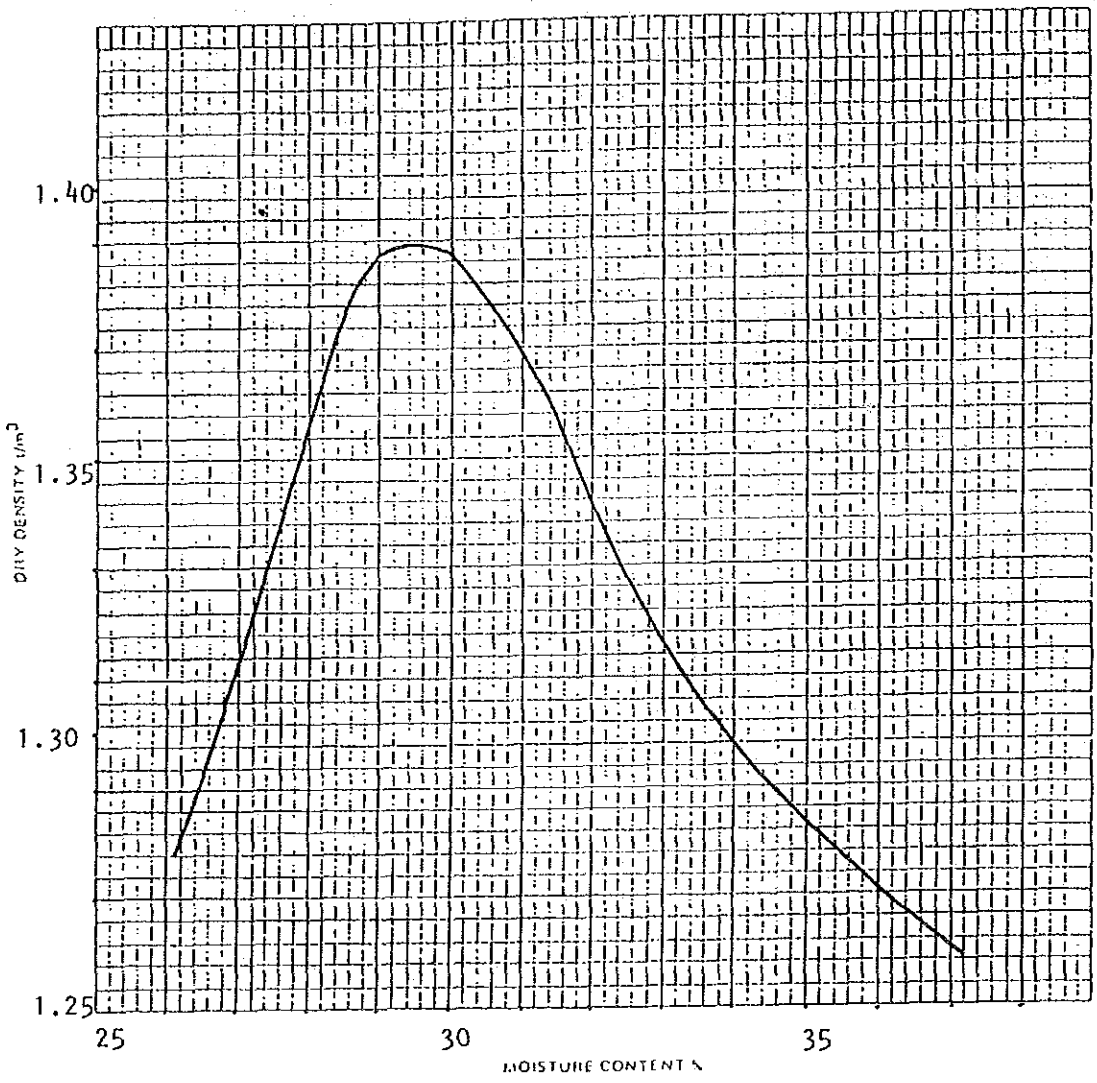
PROJECT HENDERSON INTERNATIONAL AIRPORT

LOCATION HONIARA, SOLOMON ISLANDS

PROJECT No. 90638179

TEST PIT No. 2

DEPTH 2.1 - 2.2m



SAMPLE DESCRIPTION Brown sandy clay

FIELD MOISTURE CONTENT 52.4 %

MAXIMUM DRY DENSITY 1.39 t/m^3 OPTIMUM MOISTURE CONTENT 29.0 %

Test type, numbers MODIFIED COMPACTION

LABORATORY MTWU HONIARA

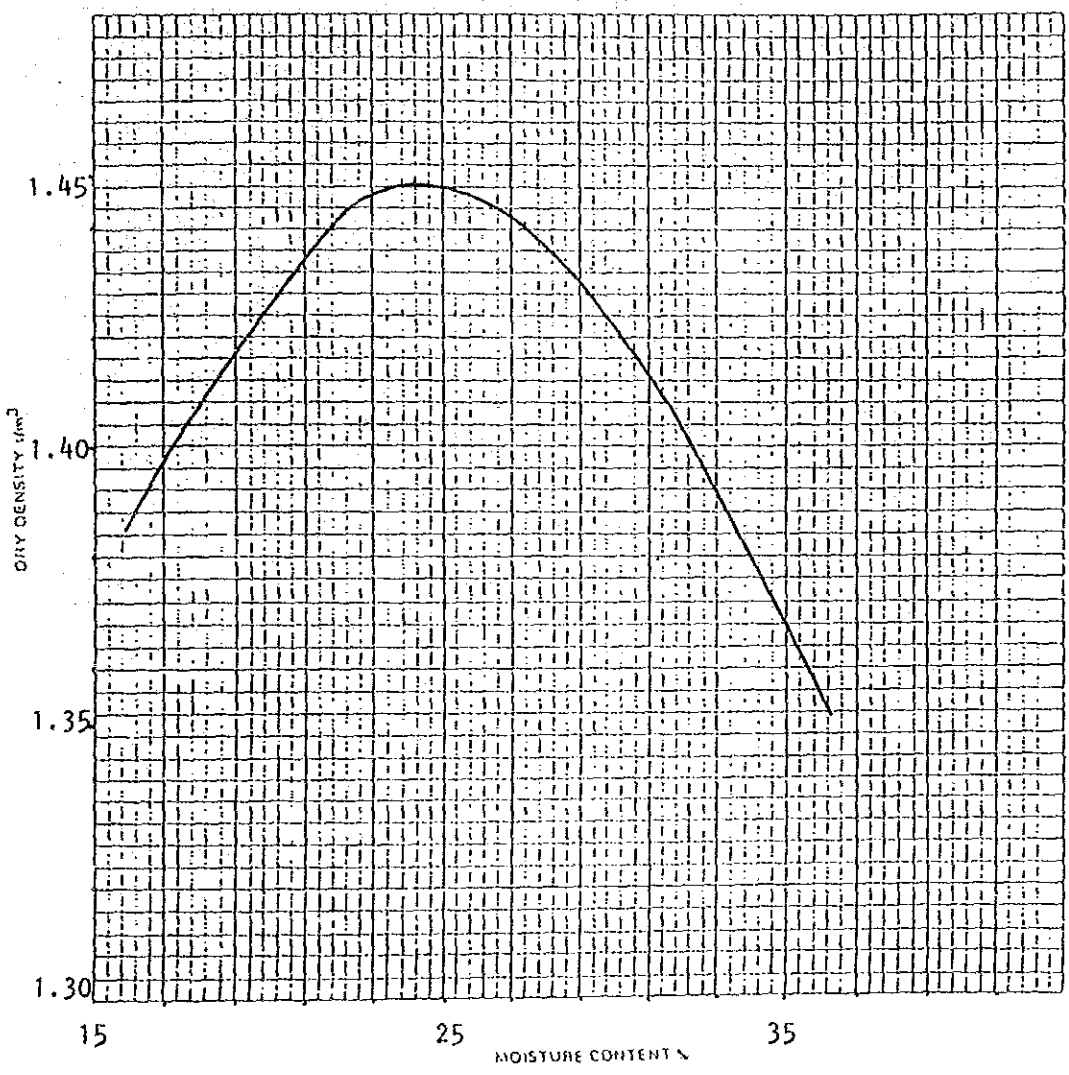
PROJECT HENDERSON INTERNATIONAL AIRPORT

LOCATION HONIARA, SOLOMON ISLANDS

PROJECT No. 90638179

TEST PIT No. 3

DEPTH 2.1 - 2.2m



SAMPLE DESCRIPTION Brown sandy clay

FIELD MOISTURE CONTENT 41.9 %

MAXIMUM DRY DENSITY 1.45 t/m^3 OPTIMUM MOISTURE CONTENT 25.0 %

Test type, numbers MODIFIED COMPACTION

LABORATORY MTWU HONIARA

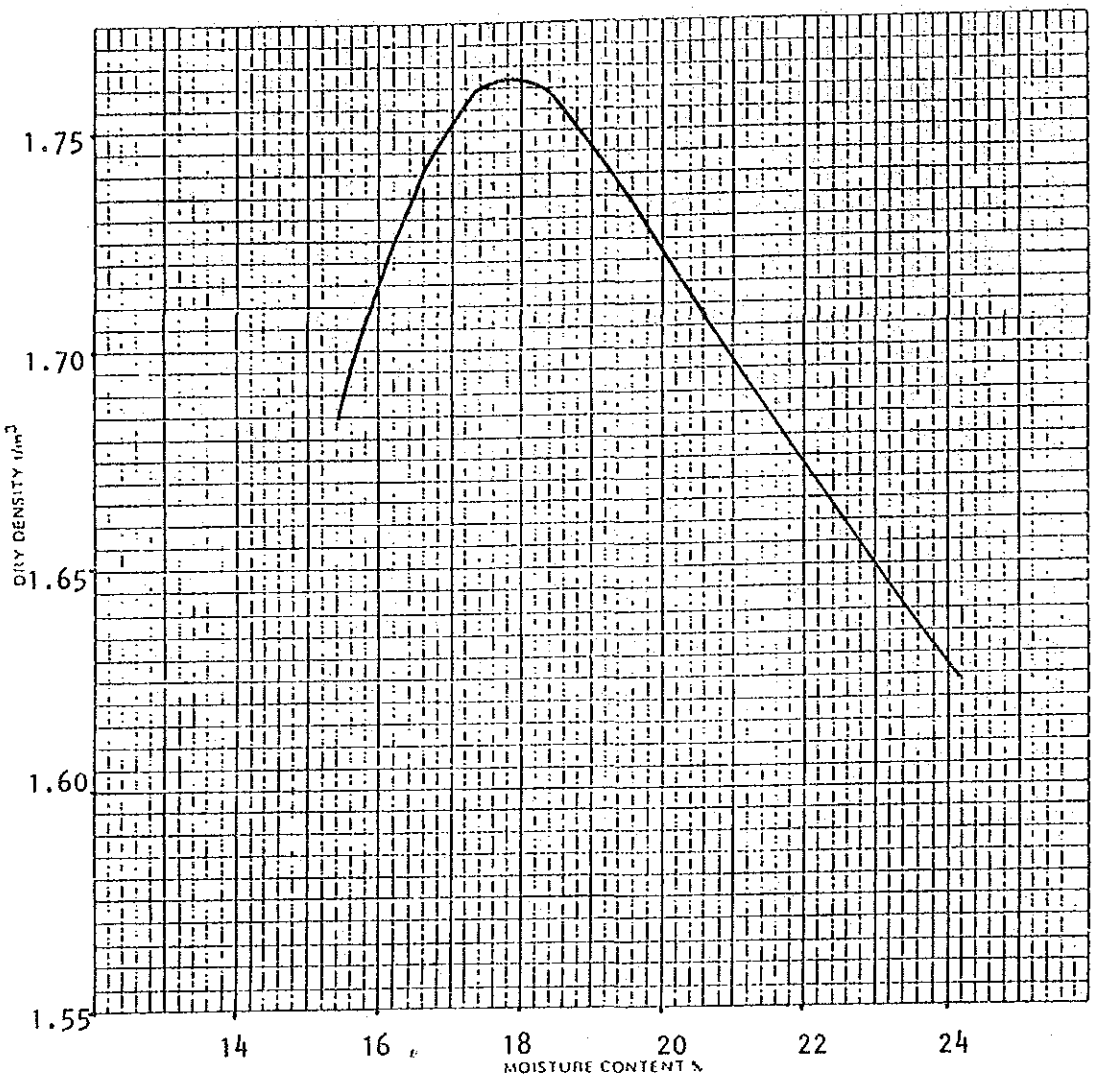
PROJECT HENDERSON INTERNATIONAL AIRPORT

LOCATION HONIARA, SOLOMON ISLANDS

PROJECT No. 90638179

TEST PIT No. 4

DEPTH 2.1 - 2.2m



SAMPLE DESCRIPTION Brown clayey gravel

FIELD MOISTURE CONTENT 10.5 %

MAXIMUM DRY DENSITY 1.76 t/m³ OPTIMUM MOISTURE CONTENT 18.0 %

Test type, numbers MODIFIED COMPACTION

LABORATORY MTWU HONIARA

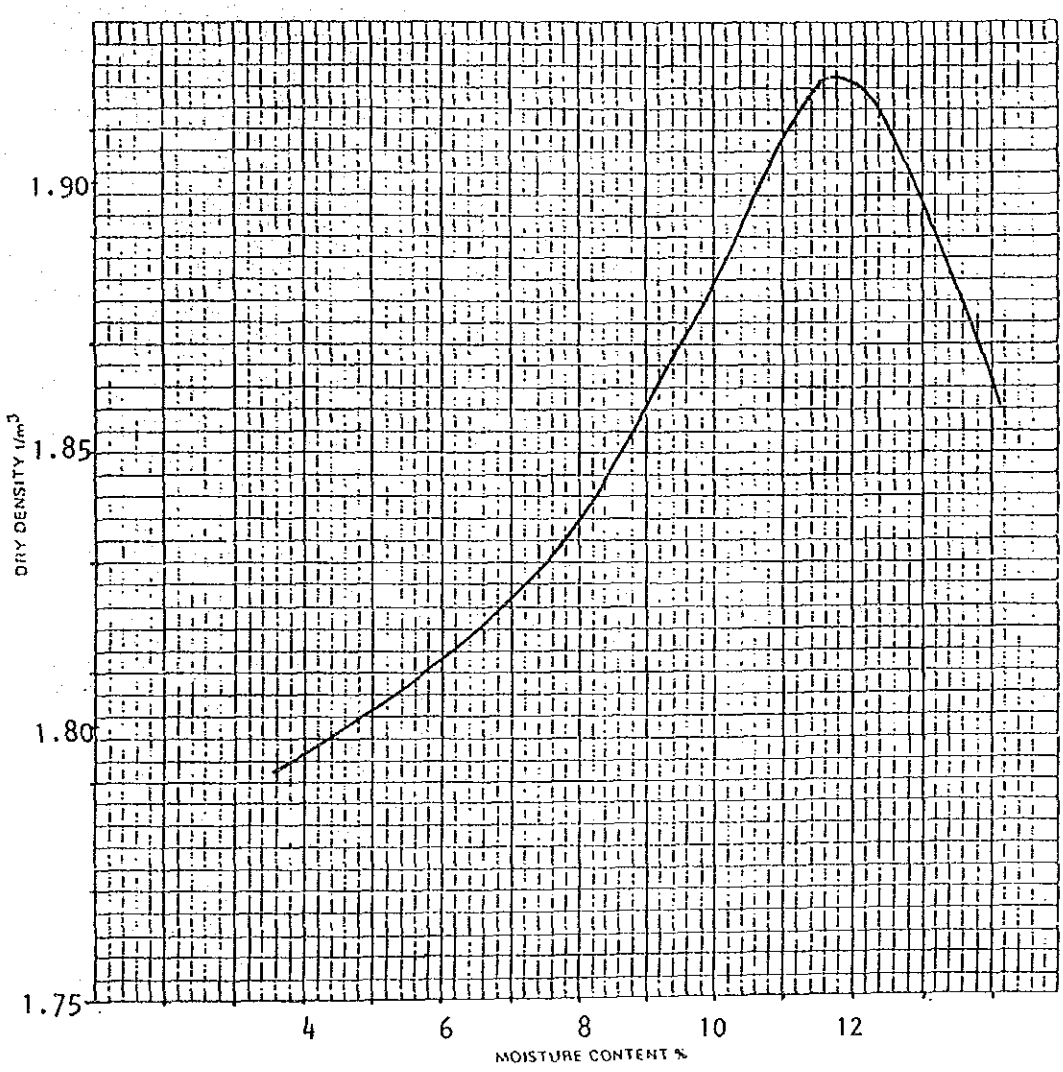
PROJECT HENDERSON INTERNATIONAL AIRPORT

LOCATION HONIARA, SOLOMON ISLANDS

PROJECT No. 90638179

TEST PIT No. 6

DEPTH 0.1 - 0.2m



SAMPLE DESCRIPTION YELLOW BROWN CORAL GRAVEL

FIELD MOISTURE CONTENT 9.0%

MAXIMUM DRY DENSITY 1.92 t/m³ OPTIMUM MOISTURE CONTENT 12.0 %

Test type, numbers MODIFIED COMPACTION

LABORATORY MTWU HONIARA

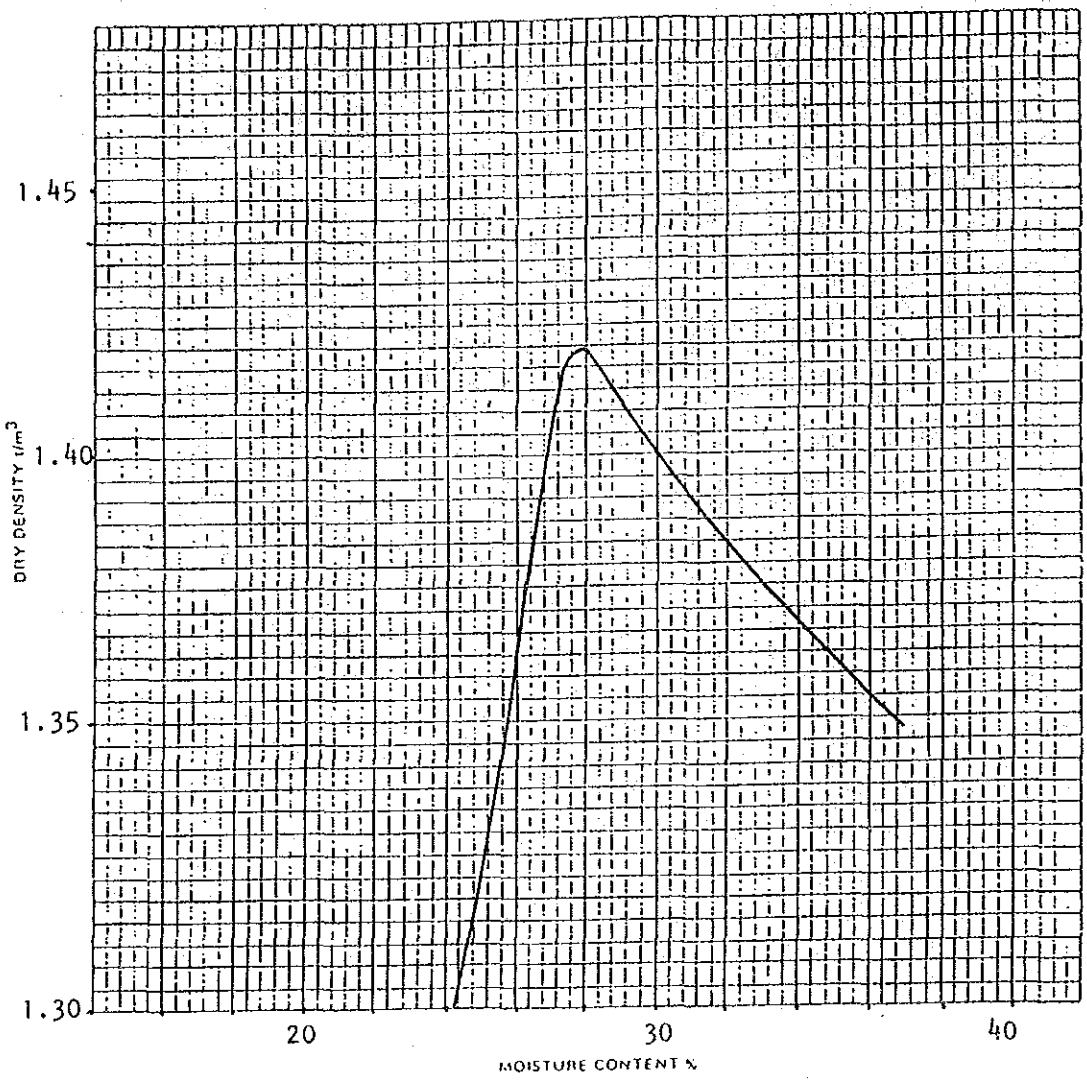
PROJECT HENDERSON INTERNATIONAL AIRPORT

LOCATION HONIARA, SOLOMON ISLANDS

PROJECT No. 90638179

TEST PIT No. 5

DEPTH 2.2 - 2.3m



SAMPLE DESCRIPTION Grey sandy clay

FIELD MOISTURE CONTENT 50.1 %

MAXIMUM DRY DENSITY 1.42 t/m^3 OPTIMUM MOISTURE CONTENT 28.0 %

Test type, numbers MODIFIED COMPACTION

LABORATORY MTWU HONIARA

APPENDIX-3.8.8 CONSOLIDATION AND TRIAXIAL SHEAR TESTS

RESULTS OF LABORATORY TESTING IN BRISBANE

BH No.	DEPTH	DESCRIPTION	IN-SITU CONDITION		STRENGTH		PLASTICITY		LINEAR SHRINKAGE	GRADING			COMPRESS-IBILITY
			Moisture Content	Dry Density	Cohesion	Friction	Liquid Limit	Plasti-city Index		pass 2.36mm	pass .425mm	pass .075mm	
	m		%	t/m³	kPa	degrees	%	%	%	%	%	%	
2	2.00-2.45	Dark brown slightly SANDY CLAY	35.9	1.30	-	-	58	24	18.5	100	98	84	Medium
2	3.00-3.45	STIFF to VERY STIFF dark brown slightly SANDY CLAY	45.6	1.16	40	10	52	29	14.5	100	99	91	Medium
2	4.00-4.45	Brown SANDY SILTY CLAY	46.4	1.20	-	-	36	14	8.0	100	98	68	-
3	2.00-2.45	STIFF to VERY STIFF brown SANDY SILTY CLAY	43.5	1.20	40	10	51	30	14.5	100	99	64	-
3	4.00-4.45	Dark brown SANDY SILTY CLAY	44.4	1.16	-	-	45	24	11.0	99	96	76	Medium

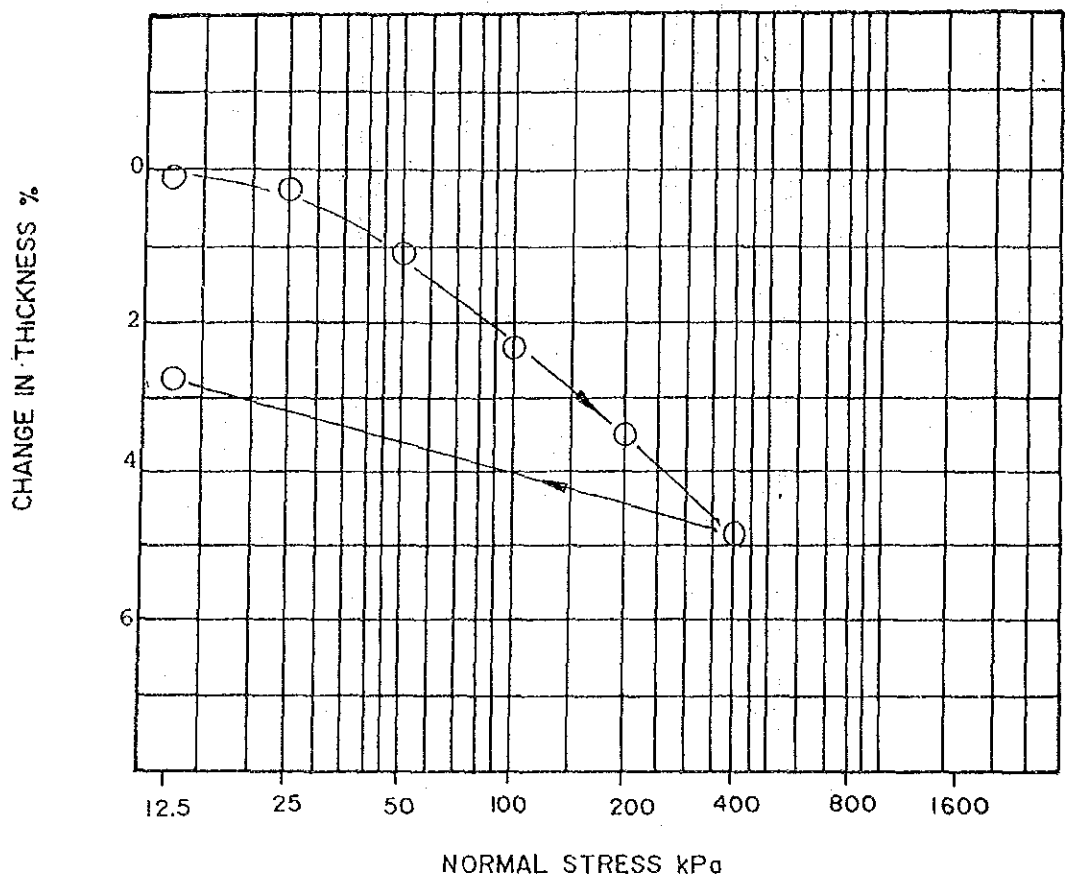
PROJECT HENDERSON INTERNATIONAL AIRPORT

PROJECT No. 90638179

LOCATION HONIARA, SOLOMON ISLANDS

BOREHOLE No. 2

DEPTH 2.0 - 2.45m



SAMPLE DESCRIPTION Dark brown slightly SANDY CLAY.

INITIAL MOISTURE CONTENT 35.9 % INITIAL DRY DENSITY 1.30 t/m^3

PRESSURE RANGE	kPa	25-50	25-100	25-200	25-400	200-400
m_v COEFFICIENT OF VOLUME CHANGE	kPa^{-1}	$3.2x10^{-4}$	$2.7x10^{-4}$	$1.8x10^{-4}$	$1.2x10^{-4}$	$1.3x10^{-4}$
c_v COEFFICIENT OF CONSOLIDATION	m^2/year	-	-	-	-	88

Test type, numbers AS1289 F6.1

Sample Preparation Cut from 50mm undisturbed tube sample

Inundation Pressure 12.5kPa

Sample Size 45mm dia x 15mm Moisture Content after test 29.5 %

LABORATORY Brisbane REPORT No. 019/1 DATE 6.11.90

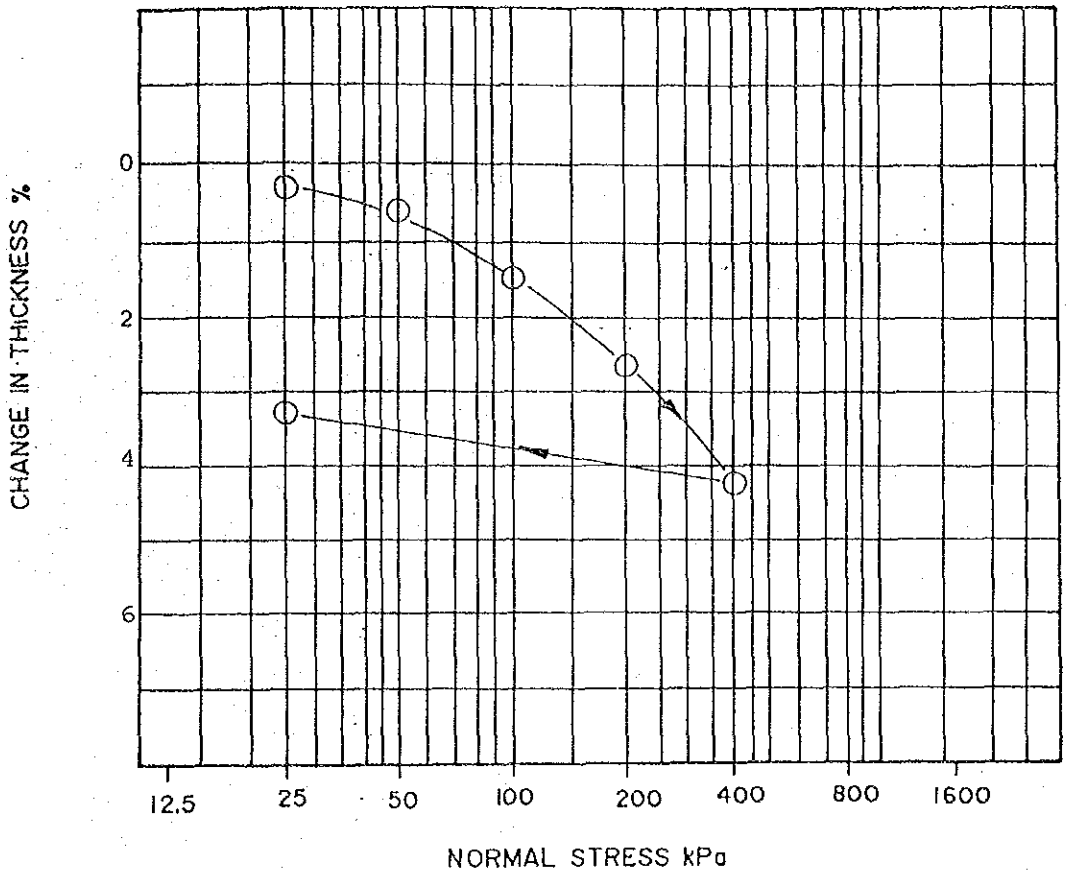
PROJECT HENDERSON INTERNATIONAL AIRPORT

PROJECT No. 90638179

LOCATION HONIARA, SOLOMON ISLANDS

BOREHOLE No. 3

DEPTH 4.00 - 4.45m



SAMPLE DESCRIPTION Dark brown SANDY SILTY CLAY.

INITIAL MOISTURE CONTENT 44.4 % INITIAL DRY DENSITY 1.16t/m^3

PRESSURE RANGE	kPa	50-100	50-200	50-400	200-400	
m_v COEFFICIENT OF VOLUME CHANGE	kPa^{-1}	$1.6x10^{-4}$	$1.4x10^{-4}$	$1.0x10^{-4}$	$1.5x10^{-4}$	
c_v COEFFICIENT OF CONSOLIDATION	m^2/year	-	-	-	88	

Test type, numbers AS1289 F6.1

Sample Preparation Cut from 50mmundisturbed tube sample.

Inundation Pressure 25kPa

Sample Size 45mm dia x 15mm Moisture Content after test 34.4 %

LABORATORY BRISBANE REPORT No. 019/4 DATE 6.11.90

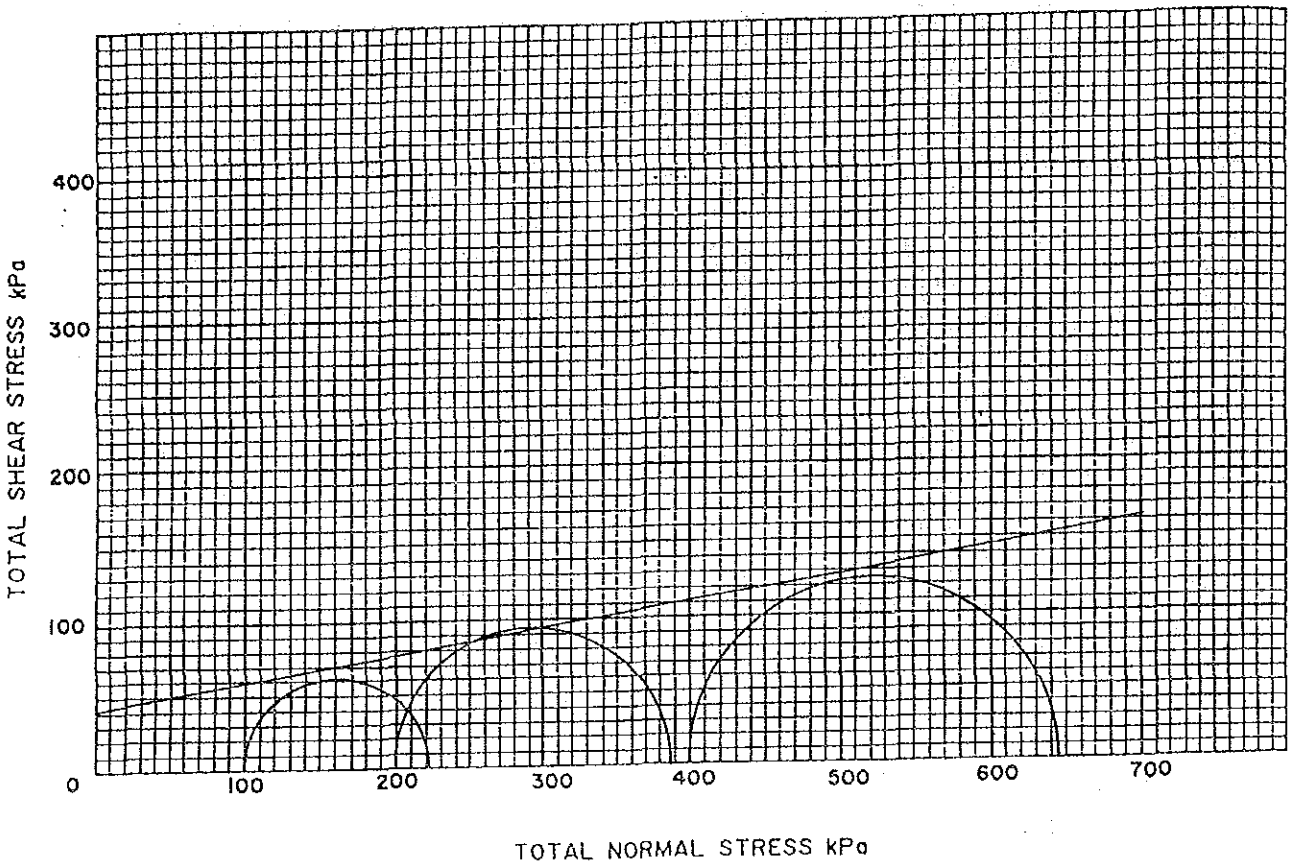
PROJECT HENDERSON INTERNATIONAL AIRPORT

PROJECT No. 90638179

LOCATION HONIARA, SOLOMON ISLANDS

BOREHOLE No. 2

DEPTH 3.00 - 3.45m



SAMPLE DESCRIPTION STIFF TO VERY STIFF dark brown slightly SANDY CLAY.

FIELD MOISTURE CONTENT 45.6 %

DRY DENSITY 1.16 t/m^3

APPARENT COHESION 40 kPa

APPARENT FRICTION ANGLE 10^0

Test type, number AS1289 F4.1

Sample Preparation Cut from 50mm undisturbed tube sample.

Strain Rate 1.0%/min

Strain at Failure - Stage I 2.8 %

Stage II 3.8 %

Stage III 4.5 %

Sample Size 48mm dia x 100mm

LABORATORY Brisbane REPORT No. 019/2 DATE 2.11.90

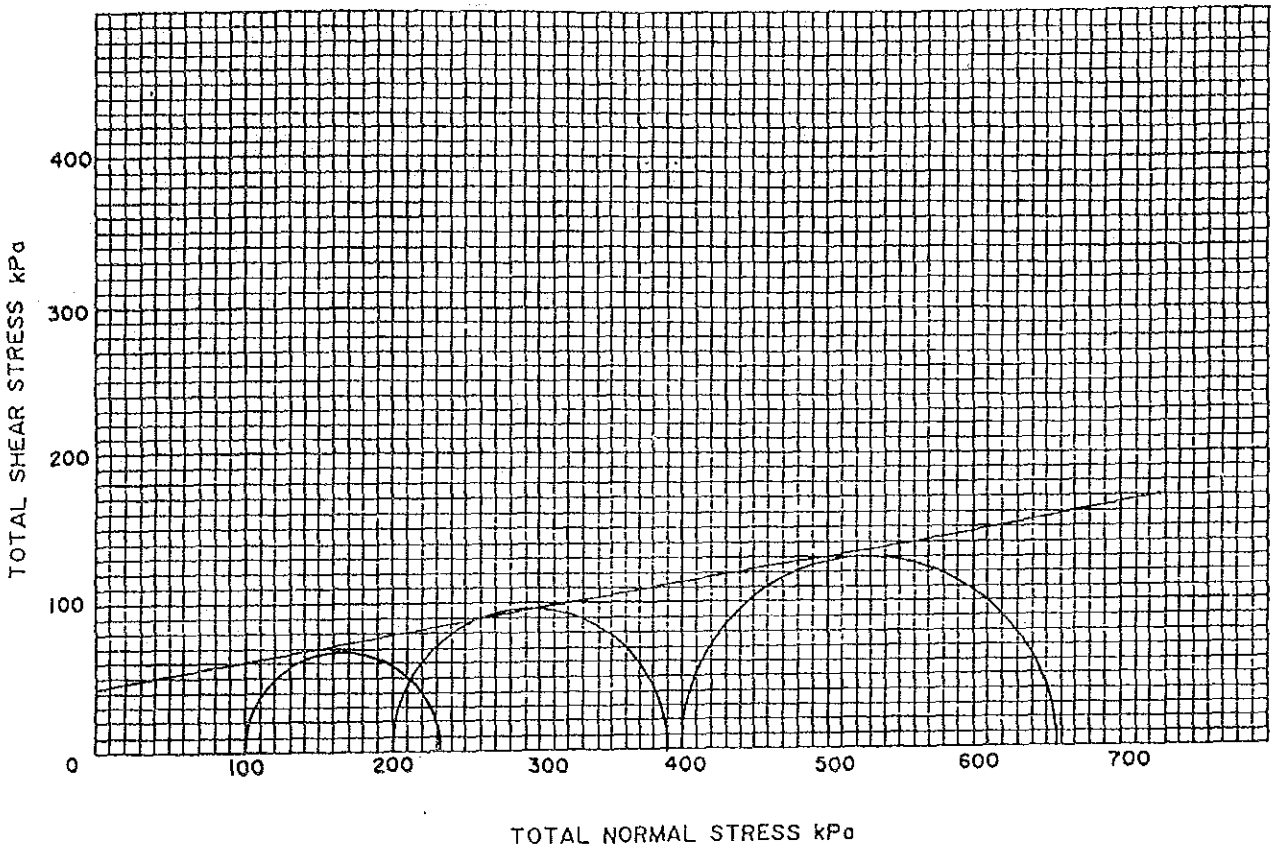
PROJECT HENDERSON INTERNATIONAL AIRPORT

PROJECT No. 90638179

LOCATION HONIARA, SOLOMON ISLANDS

BOREHOLE No. 3

DEPTH 2.00 - 2.45m



SAMPLE DESCRIPTION STIFF TO VERY STIFF brown SANDY SILTY CLAY

FIELD MOISTURE CONTENT 43.5%

DRY DENSITY 1.20 t/m^3

APPARENT COHESION 40 kPa

APPARENT FRICTION ANGLE 10 °

Test type, number AS1289 F4.1

Sample Preparation Cut from 50mm undisturbed tube sample.

Strain Rate 1.0%/min.

Strain at Failure - Stage I 4.8 %

Stage II 6.5 %

Stage III 8.0 %

Sample Size 48mm dia x 100mm

LABORATORY BRISBANE REPORT No. 019/3 DATE 2.11.90

APPENDIX-3.8.9 BITUMINOUS CORE TESTS

BITUMINOUS CORES - FIELD DATA

LOCATION AND LAYER	AVERAGE THICKNESS mm	DENSITY t/m^3	COMPACTION %	VOIDS %
CH 1				
TOP	55	2.382	95.9	4.1
MIDDLE	63	2.391	94.9	5.1
BOTTOM	47	2.329	92.9	7.1
CH 2				
TOP	39	2.311	93.0	7.0
MIDDLE	71	2.319	92.1	7.9
BOTTOM	60	2.328	92.9	7.1
CH 3				
TOP	46	2.324	93.5	6.5
MIDDLE	59	2.369	94.1	5.9
BOTTOM	70	2.339	95.7	4.3

BITUMINOUS CORES

RESULTS OF TEST ON RECONSTITUTED SAMPLES

LAYER	TOP	MIDDLE	BOTTOM
MAX THEORETICAL DENSITY t/m^3	2.485	2.518	2.506
AIR VOIDS %	5.0	6.1	6.3
MINERAL AGGREGATE VOIDS %	17.2	14.6	15.5
FILLED VOIDS %	70.7	58.3	59.0
BITUMEN %	5.3	3.7	4.0
RECOMPACTED DENSITY t/m^3	2.360	2.365	2.347
MARSHALL STABILITY kN	13.9	11.4	13.6
FLOW mm	3.1	3.6	4.6
STIFFNESS kN/mm	4.5	3.2	3.0
GRADING			
Percentage Passing			
SIEVE SIZE mm -			
19.0	-	100	100
13.2	100	81	85
9.5	92	55	60
6.7	77	44	47
4.75	64	37	40
2.36	47	29	31
1.18	34	22	25
0.60	23	16	18
0.30	17	12	13
0.15	14	9	9
0.075	12	8	7

APPENDIX TO CHAPTER 4

APPENDIX-4.3.1 DATA FOR CROSS-SECTION ANALYSIS ON INTERNATIONAL PASSENGER DEMAND

Data for cross-section Analysis on International Passenger Demand

Solomon Islands to and from :	Outgoing & Incoming International Passengers				GDP (Million US$, 1988)		Airway Trip Time (Minuets)
	1987		1988		1987	1988	
	Ratio (%)	Passengers	Ratio (%)	Passengers			
1. Australia	39.5	14,815	36.3	12,645	196,030	203,460	180
2. New Zealand	11.7	4,388	12.0	4,180	35,030	34,610	315
3. Papua New Guinea	10.5	3,938	12.5	4,354	3,110	3,210	130
4. Fiji	2.8	1,050	3.3	1,150	1,160	1,130	250
5. Japan	4.3	1,613	5.5	1,916	2,387,440	2,524,660	1,090
6. United Kingdom	7.0	2,625	5.3	1,846	686,820	713,800	1,890
7. U.S.A.	9.5	3,563	8.5	2,961	4,528,450	4,737,370	1,390
8. Other Pacific	5.5	2,063	6.4	2,229	-	-	-
9. Other Europe	2.0	750	1.9	662	-	-	-
10. Other	7.2	2,700	8.3	2,891	-	-	-
11. Total	100.0	37,506	100.0	34,834	-	-	-
(12) Solomon Islands					129	136	

APPENDIX-4.3.2 DATA FOR ESTIMATION OF DEMAND ELASTICITY FOR INTERNATIONAL PASSENGER DEMAND

(1) Passenger Traffic between Japan and Foreign Countries

	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.S.A.	288,030	3,036,300	3,261,620	3,488,450	3,882,250	4,048,460	4,466,510	5,357,460	n.a.
Canada	406,596	383,060	375,470	384,664	430,470	471,110	580,760	740,144	925,512
U.Kingdom	552,334	643,650	624,406	689,562	895,968	766,808	705,618	891,004	1,009,160
France	937,720	945,248	998,372	971,944	963,904	1,019,950	1,086,640	1,218,370	n.a.
Korea	1,155,100	1,314,310	1,422,740	144,8710	1537,740	1,685,010	1,953,060	2,226,110	2,895,890

(2) GDP of Japan and Foreign Countries (Million US$, 1988)

	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.S.A.	3,751,800	3,824,370	3,726,870	3,860,020	4,116,360	4,259,810	4,381,080	4,528,450	4,737,370
Canada	327,480	337,310	325,830	337,870	358,610	375,190	386,010	402,540	424,840
U.Kingdom	578,900	572,620	580,180	601,440	612,300	635,340	657,620	686,820	713,800
France	783,860	793,070	813,280	81,8910	829,680	845,290	864,810	885,540	919,680
Korea	69,900	74,500	80,040	89,470	97,890	104,670	117,650	131,810	146,940
Japan	1,830,550	1,897,780	1,956,290	2,019,690	2,122,200	2,221,900	2,281,550	2,387,440	2,524,660